Test Date	16/12/2024
Test Time	9:00 AM - 10:30 AM
Subject	RRB JE DMS CMA CS MS

* Note
Correct Answer will carry 1 mark per Question.
Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.
2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : **RRB JE, DMS, CMA, CS, MS CBT-1**

Q.1 SKIB is related to OGNG in a certain way based on the English alphabetical order. In the same way, CUCV is related to YQHA. To which of the following options is QIRK related, following the same logic?

Ans
- ✗ 1. MWEP
- ✗ 2. MWPE
- ✗ 3. MEPW
- ✓ 4. MEWP

Q.2 The magnetic field inside a long, straight solenoid carrying current is _____.

Ans
- ✓ 1. uniform and parallel to the axis of the solenoid
- ✗ 2. inversely proportional to the current
- ✗ 3. zero
- ✗ 4. stronger near the edges

Q.3 Which of the following materials is likely to be non-biodegradable?

Ans
- ✗ 1. Paper
- ✓ 2. Plastic
- ✗ 3. Vegetable peels
- ✗ 4. Wood

Q.4 Which of the following articles deals with the Finance Commission that distributes taxes between the Centre and State?

Ans
- ✗ 1. Article 281
- ✗ 2. Article 283
- ✗ 3. Article 282
- ✓ 4. Article 280

Q.5 If the three angles of a quadrilateral are $70°$, $85°$ and $95°$, then find the fourth angle.

Ans
- ✗ 1. 115°
- ✗ 2. 105°
- ✓ 3. 110°
- ✗ 4. 100°

Q.6	What should come in place of the question mark (?) in the given series based on the English alphabetical order?
	ONL AZX MLJ YXV ?
Ans	✘ 1. JKH
	✘ 2. JHK
	✔ 3. KJH
	✘ 4. KHJ

Q.7	What should come in place of the question mark (?) in the given series?
	1 13 28 46 67 ?
Ans	✘ 1. 90
	✘ 2. 92
	✘ 3. 93
	✔ 4. 91

Q.8	Which of the following is NOT an agent of dispersal of seeds?
Ans	✘ 1. Animal
	✔ 2. Sunlight
	✘ 3. Wind
	✘ 4. Water

Q.9	Write the expanded form of $(9a + 4b + 5c)^2$.
Ans	✘ 1. $81a^2 + 16b^2 + 25c^2 + 72ab + 35bc + 90ac$
	✘ 2. $81a^2 + 16b^2 + 25c^2 + 72ab + 40bc + 100ac$
	✔ 3. $81a^2 + 16b^2 + 25c^2 + 72ab + 40bc + 90ac$
	✘ 4. $81a^2 + 16b^2 + 25c^2 + 76ab + 40bc + 90ac$

Q.10	Evaluate: 16 + 16 ÷ 4 - 3 × 3
Ans	✘ 1. 14
	✘ 2. 13
	✔ 3. 11
	✘ 4. 10

Q.11	On oxidation, silver changes its colour to _____ and copper changes its colour to _____.
Ans	✘ 1. grey; green
	✔ 2. black; green
	✘ 3. black; blue
	✘ 4. grey; blue

Q.12	Find the median of the data given below.
	180, 90, 134, 68, 52, 152, 88, 110
Ans	✘ 1. 89
	✘ 2. 60
	✔ 3. 100
	✘ 4. 110

Q.13	17 men can dig a ditch 26 m long in 18 days, working 8 hours a day. How many more men should be engaged to dig a similar ditch 39 m long in 6 days, each man now working 9 hours a day?
Ans	✗ 1. 48
	✗ 2. 55
	✔ 3. 51
	✗ 4. 53

Q.14	Self pollination is possible only in:
Ans	✗ 1. bisexual flowers with both stamens and pistil maturing at the different time
	✗ 2. unisexual flowers with pistil maturing first
	✗ 3. unisexual flowers with stamen maturing first
	✔ 4. bisexual flowers with both stamens and pistil maturing at the same time

Q.15	P is the sister of Q's brother R. S is the husband of Q and T is the son of S. How is P related to T?
Ans	✔ 1. Mother's sister
	✗ 2. Mother's mother
	✗ 3. Mother
	✗ 4. Sister

Q.16	Select the term from among the given options that can replace the question mark (?) in the following series. OJH 20, MHF 25, KFD 35, IDB 55, GBZ 95, ?
Ans	✔ 1. EZX 175
	✗ 2. EXO 175
	✗ 3. YXS 175
	✗ 4. EXS 175

Q.17	A man sold an article for ₹346 by first giving a d% discount on its marked price, and then another discount having the same nominal value (in ₹). If the marked price of the article is ₹1730, then what is the value of d?
Ans	✗ 1. 44
	✗ 2. 43
	✔ 3. 40
	✗ 4. 38

Q.18	Where is the Taj Mahotsav held?
Ans	✔ 1. Near the Eastern gate of Taj Mahal
	✗ 2. In Fatehpur Sikri
	✗ 3. In Agra Fort
	✗ 4. Near the Western gate of Taj Mahal

Q.19	Chaitanya Mahaprabhu was related to which of the following religious sects?
Ans	✗ 1. Kapalika
	✔ 2. Vaishnava
	✗ 3. Shaiva
	✗ 4. Tantra

Q.20	Select the option in which the triads share the same relationship as that shared by the given triads. LIFE - IFEL - FELI CALM - ALMC - LMCA	
Ans	✅ 1. MUGS - UGSM - GSMU	
	❌ 2. LAST - TLAS - STLA	
	❌ 3. FLIP - LIFP - FPLI	
	❌ 4. HUNT - HTUN - HNTU	

Q.21	Find the value of $K^2 - 3K$, for which the number 58K764 is divisible by 11.	
Ans	✅ 1. 40	
	❌ 2. 60	
	❌ 3. 52	
	❌ 4. 48	

Q.22	An electric pole casts a shadow of length 42 m at a time when a tree 12 m high casts a shadow of length 16 m. Find the height of the pole.	
Ans	✅ 1. 31.5 m	
	❌ 2. 30.5 m	
	❌ 3. 29 m	
	❌ 4. 33 m	

Q.23	Which of the following is a viral infection that can be transmitted through sexual contact?	
Ans	❌ 1. Tuberculosis	
	❌ 2. Gonorrhoea	
	✅ 3. HIV-AIDS	
	❌ 4. Syphilis	

Q.24	$(1 + \sin A)(1 - \sin A)(1 + \tan^2 A)$ is equal to:	
Ans	❌ 1. cosA	
	❌ 2. 0	
	✅ 3. 1	
	❌ 4. tanA	

Q.25	B, C, D, F and H have different marks. Only one person has scored between C and D. Only one person has scored between H and D. F has scored less than C and D. How many people have scored less than B?	
Ans	❌ 1. Two	
	✅ 2. Three	
	❌ 3. One	
	❌ 4. Four	

Q.26	Seven boxes, D, E, F, R, S, T and U, are kept one over the other but not necessarily in the same order. U is kept immediately above T. E is kept immediately above D. Only F is kept above S. Only two boxes are kept above U. E is not kept at third position from the bottom. How many boxes are kept between R and F?	
Ans	❌ 1. Four	
	❌ 2. Two	
	❌ 3. One	
	✅ 4. Three	

Q.27	A question is followed by two statements numbered (I) and (II). You have to decide whether the data provided in the statements are sufficient to answer the question. Read both the statements and select the most appropriate answer.
	Question: Five friends, S, T, U, V and W, are of different ages. Who is the second eldest among them?
	Statements: (I) W is younger than T. W is elder than U. (II) T is the eldest. Only one person is younger than V.
Ans	✗ 1. Data in statements I and II together are not sufficient to answer the question.
	✗ 2. Data in statements I and II together are sufficient to answer the question.
	✗ 3. Data in statement I alone is sufficient to answer the question while data in statement II is not.
	✓ 4. Data in statement II alone is sufficient to answer the question while data in statement I is not.

Q.28	Match the following rivers with their tributaries.

Rivers	Tributaries
1. Brahmaputra	a. Betwa
2. Indus	b. Chenab
3. Yamuna	c. Dibang

Ans	✗ 1. 1-a, 2-b, 3-c
	✗ 2. 1-c, 2-a, 3-b
	✗ 3. 1-b, 2-c, 3-a
	✓ 4. 1-c, 2-b, 3-a

Q.29	What is the relationship between current (I), power (P), and voltage (V)?
Ans	✗ 1. I = P2V
	✗ 2. I = PV
	✗ 3. I = V ÷ P
	✓ 4. I = P ÷ V

Q.30	Which of the following articles deal with the provisions regarding the election, qualification, and removal of the Vice-President of India?
Ans	✗ 1. Article 78 - 80
	✓ 2. Article 63 - 71
	✗ 3. Article 68 - 75
	✗ 4. Article 224 - 245

Q.31	In a certain code language,'soldier protect country' is coded as 'lu mh na','entrepreneur prosper country' is coded as 'na ki tu' and'soldier entrepreneur vital' is coded as 'mh tu sy'.What is the possible code for 'country vital' in that language?
Ans	✓ 1. na sy
	✗ 2. mh na
	✗ 3. sy ki
	✗ 4. tu na

Q.32	A conical tent has to accommodate 30 persons. Each person must have $5\ m^2$ spaces on the ground and $120\ m^3$ of air to breathe. Find the height (in m) of the tent.
Ans	✗ 1. 64
	✗ 2. 60
	✗ 3. 84
	✓ 4. 72

Q.33	A number when increased by 50 %', gives 2820. The number is:
Ans	❌ 1. 3760
	❌ 2. 940
	✅ 3. 1880
	❌ 4. 5640

Q.34	What is the process by which sodium hydroxide is prepared?
Ans	❌ 1. Solvay's process
	✅ 2. Chlor-alkali process
	❌ 3. Haber's process
	❌ 4. Contact process

Q.35	In a series combination of resistors, how is the voltage distributed across each resistor?
Ans	❌ 1. The same across all resistors
	❌ 2. Unaffected by resistance values
	❌ 3. Inversely proportional to resistance
	✅ 4. Directly proportional to resistance

Q.36	The length of each of the two equal sides of an isosceles triangle is 100 cm each and the length of its base is 56 cm. The area (in cm^2) of the triangle is:
Ans	❌ 1. 2690
	✅ 2. 2688
	❌ 3. 2675
	❌ 4. 2672

Q.37	Which of the following reactions represents the combustion of methane?
Ans	✅ 1. $CH_4 + O_2 \rightarrow CO_2 + 2H_2O$
	❌ 2. $CH_4 + H_2O \rightarrow CO + H_2$
	❌ 3. $CH_4 + Cl_2 \rightarrow CH_3Cl + HCl$
	❌ 4. $CH_4 + O_2 \rightarrow CO + H_2O$

Q.38	What is the average of all the natural numbers from 1 to 92?
Ans	❌ 1. 47
	❌ 2. 46
	✅ 3. 46.5
	❌ 4. 47.5

Q.39	Hritik ranked 20th from the bottom and 30th from the top in his class. How many students are there in his class?
Ans	❌ 1. 45
	❌ 2. 34
	❌ 3. 47
	✅ 4. 49

Q.40	Which of the following is a method of reproduction in plants, where only a single parent is involved?
Ans	❌ 1. Pollination
	✅ 2. Asexual reproduction
	❌ 3. Fertilisation
	❌ 4. Sexual reproduction

Q.41	What determines the sex of a child in humans?
Ans	✗ 1. Environmental cues
	✗ 2. The temperature at which fertilised eggs are placed
	✗ 3. The fate of the embryo
	✔ 4. Genetic constitution

Q.42	Find the simple interest (in closest integral ₹) on ₹4000 at 5.25% per annum rate of interest for the period from 12 February 2024 to 13 April 2024
Ans	✗ 1. 36
	✔ 2. 35
	✗ 3. 34
	✗ 4. 33

Q.43	Every year, Foreign Trade Policy has been declared by which ministry of the Government of India?
Ans	✔ 1. Ministry of Commerce and Industry
	✗ 2. Ministry of External Affairs
	✗ 3. Ministry of Information
	✗ 4. Ministry of Home Affairs

Q.44	Who among the following is India's first civilian space tourist?
Ans	✗ 1. Prasanth Balakrishnan Nair
	✗ 2. Shubhanshu Shukla
	✗ 3. Ajit Krishnan
	✔ 4. Gopichand Thotakura

Q.45	Which of the following is an effective method to reduce plastic waste?
Ans	✗ 1. Burning plastic waste
	✗ 2. Using disposable plastic bags
	✔ 3. Recycling and reusing plastic materials
	✗ 4. Dumping plastic waste in landfills

Q.46	Which of the following is a natural ecosystem?
Ans	✗ 1. Crop field
	✗ 2. Aquarium
	✗ 3. Garden
	✔ 4. Forest

Q.47	In a certain code language, 'house fire gas' is coded as 'dy ph mt', 'pressure gas station' is coded as 'lp ph st', 'station house farm' is coded as 'st bq dy'. What is the code for 'gas' in that language? (Note: All the codes are two-letter coded only.)
Ans	✗ 1. st
	✗ 2. lp
	✗ 3. mt
	✔ 4. ph

Q.48	What is the average of all the natural numbers from 1 to 91?
Ans	✗ 1. 46.5
	✔ 2. 46
	✗ 3. 45.5
	✗ 4. 47

Q.49	What property of carbon allows it to form long chains and rings?
Ans	✗ 1. Ability to form covalent bonds
	✗ 2. Ability to form stable bonds with other elements
	✔ 3. Ability to form multiple bonds
	✗ 4. Tendency to form single bonds

Q.50	Based on the English alphabetical order, three of the following four are alike in a certain way and thus form a group. Which is the one that DOES NOT belong to that group? (Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)
Ans	✔ 1. FHD
	✗ 2. VST
	✗ 3. ZWX
	✗ 4. NKL

Q.51	Akshat completes his journey in 20 hours. He covers half the distance at 57 km/h and the rest at 95 km/h. What is the length of the journey (in Km)?
Ans	✗ 1. 1435
	✗ 2. 1423
	✗ 3. 1416
	✔ 4. 1425

Q.52	Which of the following statements accurately describes the role of moral suasion in controlling money?
Ans	✔ 1. It is a combination of persuasion and pressure used by the RBI to influence banks' lending behaviour.
	✗ 2. It is a direct tool used by the RBI to control the money supply by setting interest rates.
	✗ 3. It refers to the variation in the statutory liquidity ratio to regulate the allocation of bank credit.
	✗ 4. It involves the sale and purchase of government securities to influence the money supply.

Q.53	Kamal starts from Point A and drives 17 km towards south. He then takes a left turn, drives 13 km, turns left and drives 21 km. He then takes a left turn and drives 18 km. He takes a final left turn, drives 4 km and stops at Point P. How far (shortest distance) and towards which direction should he drive in order to reach Point A again? (All turns are 90° turns only unless specified.)
Ans	✗ 1. 3 km to the east
	✔ 2. 5 km to the east
	✗ 3. 4 km to the east
	✗ 4. 6 km to the east

Q.54	The dark blue colour in the pH scale refers to _____.
Ans	✗ 1. strong acidic solution
	✔ 2. weak basic solution
	✗ 3. neutral solution
	✗ 4. strong basic solution

Q.55	What is the pH range of a strongly acidic solution?	
Ans	✗ 1. 7-8	
	✓ 2. 0-3	
	✗ 3. 12-14	
	✗ 4. 10-11	

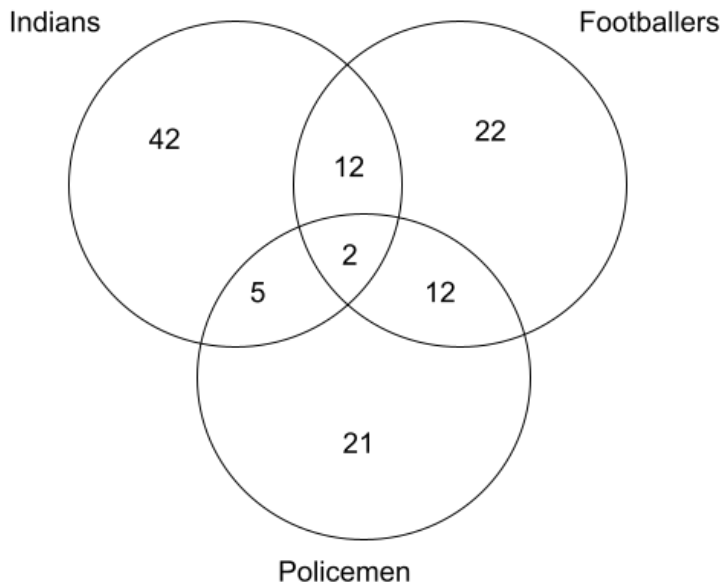| Q.56	Which of the following is the product of the neutralisation of hydrochloric acid (HCl) with sodium hydroxide (NaOH)?	
Ans	✗ 1. Sodium hydroxide and hydrochloric acid	
	✓ 2. Sodium chloride and water	
	✗ 3. Sodium chloride and hydrogen gas	
	✗ 4. Sodium hydroxide and water	

Q.57	Which of the following released the fourth edition of SDG India Index 2023-24?	
Ans	✓ 1. National Institute for Transforming India	
	✗ 2. National Commission for Women	
	✗ 3. National Commission of Backward Classes	
	✗ 4. National Crime Record Bureau	

Q.58	If 'A' stands for '÷', 'B' stands for '×', 'C' stands for '+' and 'D' stands for '−', what will come in place of the question mark (?) in the following equation? 93 D 7 B 5 C (69 A 3) C 26 = ?	
Ans	✗ 1. 75	
	✗ 2. 122	
	✗ 3. 93	
	✓ 4. 107	

Q.59	Washing soda ($Na_2CO_3 \cdot 10H_2O$) is obtained from which compound in the Solvay process?	
Ans	✗ 1. Sodium chloride	
	✗ 2. Sodium hydroxide	
	✓ 3. Sodium bicarbonate	
	✗ 4. Sodium sulphate	

Q.60	Study the given diagram carefully and answer the question that follows. The numbers in different sections indicate the number of persons.	

How many such policemen exist that are also Indians and footballers?

Ans	✖ 1. 5	
	✔ 2. 2	
	✖ 3. 12	
	✖ 4. 3	

Q.61	Two taps can fill a cistern in 2 hours and 54 hours respectively. A third tap can empty it in 54 hours. How long (in hours) will it take to fill the empty cistern, if all of them are opened together?	
Ans	✖ 1. 3	
	✖ 2. 5	
	✔ 3. 2	
	✖ 4. 4	

Q.62	In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Select the set in which the numbers are related in the same way as are the numbers of the following sets. (NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding / subtracting /multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.) 37.4, 34.6 45, 42.2	
Ans	✖ 1. 32.9, 29.1	
	✔ 2. 69, 66.2	
	✖ 3. 21.5, 17.7	
	✖ 4. 58, 56.2	

Q.63	What is the primary purpose of an electric fuse in a household circuit?	
Ans	✖ 1. To reduce resistance in the circuit	
	✖ 2. To increase current flow	
	✖ 3. To regulate voltage supply	
	✔ 4. To prevent overloading and short circuits	

Q.64	A shopkeeper lists the price of a fan at 20% above its cost price and offers a 10% discount on its list price. If he earns a profit of ₹150, then what is the list price (in ₹) of the fan?
Ans	✘ 1. 2054
	✘ 2. 1969
	✔ 3. 2250
	✘ 4. 2172

Q.65	What are regenerative cells used by Hydra for?
Ans	✘ 1. Hydra uses regenerative cells for reproduction by sexual reproduction.
	✘ 2. Hydra uses regenerative cells for reproduction by spore formation.
	✘ 3. Hydra uses regenerative cells for reproduction by fragmentation.
	✔ 4. Hydra uses regenerative cells for reproduction by budding.

Q.66	The commutator in an electric motor is used to:
Ans	✘ 1. change the direction of the magnetic field
	✘ 2. maintain the magnetic field in the circuit
	✘ 3. maintain the potential difference in the circuit
	✔ 4. reverse the direction of current flowing through the coil

Q.67	What is the power rating of a device that draws 1.75 A of current when connected to a 180-V source?
Ans	✘ 1. 105 W
	✔ 2. 315 W
	✘ 3. 225 W
	✘ 4. 440 W

Q.68	The marks scored by 10 students are given below. 17, 16, 12, 16, 15, 16, 13, 14, 13, 20 The mode of the data is:
Ans	✔ 1. 16
	✘ 2. 18
	✘ 3. 12
	✘ 4. 17

Q.69	There are total 120 students in three sections A, B and C of Class 10. The average marks of the three sections is 85. The average marks of section B and C is 88 and the average marks of section A is 78. Find the number of students in section A.
Ans	✔ 1. 36
	✘ 2. 28
	✘ 3. 33
	✘ 4. 24

Q.70	The cost of a washing machine is 75% less than the cost of a TV. If the cost of the washing machine increases by 77% and that of the TV decreases by 27%, then what is the change in the total cost of 8 washing machines and 2 TVs?
Ans	✘ 1. Increase by 31%
	✔ 2. Increase by 25%
	✘ 3. Decrease by 22%
	✘ 4. Decrease by 29%

Q.71	Who is the author of 'The Great Indian Novel,' published in 2011?
Ans	✔ 1. Shashi Tharoor
	✘ 2. Kiran Nagarkar
	✘ 3. Arundhati Roy
	✘ 4. Vikram Seth

Q.72	Refer to the following number and symbol series and answer the question that follows. (Counting to be done from left to right only.) (Left) @ 2 # 2 4 3 = % 8 * 1 8 @ $ 4 ! 6 4 3 * 8 = (Right) How many such numbers are there, each of which is immediately preceded by and also immediately followed by a symbol?
Ans	✘ 1. Three
	✘ 2. One
	✔ 3. Four
	✘ 4. Five

Q.73	Which of the following committees suggested that the 'duty to pay taxes' should also be a Fundamental Duty of the Indian citizen?
Ans	✘ 1. Santhanam Committee
	✔ 2. Swaran Singh Committee
	✘ 3. Justice JS Verma Committee
	✘ 4. Sarkaria Commission

Q.74	Which of the following rules is used to determine the direction of the force on a current-carrying conductor in an electric motor?
Ans	✘ 1. Fleming's Right-Hand Rule
	✘ 2. Ampere's Law
	✘ 3. Right-Hand Thumb Rule
	✔ 4. Fleming's Left-Hand Rule

Q.75	A shopkeeper bought an article for ₹740. At what price (in ₹) should he sell the article to make 20% profit?
Ans	✘ 1. 876
	✘ 2. 900
	✘ 3. 592
	✔ 4. 888

Q.76	Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster DOES NOT belong to that group? (Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)
Ans	✘ 1. CFLP
	✔ 2. RUAF
	✘ 3. TWCG
	✘ 4. HKQU

Q.77	Which of the following countries hosted the first business summit of the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) in 2024?
Ans	✘ 1. Kathmandu, Nepal
	✘ 2. Thimphu, Bhutan
	✘ 3. Dhaka, Bangladesh
	✔ 4. New Delhi, India

Q.78	Six students are sitting around a circular table facing the centre. L is an immediate neighbour of both J and H. I is sitting second to the left of J. K is sitting third to the right of H. G is an immediate neighbour of both I and H. The position of how many persons will remain unchanged if all persons are arranged in English alphabetical order in clockwise direction, starting from G (including G)?	
Ans	✗ 1. One	
	✗ 2. Two	
	✗ 3. Three	
	✔ 4. Four	

Q.79	Write the expanded form of $(8a + 3b + 9c)^2$.	
Ans	✔ 1. $64a^2 + 9b^2 + 81c^2 + 48ab + 54bc + 144ac$	
	✗ 2. $64a^2 + 9b^2 + 81c^2 + 52ab + 54bc + 144ac$	
	✗ 3. $64a^2 + 9b^2 + 81c^2 + 48ab + 54bc + 154ac$	
	✗ 4. $64a^2 + 9b^2 + 81c^2 + 48ab + 49bc + 144ac$	

Q.80	Radhika travels a distance of 230 km with speed of 46 km/h and 400 km with 100 km/h by her car. Find the average speed (in km/h) of Radhika.	
Ans	✔ 1. 70	
	✗ 2. 75	
	✗ 3. 72	
	✗ 4. 80	

Q.81	Why is bleaching powder used for disinfecting drinking water?	
Ans	✗ 1. It reduces the hardness of water.	
	✗ 2. It neutralises the water.	
	✗ 3. It provides an acidic medium.	
	✔ 4. It releases chlorine, which kills germs.	

Q.82	Write the expanded form of $(4a + 9b + 5c)^2$.	
Ans	✗ 1. $16a^2 + 81b^2 + 25c^2 + 76ab + 90bc + 40ac$	
	✔ 2. $16a^2 + 81b^2 + 25c^2 + 72ab + 90bc + 40ac$	
	✗ 3. $16a^2 + 81b^2 + 25c^2 + 72ab + 90bc + 50ac$	
	✗ 4. $16a^2 + 81b^2 + 25c^2 + 72ab + 85bc + 40ac$	

Q.83	The first session of Indian National Congress took place at which of the following places?	
Ans	✔ 1. Bombay	
	✗ 2. Lahore	
	✗ 3. Calcutta	
	✗ 4. Allahabad	

Q.84	The power in a circuit having voltage V and current I during time interval t is:	
Ans	✗ 1. V/I	
	✔ 2. I × V	
	✗ 3. (I × t)/V	
	✗ 4. I/V	

Q.85	Two sets of numbers are given below. In each set of numbers, certain mathematical operation(s) on the first number result(s) in the second number. Similarly, certain mathematical operation(s) on the second number result(s) in the third number and so on. Which of the given options follows the same set of operations as in the given sets? (NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into their constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.) 16 – 17 – 21 – 30; 13 – 14 – 18 – 27
Ans	✘ 1. 24 – 25 – 29 – 42
	✘ 2. 15 – 16 – 20 – 26
	✘ 3. 11 – 12 – 16 – 18
	✔ 4. 22 – 23 – 27 – 36

Q.86	The area of a square plot is 289 m^2. The length of each side of the plot (in m) is:
Ans	✘ 1. 27
	✘ 2. 11
	✔ 3. 17
	✘ 4. 7

Q.87	Which of the following letter-clusters should replace # and % so that the pattern and relationship followed between the letter-cluster pair on the left side of :: is the same as that on the right side of ::? # : OKR :: XTA : %
Ans	✘ 1. # = KGN, % = BXP
	✔ 2. # = KGN, % = BXE
	✘ 3. # = KGN, % = FXE
	✘ 4. # = KLN, % = BXE

Q.88	Who among the following secured a gold medal for India at the Paris Paralympics 2024?
Ans	✘ 1. Nishad Kumar
	✘ 2. Preethi Pal
	✘ 3. Mona Agarwal
	✔ 4. Avani Lekhara

Q.89	In a parallel circuit, how does the voltage across each resistor compare to the total voltage supplied by the battery?
Ans	✔ 1. It is the same for each resistor.
	✘ 2. It is inversely proportional to the resistance.
	✘ 3. It is zero.
	✘ 4. It is divided according to the resistance values.

Q.90	As of 30 September 2024, how many Jan Aushadhi Kendras have been established by the Government of India across the country?
Ans	✔ 1. 13,822
	✘ 2. 14,822
	✘ 3. 12,822
	✘ 4. 11,822

Q.91	If third proportional of 12 and 24 be x, then what is the value of x?
Ans	✖ 1. 45
	✖ 2. 49
	✖ 3. 50
	✔ 4. 48

Q.92	An emf is induced whenever there is a change in the magnetic field linked with electric circuits. This is stated by the:
Ans	✖ 1. Ohm's law
	✖ 2. Gravitation law
	✖ 3. Newton's law
	✔ 4. Faraday's law

Q.93	Which of the following reactions does NOT represent a neutralisation reaction?
Ans	✖ 1. $H_2SO_4 + Ca(OH)_2 \rightarrow CaSO_4 + 2H_2O$
	✖ 2. $CH_3COOH + NaOH \rightarrow CH_3COONa + H_2O$
	✖ 3. $HCl + NaOH \rightarrow NaCl + H_2O$
	✔ 4. $Na_2CO_3 + HCl \rightarrow NaCl + CO_2 + H_2O$

Q.94	Two pieces of cloth measure 96 metres and 144 metres in length. What is the maximum length of cloth that can be cut equally from both pieces without any remainder?
Ans	✖ 1. 96 metres
	✖ 2. 24 metres
	✖ 3. 12 metres
	✔ 4. 48 metres

Q.95	Refer to the given number, symbol series and answer the question that follows. Counting to be done from left to right only. (Left) $ 7 @ 6 = & 5 Ω 4 > # 8 & % 9 1 * £ 3 (Right) How many such symbols are there each of which is immediately preceded by a number and also immediately followed by another number?
Ans	✖ 1. Three
	✖ 2. Four
	✖ 3. One
	✔ 4. Two

Q.96	If in a code language, If 'A' stands for '÷', 'B' stands for '×', 'C' stands for '+' and 'D' stands for '−', then the resultant of which of the following would be 55?
Ans	✖ 1. 16 D 112 A 63 C 77 B 31
	✔ 2. 16 A 112 B 63 C 77 D 31
	✖ 3. 16 B 112 C 63 A 77 D 31
	✖ 4. 16 C 112 D 63 A 77 B 31

Q.97	What should come in place of the question mark (?) in the given series? 17 22 37 62 97 ?
Ans	✖ 1. 137
	✖ 2. 140
	✔ 3. 142
	✖ 4. 148

Q.98	If a child inherits an Y chromosome from the father, what will be the sex of the child?
Ans	❌ 1. Female
	✅ 2. Male
	❌ 3. Hermaphrodite
	❌ 4. Cannot be determined

Q.99	Komal invested a sum of ₹5000 at 20% per annum compound interest, componded annually. If she received an amount of ₹8640 after n years, the value of n is:
Ans	❌ 1. 3.5
	❌ 2. 4
	✅ 3. 3
	❌ 4. 2.5

Q.100	50 men can do a piece of work in 12 days. The number of men required to complete the same work in 50 days is:
Ans	✅ 1. 12
	❌ 2. 11
	❌ 3. 19
	❌ 4. 15

2024/12/20-10:38:56

Test Date	16/12/2024
Test Time	12:45 PM - 2:15 PM
Subject	RRB JE DMS CMA CS MS

* Note
Correct Answer will carry 1 mark per Question.
Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.
2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : **RRB JE, DMS, CMA, CS, MS CBT-1**

Q.1	Pratap starts from Point A and drives 16 km towards south. He then takes a right turn, drives 13 km, turns right and drives 18 km. He then takes a right turn and drives 18 km. He takes a final right turn, drives 2 km and stops at Point P. How far (shortest distance) and towards which direction should he drive in order to reach Point A again? (All turns are 90° turns only unless specified.)
Ans	✘ 1. 7 km to the west
	✔ 2. 5 km to the west
	✘ 3. 3 km to the west
	✘ 4. 6 km to the west

Q.2	If the radius of a hemisphere is increased by 50%, then find the percentage increase in the volume. (Take $\pi = \frac{22}{7}$)
Ans	✘ 1. 112.5%
	✘ 2. 150%
	✔ 3. 125%
	✘ 4. 137.5%

Q.3	Sangeeta and Hemlata invest in a business in the ratio 1 : 3. If total profit is Rs. 2568, then what is difference between the profit (in Rs.) of Sangeeta and Hemlata?
Ans	✘ 1. 1384
	✔ 2. 1284
	✘ 3. 1184
	✘ 4. 1334

Q.4	The length of each of the two equal sides of an isosceles triangle is 89 cm each and the length of its base is 78 cm. The area (in cm^2) of the triangle is:
Ans	✔ 1. 3120
	✘ 2. 3134
	✘ 3. 3102
	✘ 4. 3139

Q.5	Select the option in which the numbers share the same relationship as that shared by the given pairs of numbers. (NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.) 18, 111 13, 81	
Ans	✅ 1. 15, 93	
	❌ 2. 19, 114	
	❌ 3. 12, 69	
	❌ 4. 17, 104	

Q.6	A conductor has a current of 150 mA flowing through it with a resistance of 0.8 Ω. Find the potential difference across the conductor.	
Ans	❌ 1. 5.3 V	
	❌ 2. 120 V	
	❌ 3. 18.75 V	
	✅ 4. 0.12 V	

Q.7	The potential difference, V, across the ends of a given metallic wire in an electric circuit is directly proportional to the current flowing through it, provided its temperature remains the same. This is known as:	
Ans	✅ 1. Ohm's law	
	❌ 2. Resistance law	
	❌ 3. Newton's law	
	❌ 4. Ampere's law	

Q.8	If the interest earned during the 2nd year on a certain sum is ₹9911, and the rate of interest is 10% per annum compounded annually, then the sum is:	
Ans	✅ 1. ₹90100	
	❌ 2. ₹90080	
	❌ 3. ₹90055	
	❌ 4. ₹90115	

Q.9	What was the venue of the 23rd meeting of the Shanghai Cooperation Organisation (SCO) in 2024?	
Ans	❌ 1. New Delhi, India	
	❌ 2. Sanghai, China	
	✅ 3. Islamabad, Pakistan	
	❌ 4. Dhaka, Bangladesh	

Q.10	By selling an article at $\frac{2}{5}$ of its actual selling price, Manav incurs a loss of 27%. If he sells it at 84% of its actual selling price, then the profit percentage is:	
Ans	❌ 1. 56.9%	
	❌ 2. 52.6%	
	❌ 3. 55.5%	
	✅ 4. 53.3%	

Q.11	Aman completes his journey in 14 hours. He covers half the distance at 39 km/h and the rest at 45 km/h. What is the length of the journey (in Km)?	
Ans	❌ 1. 592	
	❌ 2. 591	
	❌ 3. 594	
	✅ 4. 585	

Q.12	Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster DOES NOT belong to that group? (Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)
Ans	✗ 1. CJSX
	✓ 2. JQZF
	✗ 3. BIRW
	✗ 4. UBKP

Q.13	A number when increased by 50 %', gives 3030. The number is:
Ans	✗ 1. 1010
	✗ 2. 6060
	✓ 3. 2020
	✗ 4. 4040

Q.14	What is formed when ammonium dichromate is heated?
Ans	✓ 1. Nitrogen, oxygen and chromium oxide
	✗ 2. Chromium oxide and water
	✗ 3. Chromium and oxygen
	✗ 4. Chromium oxide and nitrogen

Q.15	A wire has a resistance of R. If its length is increased by a factor of 8 and its cross-sectional area is decreased by a factor of 4, what is its new resistance (R')?
Ans	✗ 1. R' = 8 R
	✗ 2. R' = 16 R
	✓ 3. R' = 32 R
	✗ 4. R' = 2 R

Q.16	A question is given, followed by two statements labelled I and II. Identify which of the statements is/are sufficient to answer the question. A, B, C, D and E are sitting in a straight line facing north. Who sits on the extreme left end? (I) Exactly 2 people sit between A and E. (II) Exactly 2 people sit between B and C.
Ans	✗ 1. Data in Statement II alone is sufficient to answer the question, while data in Statement I alone is not.
	✓ 2. Both Statements I and II put together are not sufficient to answer the question.
	✗ 3. Both Statements I and II put together (and not independently) are sufficient to answer the question.
	✗ 4. Data in Statement I alone is sufficient to answer the question, while data in Statement II alone is not.

Q.17	The average marks of a student in six subjects is 94. After re-evaluation in three subjects the marks were changed to 89 from 75, 90 from 82 and 88 from 80. In the remaining subjects, the marks remained unchanged. Find the new average marks.
Ans	✓ 1. 99
	✗ 2. 95
	✗ 3. 98
	✗ 4. 97

Q.18	A, B, C, D, E and F live on six different floors of the same building. The lowermost floor in the building is numbered 1, the floor above it, number 2 and so on till the topmost floor is numbered 6. E lives on an even numbered floor but not 6. The sum of floors on which A and E live is 7. F lives immediately above B. The sum of floors on which E and D live is 3. How many people live between A and D?
Ans	✗ 1. 1
	✗ 2. 2
	✔ 3. 3
	✗ 4. 4

Q.19	Thermocol disposables are being widely used in parties and restaurants. By promoting this practice _____.
Ans	✗ 1. we are reducing expenses; disposables are cheap to use
	✔ 2. we are increasing non-biodegradable waste
	✗ 3. we are increasing the hygiene concern in us
	✗ 4. we are making the waste biodegradable

Q.20	If the mean of the following data is 37, then the value of X is:

xi	20	30	40	85
fi	19	X	13	24

Ans	✔ 1. 124
	✗ 2. 125
	✗ 3. 107
	✗ 4. 106

Q.21	The Khilafat committee was formed in Bombay, to defend temporal powers of Khalifa, in _____.
Ans	✗ 1. June 1919
	✗ 2. July 1919
	✔ 3. March 1919
	✗ 4. January 1919

Q.22	What is the name of the Lunar Polar Exploration Mission, a collaboration with Japan's JAXA which was approved by India's National Space Commission in October 2024?
Ans	✔ 1. Lupex
	✗ 2. SpaceX
	✗ 3. Moonet
	✗ 4. Mopex

Q.23	Select the letter-cluster from among the given options that can replace the question mark (?) in the following series. OHA MFY KDW IBU ?
Ans	✗ 1. SGZ
	✔ 2. GZS
	✗ 3. SZG
	✗ 4. GSZ

Q.24	Write the expanded form of $(5a + 7b + 3c)^2$.
Ans	✘ 1. $25a^2 + 49b^2 + 9c^2 + 70ab + 37bc + 30ac$
	✔ 2. $25a^2 + 49b^2 + 9c^2 + 70ab + 42bc + 30ac$
	✘ 3. $25a^2 + 49b^2 + 9c^2 + 74ab + 42bc + 30ac$
	✘ 4. $25a^2 + 49b^2 + 9c^2 + 70ab + 42bc + 40ac$

Q.25	Select the letter-cluster pair that best represents a similar relationship to the one expressed in the pairs of letter-clusters given below. OQP : PTO VWV : WZU
Ans	✘ 1. QEK : RHI
	✔ 2. HFN : IIM
	✘ 3. KND : LQF
	✘ 4. NEO : OHL

Q.26	Who is the author of 'Fiction as History: The Novel and the City in Modern North India,' published in 2019?
Ans	✔ 1. Vasudha Dalmia
	✘ 2. Arundhati Roy
	✘ 3. Salman Rushdie
	✘ 4. Jhumpa Lahiri

Q.27	Select the letter-cluster pair that best represents a similar relationship to the one expressed in the pairs of letter-clusters given below. NGJ : OJE MHK : NKF
Ans	✘ 1. XHJ : YKF
	✘ 2. LMO : MOJ
	✘ 3. JJK : KME
	✔ 4. KNI : LQD

Q.28	Manyakheta was the capital of which of following dynasties during the eighth century AD?
Ans	✘ 1. Pratiharas
	✔ 2. Rashtrakuta
	✘ 3. Chera
	✘ 4. Pala

Q.29	Refer to the given number, symbol series and answer the question that follows. Counting to be done from left to right only. (Left) 7 5 ^ 5 + % 5 6 $ 2 3 * 6 + 3 & 4 ? $ # 6 1 2 3 & 6 3 % @ (Right) How many such symbols are there each of which is immediately preceded by a number and immediately followed by another symbol?
Ans	✘ 1. 1
	✘ 2. 4
	✘ 3. 2
	✔ 4. 3

Q.30	A shopkeeper bought an article for ₹760. At what price (in ₹) should he sell the article to make 30% profit?
Ans	✗ 1. 976
	✔ 2. 988
	✗ 3. 1000
	✗ 4. 532

Q.31	Which of the following Constitution Amendments empowers Parliament to establish common High court for two or more than two States?
Ans	✗ 1. 9th Constitutional Amendment Act
	✔ 2. 7th Constitutional Amendment Act
	✗ 3. 6th Constitutional Amendment Act
	✗ 4. 8th Constitutional Amendment Act

Q.32	An electric motor converts electrical energy into:
Ans	✗ 1. electron energy
	✗ 2. magnetic energy
	✗ 3. nuclear energy
	✔ 4. mechanical energy

Q.33	Two numbers are in the ratio 7 : 5. If the first number is increased by 14 and the second number is decreased by 5, then the ratio becomes 4 : 2. What is the sum of the original two numbers?
Ans	✔ 1. 96
	✗ 2. 106
	✗ 3. 111
	✗ 4. 115

Q.34	The cost of a washing machine is 40% less than the cost of a TV. If the cost of the washing machine increases by 64% and that of the TV decreases by 20%, then what is the change in the total cost of 5 washing machines and 7 TVs?
Ans	✗ 1. Increase by 13%
	✗ 2. Decrease by 4%
	✔ 3. Increase by 5.2%
	✗ 4. Decrease by 5%

Q.35	$\dfrac{(a^{10} \times b^3 \times c^9)}{(a^9 \times b^6 \times c^9)}$ in simplified form is:
Ans	✗ 1. $(a^{-1}) \times (b^{-3}) \times (c^{-10})$
	✔ 2. $(a^1) \times (b^{-3}) \times (c^0)$
	✗ 3. $(a^1) \times (b^{-9}) \times (c^{-7})$
	✗ 4. $(a^{-1}) \times (b^{-9}) \times (c^{-8})$

Q.36	Garden is an ecosystem because:
Ans	✔ 1. the living organisms in it interact with each other and are affected by abiotic components
	✗ 2. the living organisms in it interact with each other and are not affected by abiotic components
	✗ 3. it has both plants, trees and animals like insects, frogs, birds, etc., as biotic components
	✗ 4. it has only biotic components like plants, trees and flowers

Q.37	A man sold an article for ₹390 by first giving a d% discount on its marked price, and then another discount having the same nominal value (in ₹). If the marked price of the article is ₹3900, then what is the value of d?	
Ans	✅ 1. 45	
	❌ 2. 50	
	❌ 3. 48	
	❌ 4. 41	

Q.38	If 214 apples were distributed among Ajay, Amit, and Amar in the ratio $\frac{1}{5}:\frac{1}{7}:\frac{1}{6}$, how many apples did the Amar get?
Ans	❌ 1. 80
	✅ 2. 70
	❌ 3. 40
	❌ 4. 100

Q.39

Match the Following:

Column A	Column B
1. Marginal Efficiency of Capital	A. Spending on consumer goods
2. Autonomous Investment	B. Tendency for employment to fluctuate
3. Consumption Function	C. Expected rate of return on investment
4. Paradox of Thrift	D. Investment independent of income
5. Cyclical Unemployment	E. Increased saving reduces total demand

Ans	✅ 1. 1 - C, 2 - D, 3 - A, 4 - E, 5 - B
	❌ 2. 1 - E, 2 - D, 3 - A, 4 - C, 5 - B
	❌ 3. 1 - B, 2 - D, 3 - A, 4 - E, 5 - C
	❌ 4. 1 - A, 2 - D, 3 - C, 4 - E, 5 - B

Q.40	What is the primary function of 'viharas' in Buddhist architecture?
Ans	❌ 1. To house relics
	✅ 2. To serve as residential places for Buddhist priests
	❌ 3. To serve as meditation halls
	❌ 4. To hold public gatherings

Q.41	44 men can do a piece of work in 48 days. The number of men required to complete the same work in 8 days is:
Ans	❌ 1. 260
	✅ 2. 264
	❌ 3. 266
	❌ 4. 261

Q.42	What industrial method is most typically used to produce sodium hydroxide (NaOH)?
Ans	❌ 1. Castner-Kellner process
	❌ 2. Haber process
	✅ 3. Electrolysis of brine
	❌ 4. Contact process

Q.43	What is the pH value of pure water at 25°C?	
Ans	✗ 1. 3	
	✓ 2. 7	
	✗ 3. 5	
	✗ 4. 1	

Q.44	PN is a secant intersecting a circle at points M and N such that PN > PM. A tangent PT is drawn to the circle touching it at T. If PM = 32 cm and PT = 40 cm, what is the length (in cm) of the chord MN?	
Ans	✗ 1. 36	
	✗ 2. 50	
	✗ 3. 20	
	✓ 4. 18	

Q.45	Read the given statements and conclusions carefully. Assuming that the information given in the statements is true, even if it appears to be at variance with commonly known facts, decide which of the given conclusion(s) logically follow(s) from the statements. Statements: All ovals are bins. No bin is a car. No bin is a plum. Conclusions: (I): No oval is a car. (II): Some plums are cars.	
Ans	✗ 1. Neither conclusion (I) nor (II) follows.	
	✗ 2. Both conclusions (I) and (II) follow.	
	✗ 3. Only conclusion (II) follows.	
	✓ 4. Only conclusion (I) follows.	

Q.46	In May 2024, the Indian Air Force successfully tested its Arogya Maitri Disaster Management Cube in _____.	
Ans	✗ 1. Mysuru	
	✓ 2. Agra	
	✗ 3. Bhuj	
	✗ 4. Pokhran	

Q.47	What will come in the place of the question mark (?) in the following equation if '÷' and '−' are interchanged and '+' and '×' are interchanged? 10 + 52 − 13 × 4 ÷ 18 = ?	
Ans	✗ 1. 24	
	✓ 2. 26	
	✗ 3. 22	
	✗ 4. 19	

Q.48	The average price of three items of furniture is Rs 16845. If their prices are in the ratio 3:5:7, the price of the cheapest item (in Rs) is	
Ans	✗ 1. 7861	
	✗ 2. 3369	
	✗ 3. 5615	
	✓ 4. 10107	

Q.49	In a certain code language, 'PLOT' is coded as '9137' and 'LIFE' is coded as '4872'. What is the code for 'L' in the given code language?
Ans	✗ 1. 4
	✗ 2. 1
	✓ 3. 7
	✗ 4. 3

Q.50	Which of the following categories are NOT a class of consumers?
Ans	✗ 1. Parasites
	✗ 2. Herbivores
	✗ 3. Carnivores
	✓ 4. Producers

Q.51	If a 1352 m long train crosses a pole in 169 seconds, then find the time (in seconds) taken by the train to cross a 256 m long platform.
Ans	✗ 1. 205
	✗ 2. 193
	✓ 3. 201
	✗ 4. 195

Q.52	Refer to the following number and symbol series and answer the question that follows. Counting to be done from left to right only. (Left) 6 $ < 8 1 ^ 3 * 2 @ 7 # 4 & 5 % @ 9 (Right) If all the symbols are dropped from the series, which of the following will be fifth from right?
Ans	✓ 1. 2
	✗ 2. 7
	✗ 3. 4
	✗ 4. 5

Q.53	If a conductor follows the Ohm's law, then the graph between current and voltage will be a/an _____.
Ans	✗ 1. hyperbola
	✗ 2. parabola
	✓ 3. straight line
	✗ 4. ellipse

Q.54	In which of the following cases did the Supreme Court mention that the Fundamental Right to Primary Education is the Right to Life under Article 21 of the Indian Constitution?
Ans	✗ 1. P Sambamurthy vs Union of India
	✓ 2. Unni Krishnan vs State of Andhra Pradesh
	✗ 3. Navtej Singh Johar vs Union of India
	✗ 4. Shreya Singhal vs Union of India

Q.55	Which ion reduces at the cathode during electrolysis of fresh brine solution?
Ans	✗ 1. Cl^-
	✓ 2. H^+
	✗ 3. OH^-
	✗ 4. Na^+

Q.56	Based on the English alphabetical order, three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which letter-cluster pair DOES NOT belong to that group? (Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)
Ans	✔ 1. NJ – SO
	✖ 2. GB – KF
	✖ 3. MH – QL
	✖ 4. VQ – ZU

Q.57	What should come in place of the question mark (?) in the given series based on the English alphabetical order? VCF PWZ JQT DKN ?
Ans	✖ 1. EHX
	✔ 2. XEH
	✖ 3. XHE
	✖ 4. EXH

Q.58	Rashi wants to make compost for her kitchen garden. She plans to use kitchen wastes. Which set of articles is best suited for her work?
Ans	✔ 1. Peels of fruits, leftover vegetables, paper, torn cotton clothes.
	✖ 2. Peels of fruits, leftover vegetables, paper, packing sheets.
	✖ 3. Peels of fruits, leftover vegetables, plastic waste, thermocol cups.
	✖ 4. Peels of fruits, leftover vegetables, plastic waste, old mobile phone.

Q.59	What should come in place of the question mark (?) in the given series? 180 131 90 57 32 ?
Ans	✖ 1. 22
	✖ 2. 20
	✖ 3. 17
	✔ 4. 15

Q.60	If a resistor of 15 Ω carries a current of 2.5 A for 12 seconds, the heat produced is _____ joules.
Ans	✖ 1. 450
	✖ 2. 1800
	✔ 3. 1125
	✖ 4. 900

Q.61	Mohan went to a cafe and ordered a soft drink. The waiter brought his order in a plastic glass with a plastic straw. Mohan, being environment friendly, is not happy as:
Ans	✖ 1. plastic glass and plastic straw spoils the taste of the drink
	✔ 2. plastic glass and plastic straw is non biodegradable and persists in soil for a long time
	✖ 3. a plastic glass and plastic straw does not add to the standard of the cafe
	✖ 4. the plastic glass and plastic straw were not of his favourite colour

Q.62	Write the expanded form of $(6a + 5b + 8c)^2$.
Ans	✔ 1. $36a^2 + 25b^2 + 64c^2 + 60ab + 80bc + 96ac$
	✖ 2. $36a^2 + 25b^2 + 64c^2 + 60ab + 80bc + 106ac$
	✖ 3. $36a^2 + 25b^2 + 64c^2 + 64ab + 80bc + 96ac$
	✖ 4. $36a^2 + 25b^2 + 64c^2 + 60ab + 75bc + 96ac$

Q.63	L is brother of K. Q is married to N. Z is mother of L. N is daughter of Z. P is wife of K. How is Q related to K?	
Ans	✔ 1. Sister's husband	
	✘ 2. Mother's father	
	✘ 3. Father's brother	
	✘ 4. Brother	

Q.64	What should come in place of the question mark (?) in the given series? 18 49 18 45 18 41 18 ?	
Ans	✘ 1. 31	
	✘ 2. 34	
	✔ 3. 37	
	✘ 4. 29	

Q.65	If 'A' stands for '÷', 'B' stands for '×', 'C' stands for '+' and 'D' stands for '−', then what will be come in place of the question mark (?) in the following equation? 13 D 32 C 36 B 49 A 49 = ?	
Ans	✘ 1. 15	
	✘ 2. 18	
	✘ 3. 19	
	✔ 4. 17	

Q.66	What is the average of all the natural numbers from 1 to 87?	
Ans	✘ 1. 45	
	✘ 2. 44.5	
	✘ 3. 43.5	
	✔ 4. 44	

Q.67	Evaluate 184^2	
Ans	✘ 1. 33866	
	✔ 2. 33856	
	✘ 3. 33836	
	✘ 4. 33806	

Q.68	In a redox reaction, reduction can be described as:	
Ans	✘ 1. loss of electrons	
	✔ 2. addition of hydrogen	
	✘ 3. addition of an electronegative element	
	✘ 4. addition of oxygen	

Q.69	Which metal is placed at the top of the reactivity series?	
Ans	✘ 1. Iron	
	✘ 2. Copper	
	✘ 3. Silver	
	✔ 4. Potassium	

Q.70	In a certain code,'silence gold words' is coded as 'nu mh ke','gold is precious' is coded as 'mh bi py' and'silence is calm' is coded as 'nu py gh'.What is the possible code for 'gold silence' in that language?
Ans	✔ 1. mh nu
	✘ 2. nu ke
	✘ 3. bi ke
	✘ 4. mh bi

Q.71	The Fleming's right hand rule is used to find the:
Ans	✘ 1. direction of the magnetic field associated with a current carrying conductor
	✔ 2. direction of the current of a current carrying conductor
	✘ 3. direction of the motion of the current carrying conductor
	✘ 4. direction of the gravitational field

Q.72	Which of the following teams won the 17th Edition of Indian Premier League?
Ans	✘ 1. Mumbai Indians
	✘ 2. Chennai Superkings
	✘ 3. Delhi Capitals
	✔ 4. Kolkata Knight Riders

Q.73	Why do non-biodegradable wastes cause environmental problems?
Ans	✘ 1. They are toxic to plants only.
	✔ 2. They remain in the environment for a long time.
	✘ 3. They increase soil fertility.
	✘ 4. They can be easily recycled.

Q.74	Select the option in which the numbers share the same relationship as that shared by the given pair of numbers. (NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.) 12, 113 15, 140
Ans	✘ 1. 14, 126
	✘ 2. 8, 67
	✘ 3. 17, 136
	✔ 4. 11, 104

Q.75	L, K, M, N, O and P are sitting around a circular table facing the centre. L sits fourth to the right of O. M sits second to the left of L. N is not the immediate neighbour of M. K sits second to the right of N. How many people are sitting between P and N, when counted from the left of N?
Ans	✘ 1. None
	✔ 2. One
	✘ 3. Two
	✘ 4. Three

Q.76	Which of the following states is also known as the 'Molassis basin', which is made up of soft unconsolidated deposits?
Ans	✗ 1. Assam
	✗ 2. Meghalaya
	✗ 3. Tripura
	✓ 4. Mizoram

Q.77	Among five people named A, B, C, D and E, each has a certain age. D is four times the age of C. A is two times the age of C. D is five times the age of B. The age of B is 12. If E is thrice the age of A, what is the age of E?
Ans	✓ 1. 90
	✗ 2. 94
	✗ 3. 92
	✗ 4. 88

Q.78	Which of the following options represents the correct Lewis structure for methane (CH₄)?
Ans	✓ 1. A carbon atom bonded to four hydrogen atoms with single bonds
	✗ 2. A carbon atom bonded to one hydrogen atom with a double bond
	✗ 3. A carbon atom bonded to two hydrogen atoms with double bonds
	✗ 4. A carbon atom bonded to four hydrogen atoms with triple bonds

Q.79	Which of the following is/are responsible for the depletion of the ozone layer in the atmosphere?
Ans	✓ 1. Chlorofluorocarbons
	✗ 2. Hydrofluorocarbons
	✗ 3. Methane
	✗ 4. Ethane

Q.80	Consider a conductor in the plane of the paper with current going from bottom to the top. What will be the direction of the magnetic field lines to the left of the conductor?
Ans	✗ 1. Opposite to the direction of the current.
	✗ 2. Perpendicular to the plane of the paper and going in.
	✗ 3. In the direction of the current.
	✓ 4. Perpendicular to the plane of the paper and coming out.

Q.81	Why is the depletion of the ozone layer a concern for humans?
Ans	✗ 1. It leads to increased water pollution.
	✓ 2. It protects us from harmful radiation.
	✗ 3. It increases soil fertility.
	✗ 4. It promotes plant growth.

Q.82	Ravi has purchased an aquarium and was surprised to know that regular cleaning of aquariums is essential. Why does it have to be regularly cleaned?
Ans	✗ 1. Dead fish and plants may spoil the electric supply of the aquarium.
	✗ 2. Dead fish and plants are decomposed by microorganisms and smell bad.
	✓ 3. Dead fish and plants should be disposed of in the soil, not in water.
	✗ 4. Dead fish and plants may spoil the aeration system of the aquarium.

Q.83	A and B complete a work in 17 days. If A alone can do it in 34 days then, B alone can do in_____(days).
Ans	✗ 1. 33
	✗ 2. 35
	✔ 3. 34
	✗ 4. 36

Q.84	What impact does human activities have on the environment?
Ans	✗ 1. Only a positive impact
	✗ 2. No impact
	✗ 3. They help in waste disposal
	✔ 4. They contribute to environmental pollution

Q.85	If a wire is stretched to quadruple its length without changing its area, what will happen to its resistivity?
Ans	✗ 1. It halves.
	✗ 2. It quadruples.
	✔ 3. It remains the same.
	✗ 4. It doubles.

Q.86	Which of the following best describes why ionic compounds like potassium bromide (KBr) do NOT conduct electricity in solid form but do in molten form?
Ans	✗ 1. Solid KBr has weak ions that do not conduct electricity.
	✗ 2. In molten form, KBr decomposes into gaseous atoms.
	✔ 3. Ionic bonds prevent ion movement in solid KBr.
	✗ 4. Solid KBr consists of neutral atoms with no free electrons.

Q.87	Find the simple interest (in closest integral ₹) on ₹3000 at 8% per annum rate of interest for the period from 22 February 2024 to 23 April 2024
Ans	✔ 1. 40
	✗ 2. 39
	✗ 3. 41
	✗ 4. 38

Q.88	Evaluate: 16 + 18 ÷ 6 - 2 × 3
Ans	✗ 1. 16
	✔ 2. 13
	✗ 3. 12
	✗ 4. 15

Q.89	Which of the following is the correct definition of a homologous series?
Ans	✗ 1. A series of compounds with the same molecular mass
	✗ 2. A series of compounds having identical physical properties
	✗ 3. A series of compounds having different functional groups
	✔ 4. A series of compounds having the same functional group and similar chemical properties

Q.90	The marks scored by 10 students are given below.
	14, 15, 16, 17, 10, 17, 19, 13, 14, 14
	The mode of the data is:
Ans	✗ 1. 17
	✗ 2. 16
	✗ 3. 15
	✓ 4. 14

Q.91	Which of the following articles deals with the office of the special officer for Linguistic Minorities?
Ans	✗ 1. 351-B
	✓ 2. 350-B
	✗ 3. 351-A
	✗ 4. 350-A

Q.92	Express the value of $35.63 - 47.058 + 10.36 - 24.28 + 5.316 \times 5$ as a vulgar fraction.
Ans	✗ 1. $1\dfrac{21}{47}$
	✓ 2. $1\dfrac{29}{125}$
	✗ 3. $1\dfrac{31}{48}$
	✗ 4. $2\dfrac{13}{58}$

Q.93	Write the expanded form of $(8a + 5b + 9c)^2$.
Ans	✗ 1. $64a^2 + 25b^2 + 81c^2 + 84ab + 90bc + 144ac$
	✗ 2. $64a^2 + 25b^2 + 81c^2 + 80ab + 85bc + 144ac$
	✓ 3. $64a^2 + 25b^2 + 81c^2 + 80ab + 90bc + 144ac$
	✗ 4. $64a^2 + 25b^2 + 81c^2 + 80ab + 90bc + 154ac$

Q.94	Combination reaction can be represented as:
Ans	✗ 1. ABC → AB + C
	✗ 2. AB + CD → AD + CD
	✗ 3. AB + C → CB + A
	✓ 4. AB + C → ABC

Q.95	Find the value of $\dfrac{\cos35^\circ}{\sin55^\circ} - \dfrac{\sin11^\circ}{\cos79^\circ} + \cos28^\circ \csc62^\circ + \cos0^\circ$.
Ans	✗ 1. 1
	✗ 2. −1
	✓ 3. 2
	✗ 4. 0

Q.96	What do the magnetic field lines around a bar magnet represent?
Ans	✗ 1. The movement of electrons around the magnet
	✗ 2. The flow of air around the magnet
	✓ 3. The direction and strength of the magnetic field
	✗ 4. The gravitational field

Q.97	According to the Annual Report 2019-20 of the Ministry of Textiles, India's textile industry contributes what percentage to the industry output, in value terms?	
Ans	✘ 1. 18%	
	✘ 2. 15%	
	✘ 3. 6%	
	✔ 4. 7%	

Q.98	A, B, C, D, E, F and G live on seven different floors of the same building. The lowermost floor on the building is numbered 1, the floor above it, number 2 and so on, till the topmost floor is numbered 7. C lives on the sixth floor. Only three people live between C and F. A lives on an even numbered floor. D lives on one of the floors below B but immediately above F. E lives on one of the floors above C. Who lives on the lowermost floor?	
Ans	✔ 1. G	
	✘ 2. F	
	✘ 3. E	
	✘ 4. B	

Q.99	How many seats did the Bhartiya Janata Party win in the Jammu & Kashmir assembly elections held in 2024?	
Ans	✔ 1. 29	
	✘ 2. 39	
	✘ 3. 19	
	✘ 4. 49	

Q.100	Which of the following letter-clusters should replace # and % so that the pattern and relationship followed between the letter-cluster pair on the left side of :: is the same as that on the right side of ::? # : DHJ :: BFH : %	
Ans	✘ 1. # = KNP, % = VZB	
	✘ 2. # = JNP, % = WZB	
	✘ 3. # = JNP, % = VZO	
	✔ 4. # = JNP, % = VZB	

2024/12/19-20:25:49

Test Date	16/12/2024
Test Time	4:30 PM - 6:00 PM
Subject	RRB JE DMS CMA CS MS

* Note
Correct Answer will carry 1 mark per Question.
Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.
2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : **RRB JE, DMS, CMA, CS, MS CBT-1**

Q.1	**Which of the following is true regarding the bud development process in Hydra?**
Ans	✅ 1. Cell divisions at one site
	❌ 2. Formation of spore
	❌ 3. Splitting of cytoplasm
	❌ 4. Splitting of nucleus

Q.2	**When an atom of sodium reacts with an atom of chlorine to form sodium chloride, each sodium atom:**
Ans	❌ 1. gains one electron
	❌ 2. gains one proton
	✅ 3. loses one electron
	❌ 4. loses one proton

Q.3	**If at same rate of interest, in 2 years, the simple interest is ₹56 and compound interest is ₹72, then what is the principal (in ₹)?**
Ans	❌ 1. 53
	❌ 2. 42
	✅ 3. 49
	❌ 4. 44

Q.4	**If 1 is added to each odd digit and 2 is subtracted from each even digit in the number 4835176, what will be the sum of the digits which are second from the left and second from the right?**
Ans	❌ 1. 10
	❌ 2. 12
	❌ 3. 11
	✅ 4. 14

Q.5	**Which of the following chemical equations is balanced?**
Ans	✅ 1. $2H_2 + O_2 \rightarrow 2H_2O$
	❌ 2. $H_2 + 2O_2 \rightarrow 2H_2O$
	❌ 3. $H_2 + O_2 \rightarrow H_2O$
	❌ 4. $H_2O + O_2 \rightarrow H_2O_2$

Q.6	If x varies inversely as $y^3 - 1$ and is equal to 7 when y = 2, find x when y = 6.
Ans	✔ 1. $\dfrac{49}{215}$
	✘ 2. $\dfrac{49}{216}$
	✘ 3. $\dfrac{50}{216}$
	✘ 4. $\dfrac{51}{215}$

Q.7	A question is followed by two statements numbered (I) and (II). You have to decide whether the data provided in the statements are sufficient to answer the question. Read both the statements and select the most appropriate answer. Question: Five friends, P, Q, R, S and T, are sitting around a circular table facing the centre. Who is sitting second to the left of T? Statements: (I) S sits second to the right of P. T sits to the immediate left of P. (II) Only one person sits between Q and R. P sits to the immediate left of R.
Ans	✔ 1. Data in statement I alone is sufficient to answer the question while data in statement II is not.
	✘ 2. Data in statements I and II together are not sufficient to answer the question.
	✘ 3. Data in statement II alone is sufficient to answer the question while data in statement I is not.
	✘ 4. Data in statements I and II together are sufficient to answer the question.

Q.8	The average age of Mohan and his four friends is 36 years. Mohan is 5 years older than the average age of his four friends. Determine Mohan's age in years.
Ans	✘ 1. 42
	✔ 2. 40
	✘ 3. 44
	✘ 4. 38

Q.9	Two taps can fill a cistern in 2 hours and 47 hours respectively. A third tap can empty it in 47 hours. How long (in hours) will it take to fill the empty cistern, if all of them are opened together?
Ans	✘ 1. 5
	✘ 2. 4
	✘ 3. 3
	✔ 4. 2

Q.10	If 'M' is the smallest perfect square number, which is exactly divisible by 12, 15 and 18, then find the sum of the digits of the quotient obtained, when M is divided by 25.
Ans	✘ 1. 8
	✔ 2. 9
	✘ 3. 7
	✘ 4. 6

Q.11	What is the perimeter of a sector of a circle (in cm) if the radius of the circle is 10.5 cm and the angle subtended at the centre of the circle is 60°? (Use π = $\frac{22}{7}$)
Ans	✔ 1. 32
	✘ 2. 43
	✘ 3. 41
	✘ 4. 37

Q.12	The average price of three items of furniture is Rs 16875. If their prices are in the ratio 3:5:7, the price of the cheapest item (in Rs) is
Ans	✘ 1. 5625
	✘ 2. 3375
	✔ 3. 10125
	✘ 4. 7875

Q.13	When light exits a prism, what is the result of its interaction with the prism surfaces?
Ans	✔ 1. Light is refracted.
	✘ 2. Light passes through without any change.
	✘ 3. Light is only reflected.
	✘ 4. Light is only absorbed.

Q.14	If A's salary is 37 % more than that of B, then how much percent is B's salary less than that of A (correct to 2 decimal places)?
Ans	✘ 1. 29.04%
	✘ 2. 30.86%
	✘ 3. 29.85%
	✔ 4. 27.01%

Q.15	In the reaction $MnO_2 + 4HCl \rightarrow MnCl_2 + 2H_2O + Cl_2$, what is being reduced?
Ans	✘ 1. Hydrogen (H)
	✘ 2. Chlorine (Cl)
	✘ 3. Oxygen (O)
	✔ 4. Manganese (Mn)

Q.16	Who among the following secured a gold medal for India at the Paris Paralympics 2024?
Ans	✘ 1. Sachin Khilari
	✔ 2. Navdeep Singh
	✘ 3. Pranav Soorma
	✘ 4. Hokato Hotozhe Sema

Q.17	Which of the following best describes a combination reaction?
Ans	✘ 1. A compound breaks down into simpler substances
	✘ 2. A reaction where a product releases gas
	✔ 3. Two elements combine to form a compound
	✘ 4. Ions exchange between two compounds

Q.18	If the ratio of four angles of a quadrilateral is $\angle A : \angle B : \angle C : \angle D :: 2 : 3 : 5 : 8$, what is the value of $\angle B$?
Ans	✔ 1. 60°
	✘ 2. 90°
	✘ 3. 50°
	✘ 4. 40°

Q.19	Find the simple interest (in closest integral ₹) on ₹3000 at 8% per annum rate of interest for the period from 25 February 2024 to 26 April 2024
Ans	✘ 1. 41
	✘ 2. 39
	✘ 3. 38
	✔ 4. 40

Q.20	What is the median of the following data? 50, 48, 40, 73, 29, 14, 89, 14, 51, 76, 78
Ans	✘ 1. 50.5
	✘ 2. 51
	✘ 3. 49.5
	✔ 4. 50

Q.21	Resistance is the property of a material that _____.
Ans	✘ 1. allows the flow of current
	✔ 2. opposes the flow of current
	✘ 3. generates electricity
	✘ 4. converts electrical energy to mechanical energy

Q.22	According to the Citizenship Amendment Act of 2019, individuals who entered India on or before _____ and belong to the Hindu, Sikh, Buddhist, Jain, Parsi or Christian community from Pakistan, Afghanistan or Bangladesh are eligible for citizenship.
Ans	✔ 1. 31 December 2014
	✘ 2. 31 December 2017
	✘ 3. 31 December 2016
	✘ 4. 31 December 2015

Q.23	A number when increased by 50 %', gives 2910. The number is:
Ans	✘ 1. 5820
	✔ 2. 1940
	✘ 3. 3880
	✘ 4. 970

Q.24	Write the expanded form of $(4a + 6b + 9c)^2$.
Ans	✘ 1. $16a^2 + 36b^2 + 81c^2 + 48ab + 103bc + 72ac$
	✘ 2. $16a^2 + 36b^2 + 81c^2 + 48ab + 108bc + 82ac$
	✘ 3. $16a^2 + 36b^2 + 81c^2 + 52ab + 108bc + 72ac$
	✔ 4. $16a^2 + 36b^2 + 81c^2 + 48ab + 108bc + 72ac$

Q.25	A cylindrical rod has an outer curved surface area of 4500 cm². If the length of the rod is 39 cm, then the outer radius (in cm) of the rod, correct to two places of decimal, is: $Take\ \pi = \frac{22}{7}$	
Ans	✓ 1. 18.36	
	✗ 2. 20.93	
	✗ 3. 20.48	
	✗ 4. 18.25	

Q.26	Why does a compass needle get deflected when brought near a bar magnet?	
Ans	✗ 1. The compass needle is non-magnetic.	
	✗ 2. The compass needle has electric charge.	
	✓ 3. The compass needle is a small bar magnet.	
	✗ 4. The compass needle is made of iron.	

Q.27	Covalent molecules have low melting and boiling point because:	
Ans	✗ 1. they are generally gaseous in nature	
	✓ 2. they have weak intermolecular forces	
	✗ 3. they have strong bonds within the molecule	
	✗ 4. they have strong electrostatic intermolecular forces	

Q.28	Where was the Swachh Vayu Diwas celebrated in India to combat air pollution in 2024?	
Ans	✗ 1. Indore	
	✓ 2. Jaipur	
	✗ 3. Bhopal	
	✗ 4. Chandigarh	

Q.29	Which of the following are the 6 accounts that have a role in the economic classification of the budget?	
Ans	✗ 1. Accounts A to F: Transaction in goods, services, and capital	
	✓ 2. Accounts I to VI: Transaction in commodities, revenue, and capital	
	✗ 3. Accounts X to XV: Transaction in current and capital assets	
	✗ 4. Accounts 1 to 6: Transaction in commodities and services and transfers	

Q.30	B, C, D, F and H have different marks. Only one person has scored between B and D. Only three people have scored between H and B. No one has scored between F and B and F's score is more than B's score. How many people have scored less than C?	
Ans	✗ 1. One	
	✗ 2. Four	
	✓ 3. Three	
	✗ 4. Two	

Q.31	Three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which is the letter-cluster pair that does NOT belong to that group? (Note: The odd one out is not based on the number of consonants/vowels or their positions in the letter-cluster.)	
Ans	✗ 1. TQ - MJ	
	✗ 2. ZW - SP	
	✗ 3. NK - GD	
	✓ 4. RV - KJ	

Q.32	Keshav starts from Point A and drives 22 km towards the South. He then takes a left turn, drives 24 km, turns left and drives 27 km. He then takes a left turn and drives 25 km. He takes a final left turn, drives 5 km and stops at Point P. How far (shortest distance) and towards which direction should he drive in order to reach Point A again? (All turns are 90 degrees turns only unless specified)
Ans	✗ 1. 3 km to the east
	✗ 2. 2 km to the east
	✔ 3. 1 km to the east
	✗ 4. 4 km to the east

Q.33	Which factor does NOT affect the electric power consumed by an electric device?
Ans	✔ 1. Frequency of the device
	✗ 2. Resistance of the device
	✗ 3. Voltage applied to the device
	✗ 4. Current passing through the device

Q.34	Two sets of numbers are given below. In each set of numbers, certain mathematical operation(s) on the first number result(s) in the second number. Similarly, certain mathematical operation(s) on the second number result(s) in the third number and so on. Which of the given options follows the same set of operations as in the given sets? (NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into their constituent digits. E.g. 13 – Operations on 13 such as adding / subtracting /multiplying to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.) 6-36-46-92; 7-49-59-118
Ans	✔ 1. 5-25-35-70
	✗ 2. 4-16-26-62
	✗ 3. 3-9-29-58
	✗ 4. 8-64-74-138

Q.35	7 is related to 9.8 following a certain logic. Following the same logic, 11 is related to 15.4. To which of the given options is 9 related, following the same logic? (NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into their constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)
Ans	✗ 1. 13.8
	✗ 2. 12.4
	✔ 3. 12.6
	✗ 4. 11.6

Q.36	The selling price of 25 books is equal to the cost price of 41 books. Find the loss or gain percentage.
Ans	✗ 1. $\dfrac{100}{16}\% \, gain$
	✔ 2. 64 % gain
	✗ 3. $\dfrac{100}{16}\% \, loss$
	✗ 4. 64 % loss

Q.37	What is the thread-like structure in Rhizopus?
Ans	✗ 1. Spores
	✓ 2. Hyphae
	✗ 3. Sporangia
	✗ 4. Blobs

Q.38	Which of the following helps a developing embryo to expel waste products in case of humans?
Ans	✓ 1. Placenta
	✗ 2. Cervix
	✗ 3. Oviduct
	✗ 4. Ovary

Q.39	Which of the following reactions leads to the production of bleaching powder?
Ans	✗ 1. $CaCO_3 + HCl \rightarrow CaCl_2 + CO_2 + H_2O$
	✓ 2. $Ca(OH)_2 + Cl_2 \rightarrow CaOCl_2 + H_2O$
	✗ 3. $Ca(OH)_2 + CO_2 \rightarrow CaCO_3 + H_2O$
	✗ 4. $CaO + H_2O \rightarrow Ca(OH)_2$

Q.40	Which of the following letter-number clusters will replace the question mark (?) in the given series to make it logically complete? QTW 13, MPS 19, ILO 25, EHK 31, ADG 37, ?
Ans	✗ 1. WZC 47
	✗ 2. ZZC 43
	✗ 3. WGC 43
	✓ 4. WZC 43

Q.41	Based on the English alphabetical order, three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which letter-cluster pair DOES NOT belong to that group? (Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)
Ans	✓ 1. FI-NS
	✗ 2. VY-CI
	✗ 3. HK-OU
	✗ 4. SV-ZF

Q.42	Space Kidz India has launched the ShakthiSAT mission to train _____ girls aged 14-18 from 108 countries in space technology, aiming for a satellite launch under ISRO's Chandrayaan-4 mission in 2026.
Ans	✓ 1. 12,000
	✗ 2. 5000
	✗ 3. 10,000
	✗ 4. 7500

Q.43 The mean marks of the following distribution is:

Marks Obtained	No. of Students
83	9
73	5
20	18
82	16

Ans

✗ 1. 57

✗ 2. 78

✗ 3. 50

✓ 4. 58

Q.44 What is the correct sequence of following mountain ranges of India from north to south?

1. Vindhya Range 2. Aravalli Range 3. Ajanta Range 4. Satpura Range

Ans

✗ 1. 2, 1, 3, 4

✗ 2. 1, 2, 4, 3

✓ 3. 2, 1, 4, 3

✗ 4. 1, 2, 3, 4

Q.45 Refer to the following number and symbol series and answer the question that follows. Counting to be done from left to right only.
(Left) 7 % > 9 2 & 4 < 3 # 8 $ 5 * 6 ^ # 1 (Right)
If all the symbols are dropped from the series, which of the following will be third from the left?

Ans

✓ 1. 2

✗ 2. 4

✗ 3. 3

✗ 4. 8

Q.46 The current through a resistor is:

Ans

✗ 1. proportional to the square of the resistance

✓ 2. inversely proportional to the resistance

✗ 3. proportional to the square root of the resistance

✗ 4. directly proportional to the resistance

Q.47 What will come in the place of the question mark (?) in the following equation if '+' and '−' are interchanged and '÷' and '×' are interchanged?

51 − 8 ÷ 2 + 6 × 2 = ?

Ans

✗ 1. 71

✗ 2. 66

✓ 3. 64

✗ 4. 70

Q.48 Which of the following metals is least likely to corrode in moist air?

Ans

✗ 1. Zinc

✗ 2. Iron

✗ 3. Magnesium

✓ 4. Copper

Q.49	**What should come in place of the question mark (?) in the given series based on the English alphabetical order?** **GNK IPM KRO MTQ ?**
Ans	✗ 1. OVR
	✗ 2. OUS
	✔ 3. OVS
	✗ 4. OUR

Q.50	**In the case of a thin lens, how are the centres of curvature typically positioned relative to the optical centre?**
Ans	✔ 1. They are equidistant from the optical centre.
	✗ 2. They are located on the lens surface itself.
	✗ 3. They are closer to the edge than to the optical centre.
	✗ 4. They coincide with the optical centre.

Q.51	**The average price of three items of furniture is Rs 16800. If their prices are in the ratio 3:5:7, the price of the cheapest item (in Rs) is**
Ans	✗ 1. 3360
	✗ 2. 7840
	✗ 3. 5600
	✔ 4. 10080

Q.52	**Which of the following factors directly affects the resistance of a conductor?**
Ans	✔ 1. Length of the conductor
	✗ 2. Power of the conductor
	✗ 3. Voltage across the conductor
	✗ 4. Current through the conductor

Q.53	**Why might surgical family planning methods be risky if not done correctly?**
Ans	✔ 1. They can lead to infections or complications.
	✗ 2. They might prevent ovulation.
	✗ 3. They may cause hormonal side effects.
	✗ 4. They can increase fertility.

Q.54	**Two pipes can fill a tank in 20 hours and 90 hours, respectively. The time (in hours) required to fill the tank when both pipes are opened simultaneously is:**
Ans	✗ 1. $\dfrac{179}{9}$
	✗ 2. $\dfrac{183}{8}$
	✗ 3. $\dfrac{177}{13}$
	✔ 4. $\dfrac{180}{11}$

Q.55	P is the son of Q's brother R. S is the wife of Q and T is the son of S. How is P related to S?
Ans	✗ 1. Father's brother
	✗ 2. Brother's son
	✓ 3. Father's brother's son
	✗ 4. Father's son

Q.56	Double displacement reactions usually occur in:
Ans	✓ 1. aqueous solution
	✗ 2. gaseous state
	✗ 3. all three states
	✗ 4. solid state

Q.57	Q, R, S, T, U and V live on six different floors of the same building. The lowermost floor in the building is numbered 1, the floor above it, number 2 and so on till the topmost floor is numbered 6. S lives on the third floor. Only two people live between S and U. R lives on one of the floors below U but immediately above Q. Q does not live on the fourth floor. V lives on an odd numbered floor. How many people live between T and Q?
Ans	✗ 1. Four
	✗ 2. Three
	✓ 3. Two
	✗ 4. One

Q.58	Write the expanded form of $(3a + 5b + 7c)^2$.
Ans	✗ 1. $9a^2 + 25b^2 + 49c^2 + 30ab + 70bc + 52ac$
	✓ 2. $9a^2 + 25b^2 + 49c^2 + 30ab + 70bc + 42ac$
	✗ 3. $9a^2 + 25b^2 + 49c^2 + 30ab + 65bc + 42ac$
	✗ 4. $9a^2 + 25b^2 + 49c^2 + 34ab + 70bc + 42ac$

Q.59	Which of the following is related to Article 84 of the Constitution?
Ans	✗ 1. Disqualification for membership
	✗ 2. Annual Financial Statement
	✓ 3. Qualification for membership of Parliament
	✗ 4. Ordinance making Power of President

Q.60	The Moplah Rebellion of 1921 took place in which of the following regions?
Ans	✗ 1. Punjab
	✗ 2. Bengal
	✓ 3. Kerala
	✗ 4. Assam

Q.61	What is the final product of sexual reproduction in plants?
Ans	✗ 1. Leaves
	✓ 2. Seeds
	✗ 3. Flowers
	✗ 4. Fruits

Q.62	Which of the following ratio is smallest?
Ans	✗ 1. 17 : 39
	✗ 2. 23 : 48
	✓ 3. 10 : 36
	✗ 4. 15 : 33

Q.63	$\dfrac{(a^5 \times b^9 \times c^1)}{(a^6 \times b^3 \times c^8)}$ in simplified form is:
Ans	✗ 1. $(a^4) \times (b^{-10}) \times (c^1)$
	✗ 2. $(a^{-10}) \times (b^{-5}) \times (c^{-8})$
	✗ 3. $(a^{-5}) \times (b^3) \times (c^{-6})$
	✓ 4. $(a^{-1}) \times (b^6) \times (c^{-7})$

Q.64	If x is inversely proportional to y, and y = 7 when x = 5, find the value of x, when y = 90.
Ans	✓ 1. $\dfrac{7}{18}$
	✗ 2. $\dfrac{7}{19}$
	✗ 3. $\dfrac{9}{21}$
	✗ 4. $\dfrac{8}{19}$

Q.65	Find the total time taken by boat to travel upstream and downstream, if the distance travel in each direction (upstream and downstream) is 270km. If speed of boat is 24 km/h and speed of current is 21 km/h.
Ans	✗ 1. 104 hours
	✗ 2. 87 hours
	✓ 3. 96 hours
	✗ 4. 106 hours

Q.66	What should come in place of the question mark (?) in the given series? 305 251 206 170 143 ?
Ans	✗ 1. 130
	✓ 2. 125
	✗ 3. 120
	✗ 4. 115

Q.67	The knowledge of which two subjects played key role in formulating laws of Inheritance?
Ans	✓ 1. Maths and Science
	✗ 2. Geography and Philosophy
	✗ 3. Philosophy and Science
	✗ 4. Maths and History

Q.68	Select the option in which the triads share the same relationship as that shared by the given triads. HAND - ANDH - NDHA BIRD - IRDB - RDBI
Ans	✗ 1. CUBE - CEBU - BUEC
	✓ 2. ROSE - OSER - SERO
	✗ 3. DUCK - CKDU - CUKD
	✗ 4. FROG - ROGF - ROFG

Q.69	Akshat completes his journey in 10 hours. He covers half the distance at 72 km/h and the rest at 36 km/h. What is the length of the journey (in Km)?
Ans	✗ 1. 481
	✓ 2. 480
	✗ 3. 473
	✗ 4. 471

Q.70	In which case will a lens produce a magnification of exactly 1?
Ans	✗ 1. When the object is at infinity
	✓ 2. When the object is placed at twice the focal length
	✗ 3. When the object is placed between centre of curvature and focal point
	✗ 4. When the object is placed at the focal point

Q.71	In a certain code language,'fast and furious' is coded as 'bo li ke','quick is furious' is coded as 'ke ra ng' and'fast but quick' is coded as 'ng li ty'.What is the code for 'furious' in that language?
Ans	✗ 1. bo
	✗ 2. ra
	✗ 3. li
	✓ 4. ke

Q.72	Refer to the given number, symbol series and answer the question that follows. Counting to be done from left to right only. (Left) 2 3 $ 7 5 & 6 % 3 $ # 9 @) 7 + 6 ? > ? 4 7 5 $ (Right) How many such numbers are there each of which is immediately preceded by a symbol and also immediately followed by another symbol?
Ans	✗ 1. 4
	✓ 2. 5
	✗ 3. 6
	✗ 4. 7

Q.73	Which of the following is NOT a private sector company in India?
Ans	✗ 1. Tata Iron and Steel Company
	✗ 2. Bajaj Auto Limited
	✓ 3. Bharat Heavy Electricals Limited
	✗ 4. Dabur

Q.74	A shopkeeper sells an item for ₹287.7 after giving two successive discounts of 86% and 85% on its marked price. Had he not given any discount, he would have earned a profit of 37%. What is the cost price (in ₹) of the item?
Ans	✓ 1. 10000
	✗ 2. 10038
	✗ 3. 9958
	✗ 4. 10046

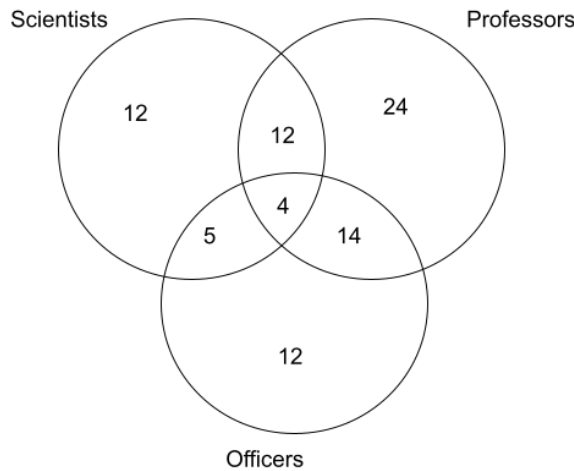| Q.75	In plants, spore formation is a mode of reproduction that involves the production of spores. Which of the following statements about spore formation is true?
Ans	✗ 1. Spores are a form of vegetative propagation in angiosperms only.
	✗ 2. Spores are formed through sexual reproduction in plants.
	✗ 3. Spores are produced by flowers, and they grow into seeds.
	✔ 4. Spores are produced by non-flowering plants like ferns and mosses, and they grow into new plants.

Q.76	Study the given diagram carefully and answer the question that follows. The numbers in different sections indicate the number of persons/objects.

How many such officers exist that are also scientists but not professors?

Ans	✗ 1. 12
	✗ 2. 16
	✗ 3. 4
	✔ 4. 5

Q.77	Find the value of $2.5 \times 4 + 3.68 \div 4 - 8.46 \times 2 + 7.365 \times 4 + 2.8 \times 3 - 1.675 \times 2.$
Ans	✗ 1. 27.98
	✗ 2. 28.96
	✔ 3. 28.51
	✗ 4. 27.21

Q.78	At which of the following places is the tomb of Sher Shah located?
Ans	✗ 1. Patna
	✗ 2. Lahore
	✔ 3. Sasaram
	✗ 4. Agra

Q.79	Who among the following is the leader of the house in the Lok Sabha?
Ans	✗ 1. Lok Sabha Speaker
	✗ 2. Opposition Leader
	✗ 3. President of India
	✔ 4. Prime Minister

Q.80	In a row of people all facing north, Shakshi is 11th from the left end. Ravi is 12th from the left end. Ravi is exactly between Shakshi and Ron. If Ron is 14th from the right end of the row, how many people are there in the row?
Ans	✗ 1. 25
	✔ 2. 26
	✗ 3. 27
	✗ 4. 28

Q.81	Which of the following statements is true about the pH of a neutral solution at 25°C?
Ans	✗ 1. The pH is greater than 7.
	✗ 2. The pH is not equal to 7.
	✗ 3. The pH is less than 7.
	✔ 4. The pH is equal to 7.

Q.82	S, T, U, V, W, X and Y are sitting around a circular table facing the centre. S sits fourth to the left of W. T sits second to the right of S. V is neither the immediate neighbour of T nor S. X sits third to the right of V. Y is not the immediate neighbour of W. How many people are sitting between S and T, when counted from the left of S?
Ans	✔ 1. Four
	✗ 2. Three
	✗ 3. Two
	✗ 4. One

Q.83	Which of the following is called a motile germ cell?
Ans	✔ 1. Male gamete
	✗ 2. Female gamete
	✗ 3. Embryo
	✗ 4. Zygote

Q.84	The Great Stupa at Sanchi is an important site in which religion?
Ans	✗ 1. Islam
	✔ 2. Buddhism
	✗ 3. Jainism
	✗ 4. Hinduism

Q.85	A vendor bought lemons at 40 for a rupee. How many must he sell for a rupee to gain 25%?
Ans	✗ 1. 34
	✗ 2. 36
	✗ 3. 33
	✔ 4. 32

Q.86	What was the venue of the 57th ASEAN Foreign Ministers' Meeting?
Ans	✗ 1. Kuala Lumpur, Malaysia
	✗ 2. Naypyidaw, Myanmar
	✔ 3. Vientiane, Lao People's Democratic Republic
	✗ 4. Jakarta, Indonesia

Q.87	Evaluate: 16 + 18 ÷ 3 - 3 × 3
Ans	✔ 1. 13
	✘ 2. 15
	✘ 3. 12
	✘ 4. 16

Q.88	In a certain code, 'floor door room' is coded as 'bn la mt', 'door chair table' is coded as 'wd bn ka' and 'chair room window' is coded as 'ka bz la'. All the codes are two-letter code only. What is room coded as?
Ans	✘ 1. ka
	✘ 2. bn
	✔ 3. la
	✘ 4. bz

Q.89	If two resistors in series are equal, say R each, what is the total resistance?
Ans	✘ 1. R^2
	✔ 2. 2R
	✘ 3. R
	✘ 4. R/2

Q.90	In which of the following scenarios does the focal length of a concave mirror vary?
Ans	✘ 1. When placed in a vacuum
	✘ 2. When placed in air
	✔ 3. Focal length does not vary in any media
	✘ 4. When placed in water

Q.91	If $\sin\theta = \dfrac{12}{13}$, then what is the value of $26\sin\theta - 10\sec\theta$?
Ans	✘ 1. 0
	✘ 2. 1
	✘ 3. 2
	✔ 4. −2

Q.92	After fertilisation, the zygote divides multiple times to form which structure within the ovule?
Ans	✘ 1. Seed
	✘ 2. Fruit
	✘ 3. Style
	✔ 4. Embryo

Q.93	What should come in place of the question mark (?) in the given series? 29 11 29 15 29 19 29 23 29 ?
Ans	✘ 1. 31
	✘ 2. 25
	✘ 3. 29
	✔ 4. 27

Q.94	**Which of the following letter-clusters should replace # and % so that the pattern and relationship followed between the letter-cluster pair on the left side of :: is the same as that on the right side of ::?** **# : IBX :: HAW : %**
Ans	✖ 1. # = FYU, % = NDZ
	✔ 2. # = FYU, % = KDZ
	✖ 3. # = FYU, % = KDO
	✖ 4. # = FUU, % = KDZ

Q.95	**Which of the following is the correct formula for the first member of the alkene series?**
Ans	✖ 1. C_4H_8
	✔ 2. C_2H_4
	✖ 3. C_3H_6
	✖ 4. C_5H_{10}

Q.96	**Write the expanded form of $(3a + 6b + 5c)^2$.**
Ans	✖ 1. $9a^2 + 36b^2 + 25c^2 + 40ab + 60bc + 30ac$
	✔ 2. $9a^2 + 36b^2 + 25c^2 + 36ab + 60bc + 30ac$
	✖ 3. $9a^2 + 36b^2 + 25c^2 + 36ab + 60bc + 40ac$
	✖ 4. $9a^2 + 36b^2 + 25c^2 + 36ab + 55bc + 30ac$

Q.97	**Select the letter-cluster pair that best represents a similar relationship to the one expressed in the pairs of letter-clusters given below.** **DMO : HPM** **LIF : PLD**
Ans	✖ 1. NEL : RGJ
	✔ 2. VFP : ZIN
	✖ 3. RKY : VNV
	✖ 4. ENZ : IQY

Q.98	**Which of the following statements is/are correct about the PM Vishwakarma Yojana?** **1) The PM Vishwakarma Yojana was launched by the Hon'ble Prime Minister on 17 September 2023.** **2) Scheme aims to provide end-to-end support to artisans and craftspeople who work with their hands and tools.** **3) The Scheme components include recognition through PM Vishwakarma Certificate and ID Card, Skill Upgradation, Toolkit Incentive, Credit Support, Incentive for Digital Transactions, and Marketing Support.**
Ans	✖ 1. 2 only
	✔ 2. 1, 2 and 3
	✖ 3. 3 only
	✖ 4. 1 only

Q.99	**Who is the author of 'Segar: Autobiography with Paintings,' published in 2013?**
Ans	✔ 1. D Raja Segar
	✖ 2. Jhumpa Lahiri
	✖ 3. Githa Hariharan
	✖ 4. Salman Rushdie

Q.100	What is the role of the stigma in the process of fertilisation?
Ans	✅ 1. Serving as the site where pollen lands
	❌ 2. Fusing with the egg cell
	❌ 3. Producing pollen
	❌ 4. Developing into a seed

2024/12/20-00:36:52

Test Date	17/12/2024
Test Time	9:00 AM - 10:30 AM
Subject	RRB JE DMS CMA CS MS

* Note
Correct Answer will carry 1 mark per Question.
Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.
2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : **RRB JE, DMS, CMA, CS, MS CBT-1**

Q.1 An electric fan is connected to a 220 V generator. The current is 0.50 A. What is the power used by the fan?

Ans ✅ 1. 110 Watt

❌ 2. 11 Watt

❌ 3. 440 Watt

❌ 4. 220 Watt

Q.2 Find the arithmetic mean of the following data (correct to two places of decimals).

Class-interval	5-15	15-25	25-35	35-45	45-55	55-65
Frequency	12	18	8	14	16	8

Ans ✅ 1. 33.68

❌ 2. 43.72

❌ 3. 22.38

❌ 4. 39.45

Q.3 Which of the following letter-clusters should replace # and % so that the pattern and relationship followed between the letter-cluster pair on the left side of :: is the same as that on the right side of ::?

 # : RXT :: FLH : %

Ans ❌ 1. # = OGT, % = IKH

❌ 2. # = GHT, % = INY

❌ 3. # = OUP, % = KIU

✅ 4. # = OUQ, % = IOK

Q.4 Which of the following rivers is ephemeral?

Ans ❌ 1. Beas

❌ 2. Chambal

❌ 3. Yamuna

✅ 4. Luni

Q.5	Which of the following is an example of a natural monopoly?
Ans	✗ 1. Bookshop
	✓ 2. Railways
	✗ 3. Apple store in delhi
	✗ 4. Malls

Q.6	A number when increased by 50 %', gives 2760. The number is:
Ans	✓ 1. 1840
	✗ 2. 3680
	✗ 3. 5520
	✗ 4. 920

Q.7	Write the expanded form of $(5a + 6b + 8c)^2$.
Ans	✗ 1. $25a^2 + 36b^2 + 64c^2 + 64ab + 96bc + 80ac$
	✗ 2. $25a^2 + 36b^2 + 64c^2 + 60ab + 91bc + 80ac$
	✓ 3. $25a^2 + 36b^2 + 64c^2 + 60ab + 96bc + 80ac$
	✗ 4. $25a^2 + 36b^2 + 64c^2 + 60ab + 96bc + 90ac$

Q.8	Two taps can fill a cistern in 2 hours and 45 hours respectively. A third tap can empty it in 45 hours. How long (in hours) will it take to fill the empty cistern, if all of them are opened together?
Ans	✓ 1. 2
	✗ 2. 3
	✗ 3. 4
	✗ 4. 5

Q.9	Samples of four metals A, B, C and D were taken and added to a solution individually. The results obtained have been listed as follows. A can displace B from its solution B can displace D from its solution C can displace D from its solution C can displace A from its solution Which is the most reactive metal?
Ans	✓ 1. C
	✗ 2. B
	✗ 3. D
	✗ 4. A

Q.10	Pollen grains are transferred to which part of pistil?
Ans	✗ 1. Ovule
	✓ 2. Stigma
	✗ 3. Ovary
	✗ 4. Style

Q.11	20 ml of NaOH is neutralised by 10 ml of HNO_3. How much NaOH will be required to neutralise 15 ml of HNO_3?
Ans	✗ 1. 20 ml
	✗ 2. 40 ml
	✓ 3. 30 ml
	✗ 4. 25 ml

Q.12	**How do hormonal contraceptives prevent pregnancy?**
Ans	✗ 1. By blocking the fallopian tubes
	✗ 2. By increasing sperm production
	✓ 3. By changing the hormonal balance to prevent egg release
	✗ 4. By creating a physical barrier

Q.13 The volume (in cm^3) of a wire of diameter 56 cm and length 3 m is:

$$take\ \pi = \frac{22}{7}$$

Ans	✗ 1. 739700
	✗ 2. 740200
	✗ 3. 739400
	✓ 4. 739200

Q.14 Which of the following was the venue of the 46th session of the UNESCO World Heritage Committee?

Ans	✗ 1. Dubai, United Arab Emirates
	✓ 2. New Delhi, India
	✗ 3. New York, United States
	✗ 4. Paris, France

Q.15	**The pattern of the magnetic field lines of a solenoid is similar to that of a:**
Ans	✗ 1. ring magnet
	✓ 2. bar magnet
	✗ 3. horseshoe magnet
	✗ 4. button magnet

Q.16	**If 2 is added to each odd digit and 1 is subtracted from each even digit in the number 2687531, then how many digits will appear more than once in the new number thus formed?**
Ans	✗ 1. Four
	✗ 2. One
	✗ 3. Three
	✓ 4. Two

Q.17 If $1 + \dfrac{3x}{1 + \dfrac{1}{1 + \dfrac{x}{1-x}}} = 12,$ then find the value of 'x'.

Ans	✓ 1. 1.6
	✗ 2. 1.8
	✗ 3. 1.2
	✗ 4. 1.4

Q.18	**One of the famous Kali temples in India, Kalighat, is located in which of the following Indian states?**
Ans	✗ 1. Assam
	✓ 2. West Bengal
	✗ 3. Maharastra
	✗ 4. Odisha

Q.19	Anmol starts from Point A and drives 23 km towards the west. He then takes a right turn, drives 27 km, turns right and drives 29 km. He then takes a right turn and drives 32 km. He takes a final right turn, drives 6 km and stops at Point P. How far (shortest distance) and towards which direction should he drive in order to reach Point A again? (All turns are 90° turns only unless specified.)	
Ans	✔ 1. 3 km to the north	
	✘ 2. 4 km to the north	
	✘ 3. 5 km to the north	
	✘ 4. 6 km to the north	

Q.20	Who is the author of "Postcolonial Elements in Amitav Ghosh's 'The Shadow Lines,'" published in 2018?	
Ans	✘ 1. Salman Rushdie	
	✔ 2. Nivedhaa Nivi	
	✘ 3. Amitav Ghosh	
	✘ 4. Arundhati Roy	

Q.21	Who among the following was the first attorney General of Independent India?	
Ans	✔ 1. MC Setalvad	
	✘ 2. SV Gupta	
	✘ 3. Niren de	
	✘ 4. Soli Sorabjee	

Q.22	Three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which is the letter-cluster pair that does NOT belong to that group? (Note: The odd one out is not based on the number of consonants/vowels or their positions in the letter-cluster.)	
Ans	✘ 1. QT - PS	
	✔ 2. FD - LK	
	✘ 3. LO - KN	
	✘ 4. FI - EH	

Q.23	Which of the following letter-number clusters will replace the question mark (?) in the given series to make it logically complete? NTZ 14, KQW 23, HNT 32, EKQ 41, BHN 50, ?	
Ans	✘ 1. YEK 58	
	✘ 2. ZEK 59	
	✘ 3. YKK 59	
	✔ 4. YEK 59	

Q.24	Which of the following best describes a common industrial use of washing soda?	
Ans	✘ 1. Vinegar production	
	✔ 2. Glass manufacturing	
	✘ 3. Fertiliser manufacturing	
	✘ 4. Cement production	

Q.25	Equipment such as geysers and air conditioners, compared to light bulbs and fans, require:	
Ans	✘ 1. less power	
	✘ 2. less voltage	
	✘ 3. higher voltage	
	✔ 4. higher power	

Q.26	A question is followed by two statements numbered (I) and (II). You have to decide whether the data provided in the statements are sufficient to answer the question. Read both the statements and select the most appropriate answer. Question: Five trees, S, M, N, O and A, are of different heights. Which among them is the tallest tree? Statements: (I) N is taller than A. A is taller than M. (II) S is taller than M. S is shorter than O.	
Ans	✔ 1. Data in statements I and II together are not sufficient to answer the question.	
	✘ 2. Data in statements I and II together are sufficient to answer the question.	
	✘ 3. Data in statement I alone is sufficient to answer the question while data in statement II is not.	
	✘ 4. Data in statement II alone is sufficient to answer the question while data in statement I is not.	

Q.27	The median of 7, 18, 22, 12, 14, 7, 23, 16 and 3 is:
Ans	✘ 1. 18
	✔ 2. 14
	✘ 3. 7
	✘ 4. 22

Q.28	Which of the following letter-clusters should replace # and % so that the pattern and relationship followed between the letter-cluster pair on the left side of :: is the same as that on the right side of ::? # : ZWP :: FCV : %
Ans	✔ 1. # = VSL, % = JGZ
	✘ 2. # = VSL, % = JGO
	✘ 3. # = VSU, % = JGZ
	✘ 4. # = USL, % = JGZ

Q.29	Seeds that are dispersed by animals often:
Ans	✔ 1. have hooks or edible flesh
	✘ 2. are very small and light weight
	✘ 3. have wings or parachutes
	✘ 4. can float easily in water

Q.30	Evaluate: 32 ÷ 12 × 3 - 3 × 4
Ans	✔ 1. -4
	✘ 2. -5
	✘ 3. -1
	✘ 4. -2

Q.31	Which of the following describes the relationship between the aperture of a lens and its radius of curvature in the context of thin lenses?
Ans	✔ 1. The aperture is much smaller than the radius of curvature.
	✘ 2. The aperture equals the radius of curvature.
	✘ 3. The aperture is much larger than the radius of curvature.
	✘ 4. The aperture is independent of the radius of curvature.

Q.32	Which of the following is the National Waterway 2 in India?
Ans	✗ 1. West Coast canal and Champakara and Udyogmandal canals
	✓ 2. Brahmaputra river
	✗ 3. Kakinada canal (Kakinada to Rajahmundry)
	✗ 4. East Coast canal and Matai river

Q.33	Read the given statements and conclusions carefully. Assuming that the information given in the statements is true, even if it appears to be at variance with commonly known facts, decide which of the given conclusion(s) logically follow(s) from the statements. Statements: All plums are lamps. Some lamps are ants. All ants are meats. Conclusions: (I): All meats are lamps. (II): Some meats are plums.
Ans	✗ 1. Only conclusion (II) follows.
	✗ 2. Only conclusion (I) follows.
	✓ 3. Neither conclusion (I) nor (II) follows.
	✗ 4. Both conclusions (I) and (II) follow.

Q.34	The concepts no double jeopardy, no self incrimination and no ex post facto are mentioned under _____ of the Indian Constitution.
Ans	✗ 1. Article 23
	✗ 2. Article 21
	✓ 3. Article 20
	✗ 4. Article 19

Q.35	In a certain code language, 'A + B' means 'A is the son of B', 'A − B' means 'A is the brother of B', 'A × B' means 'A is the wife of B' and 'A % B' means ' A is the father of B'. How is S related to H if 'S × D + F % G − H'?
Ans	✗ 1. Brother's daughter
	✓ 2. Brother's wife
	✗ 3. Wife
	✗ 4. Daughter

Q.36	In the process of vegetative propagation, which part of the plant is used in grafting?
Ans	✓ 1. Stem
	✗ 2. Leaf
	✗ 3. Seed
	✗ 4. Root

Q.37	Why are danger signals typically red in colour?
Ans	✗ 1. The colour red is aesthetically pleasing.
	✓ 2. Red light has a longer wavelength and is scattered the least, making it visible from a distance.
	✗ 3. Red light is easier to produce artificially.
	✗ 4. Red light is more reflective than other colours.

Q.38	In a certain code, 'air water land' is coded as 'dy ph mt','fire land ice' is coded as 'lp ph st', and'water fire grass' is coded as 'st bq dy'.What is the code for 'land' in that language?
	(Note: All the codes are two letter coded only.)
Ans	✔ 1. ph
	✘ 2. st
	✘ 3. dy
	✘ 4. mt

Q.39	Which of the following statements is true about the physical properties of compounds in a homologous series?
Ans	✘ 1. They have identical melting and boiling points.
	✘ 2. Their boiling points decrease as the number of carbon atoms increase.
	✔ 3. They have a regular change in melting and boiling points.
	✘ 4. Their physical properties do not change.

Q.40	If at same rate of interest, in 2 years, the simple interest is ₹56 and compound interest is ₹64, then what is the principal (in ₹)?
Ans	✘ 1. 93
	✔ 2. 98
	✘ 3. 91
	✘ 4. 102

Q.41	Which of the following ratio is smallest?
Ans	✔ 1. 20 : 51
	✘ 2. 22 : 47
	✘ 3. 21 : 49
	✘ 4. 28 : 39

Q.42	What is formed when sodium sulfate reacts with barium chloride in a double displacement reaction?
Ans	✘ 1. Sodium sulfate and barium chloride
	✘ 2. Sodium chloride and barium hydroxide
	✔ 3. Sodium chloride and barium sulfate
	✘ 4. Sodium hydroxide and barium chloride

Q.43	Shalini travels a distance of 138 km with speed of 46 km/h and 438 km with 73 km/h by her car. Find the average speed (in km/h) of Shalini.
Ans	✘ 1. 56
	✘ 2. 68
	✘ 3. 70
	✔ 4. 64

Q.44	Mendel had selected garden pea for certain favourable reasons. Which of the following is NOT a reason for his choice required for his experiments?
Ans	✘ 1. They produce many offsprings.
	✘ 2. They can be self-pollinated and cross-pollinated.
	✘ 3. They have easily observable traits.
	✔ 4. They have a long generation time.

Q.45	Which of the following statements is INCORRECT?
Ans	✅ 1. Sonia Gandhi became the Leader of Opposition in the 18th Lok Sabha.
	❌ 2. Narendra Modi took oath as the Prime Minister of India in June 2024.
	❌ 3. Om Birla is elected as the Speaker of the 18th Lok Sabha.
	❌ 4. Amit Shah assumed charge as Union Home Minister and Minister of Cooperation in June 2024.

Q.46	Three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which is the letter-cluster pair that does NOT belong to that group? (Note: The odd one out is not based on the number of consonants/vowels or their positions in the letter-cluster.)
Ans	❌ 1. HY - FZ
	❌ 2. SJ - QK
	✅ 3. OF - NG
	❌ 4. CT - AU

Q.47	Write the expanded form of $(6a + 8b + 3c)^2$.
Ans	❌ 1. $36a^2 + 64b^2 + 9c^2 + 96ab + 43bc + 36ac$
	❌ 2. $36a^2 + 64b^2 + 9c^2 + 100ab + 48bc + 36ac$
	❌ 3. $36a^2 + 64b^2 + 9c^2 + 96ab + 48bc + 46ac$
	✅ 4. $36a^2 + 64b^2 + 9c^2 + 96ab + 48bc + 36ac$

Q.48	Find the simple interest (in closest integral ₹) on ₹4000 at 5.25% per annum rate of interest for the period from 11 February 2024 to 12 April 2024
Ans	❌ 1. 34
	✅ 2. 35
	❌ 3. 33
	❌ 4. 36

Q.49	Which Indian cricketer was appointed as the brand ambassador for MotoGP in India in July 2024?
Ans	❌ 1. Jasprit Bumrah
	❌ 2. Virat Kohli
	✅ 3. Shikhar Dhawan
	❌ 4. Rohit Sharma

Q.50	The balanced equation which shows the decomposition of hydrogen peroxide is:
Ans	❌ 1. $2HO_2 \rightarrow 2HO + O_2$
	❌ 2. $H_2O_2 \rightarrow 2H_2O + O_2$
	❌ 3. $H_2O_2 \rightarrow H_2O + O_2$
	✅ 4. $2H_2O_2 \rightarrow 2H_2O + O_2$

Q.51	What is the average of all the natural numbers from 1 to 98?
Ans	❌ 1. 49
	❌ 2. 50
	❌ 3. 50.5
	✅ 4. 49.5

Q.52	Which of the following statements is true for a balanced chemical equation?
Ans	✗ 1. The total number of moles is the same on both sides.
	✗ 2. The total mass of molecules is unequal on both sides.
	✔ 3. The total number of atoms of each element is the same on both sides.
	✗ 4. The total number of molecules is the same on both sides.

Q.53	In which process multicellular organisms break into smaller pieces upon maturation?
Ans	✗ 1. Sporulation
	✗ 2. Fission
	✗ 3. Regeneration
	✔ 4. Fragmentation

Q.54	Write the expanded form of $(7a + 9b + 4c)^2$.
Ans	✔ 1. $49a^2 + 81b^2 + 16c^2 + 126ab + 72bc + 56ac$
	✗ 2. $49a^2 + 81b^2 + 16c^2 + 126ab + 72bc + 66ac$
	✗ 3. $49a^2 + 81b^2 + 16c^2 + 130ab + 72bc + 56ac$
	✗ 4. $49a^2 + 81b^2 + 16c^2 + 126ab + 67bc + 56ac$

Q.55	Which of the following statements is NOT a reason for the versatile nature of carbon?
Ans	✗ 1. Carbon exhibits catenation
	✔ 2. Carbon can form ionic bonds with itself
	✗ 3. Carbon can form single, double, and triple bonds
	✗ 4. Carbon has tetravalency

Q.56	Two numbers are in the ratio 2 : 4. If the first number is increased by 4 and the second number is decreased by 14, then the ratio becomes 8 : 5. What is the sum of the original two numbers?
Ans	✗ 1. 41
	✗ 2. 24
	✗ 3. 38
	✔ 4. 36

Q.57	What is the average of all the natural numbers from 1 to 59?
Ans	✗ 1. 29.5
	✗ 2. 31
	✗ 3. 30.5
	✔ 4. 30

Q.58	Among five people named A, B, C, D and E, each has a certain age. C is thrice the age of D. The age of A is 6. D is half the age of E. B is twice the age of A. If E is four times the age of B, what is the age of C?
Ans	✗ 1. 70
	✗ 2. 75
	✗ 3. 76
	✔ 4. 72

Q.59	A man sold an article for ₹330 by first giving a d% discount on its marked price, and then another discount having the same nominal value (in ₹). If the marked price of the article is ₹1320, then what is the value of d?
Ans	✗ 1. 38.4
	✗ 2. 41.1
	✗ 3. 36.9
	✔ 4. 37.5

Q.60	Five bells toll together initially and then continue to toll at time intervals of 4, 8, 12, 16 and 20 seconds respectively. If they start tolling simultaneously at 12:00 p.m., then find how many times they will toll together between 12:00 p.m. to 3:00 p.m.
Ans	✗ 1. 62
	✗ 2. 54
	✗ 3. 42
	✔ 4. 46

Q.61	This question is based on five, four-digit numbers given below. (Example- 6970 – First digit = 6, second digit = 9, third digit = 7 and fourth digit=0) 2314 7651 3245 9072 8062 How many numbers are there wherein the sum of first and second digits is equal to the sum of third and fourth digits?
Ans	✔ 1. Three
	✗ 2. Four
	✗ 3. One
	✗ 4. Two

Q.62	Quwwat-al-islam mosque is located in which of the following cities?
Ans	✗ 1. Sikar
	✗ 2. Hyderabad
	✔ 3. New Delhi
	✗ 4. Ajmer

Q.63	What was the name of the movement started in 1927 in Maharashtra, led by Dr. BR Ambedkar to access public resources such as water bodies, temples and schools?
Ans	✗ 1. Bombay Peasants Revolt
	✗ 2. Kheda Satyagraha
	✗ 3. Shahada Movement
	✔ 4. Mahad Satyagraha

Q.64	Which of the following is NOT an essential qualification for being elected as the President?
Ans	✗ 1. Citizen of India
	✔ 2. Highly educated
	✗ 3. Qualified for election as a member of the House of the People
	✗ 4. Completion of 35 years

Q.65	18 is related to 62 following a certain logic. Following the same logic, 22 is related to 78. To which of the given options is 15 related to, following the same logic?
	(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into their constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)
Ans	✗ 1. 45
	✔ 2. 50
	✗ 3. 55
	✗ 4. 60

Q.66	The National Health Authority (NHA) and _____ signed a Memorandum of Understanding (MoU) on 11th September. The partnership aims to revolutionise artificial intelligence in health research with an innovative data platform.
Ans	✗ 1. IIT Madras
	✗ 2. IIT Delhi
	✗ 3. IIT Kharagpur
	✔ 4. IIT Kanpur

Q.67	The average score of a cricketer in 20 matches is 40 runs. If his highest score in a match was 78 runs, what is the average of his scores in the remaining 19 matches?
Ans	✗ 1. 34
	✗ 2. 36
	✗ 3. 40
	✔ 4. 38

Q.68	Refer to the following number, symbol series and answer the question. Counting to be done from left to right only.
	(Left) € $ 7 1 5 * 9 % 2 £ 5 $ 6 £ € 8 8 4 6 £ % 8 (Right)
	How many such symbols are there each of which is immediately preceded by a number and also immediately followed by a number?
Ans	✗ 1. 6
	✔ 2. 4
	✗ 3. 3
	✗ 4. 5

Q.69	Evaluate: 16 + 16 ÷ 4 - 3 × 4
Ans	✔ 1. 8
	✗ 2. 10
	✗ 3. 11
	✗ 4. 7

Q.70	A and B can do a piece of work in 8 days and 37 days, respectively. The number of days [Correct to one decimal place] required to complete the work if both A and B work together is:
Ans	✗ 1. 7.7
	✗ 2. 10.7
	✗ 3. 7.1
	✔ 4. 6.5

Q.71	Seven people, B, D, E, F, P, Q and R, are sitting in a row, facing north. No one sits to the left of E. Only four people sit between E and R. Only three people sit to the right of D. F sits to the immediate left of B. P is not an immediate neighbour of D. Who sits third to the left of P?
Ans	✗ 1. R
	✓ 2. D
	✗ 3. B
	✗ 4. F

Q.72	If the area of a trapezium is 80 cm^2 and the parallel sides are 13.5 and 6.5 cm, then the distance between them (in cm) is _____.
Ans	✓ 1. 8
	✗ 2. 9
	✗ 3. 12
	✗ 4. 10

Q.73	In a certain code language,'batter ball six' is coded as 'lo ka di','bowler ball wicket' is coded as 'ka mi th' and'batter cricket bowler' is coded as 'lo th qy'.What is the possible code for 'cricket ball' in that language?
Ans	✗ 1. ka th
	✓ 2. ka qy
	✗ 3. th lo
	✗ 4. qy lo

Q.74	Select the option in which the triads share the same relationship as that shared by the given triads. JINX - JXIN - JNXI COZY - CYOZ - CZYO
Ans	✓ 1. JAWS - JSAW - JWSA
	✗ 2. FAIR - FARI - FIAR
	✗ 3. EVIL - EIVL - ELIV
	✗ 4. DRUG - DGUR - DUGR

Q.75	In a row of 38 students facing north, Sunil is 20th from the left end. If Harsh is 10th to the right of Sunil, what is Harsh's position from the right end of the row?
Ans	✗ 1. 6th
	✗ 2. 7th
	✗ 3. 8th
	✓ 4. 9th

Q.76	A piece of zinc is placed in three different solutions: lead nitrate, aluminium sulphate and silver nitrate. Which solution(s) will zinc be able to displace the metal from its solution?
Ans	✓ 1. Lead nitrate and silver nitrate
	✗ 2. Only silver nitrate
	✗ 3. Aluminium sulphate and silver nitrate
	✗ 4. Lead nitrate and aluminium sulphate

Q.77	Mahesh purchased 10 kg of rice at the rate of ₹35 per kg and 38 kg of rice at ₹46 per kg. He sold the mixture at the rate of ₹43.5 per kg. Find his loss (in ₹).
Ans	✔ 1. 10
	✘ 2. 5
	✘ 3. 18
	✘ 4. 15

Q.78	If an image is formed by a spherical mirror with a magnification of +1, which of the following statements is true?
Ans	✘ 1. The image is real and equal in size to the object.
	✘ 2. The image is virtual and half the size of the object.
	✔ 3. The image is virtual and equal in size to the object.
	✘ 4. The image is real and twice the size of the object.

Q.79	A vertical stick 11 m long casts a shadow 7 m long on the ground. At the same time, a tower casts a shadow of 35 m long on the ground. The height of the tower is:
Ans	✘ 1. 52 m
	✔ 2. 55 m
	✘ 3. 50 m
	✘ 4. 60 m

Q.80	What should come in place of the question mark (?) in the given series? 19 30 52 96 184 ?
Ans	✘ 1. 359
	✘ 2. 362
	✘ 3. 361
	✔ 4. 360

Q.81	What should come in place of the question mark (?) in the given series? 136 117 122 103 108 89 ?
Ans	✘ 1. 108
	✔ 2. 94
	✘ 3. 70
	✘ 4. 84

Q.82	Seven boxes, R, S, T, U, X, Y and Z, are kept one over the other but not necessarily in the same order. Only T is kept above X. Only Z is kept between X and Y. Only U is kept below R. How many boxes are kept between S and U?
Ans	✘ 1. Four
	✘ 2. Three
	✘ 3. Two
	✔ 4. One

Q.83	Which of the following received the top honour in the Best Urban Local Body category at the 5th National Water Awards for its innovative water conservation initiatives?
Ans	✘ 1. Indore, Madhya Pradesh
	✘ 2. Pune, Maharashtra
	✘ 3. Bhopal, Madhya Pradesh
	✔ 4. Surat, Gujarat

Q.84	₹4800 were divided among P, Q and R, such that 6 times of P = 3 times of Q = 8 times of R. Find the share of R.
Ans	✗ 1. ₹815
	✓ 2. ₹960
	✗ 3. ₹1034
	✗ 4. ₹1068

Q.85	The first fundamental factor for evolution is:
Ans	✓ 1. genetic variation
	✗ 2. healthy offsprings
	✗ 3. cell division for growth
	✗ 4. competition among individuals

Q.86	In the reaction: $Zn + CuSO_4 \rightarrow ZnSO_4 + Cu$, what happens to zinc?
Ans	✗ 1. Zinc is reduced.
	✗ 2. Zinc loses electrons.
	✓ 3. Zinc is oxidised.
	✗ 4. Zinc does not change.

Q.87	Which combination of factors would result in the lowest resistance for a conductor?
Ans	✗ 1. Short length and small cross-sectional area
	✓ 2. Short length and large cross-sectional area
	✗ 3. Long length and small cross-sectional area
	✗ 4. Long length and large cross-sectional area

Q.88	Select the term from among the given options that can replace the question mark (?) in the following series. PKI 23, MHF 31, JEC 47, GBZ 79, DYW 143, ?
Ans	✓ 1. AVT 271
	✗ 2. AVT 270
	✗ 3. UVT 271
	✗ 4. AYT 271

Q.89	A man walks to a viewpoint and returns to the starting point by his car maintaining constant speed and thus takes a total time of 3 hours 15 minutes. He would have gained 3 hours by driving both ways. How long would it have taken for him to walk both ways with same walking speed?
Ans	✓ 1. 6 hours 15 minutes
	✗ 2. 5 hours 15 minutes
	✗ 3. 6 hours 45 minutes
	✗ 4. 7 hours 30 minutes

Q.90	An object is placed 12 cm in front of a convex mirror with a focal length of 8 cm. What is the image distance (v)?
Ans	✗ 1. +20 cm
	✓ 2. +4.8 cm
	✗ 3. −20 cm
	✗ 4. −4.8 cm

Q.91	Two sets of numbers are given below. In each set of numbers, certain mathematical operation(s) on the first number result(s) in the second number. Similarly, certain mathematical operation(s) on the second number result(s) in the third number and so on. Which of the given options follows the same set of operations as in the given sets? (NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into their constituent digits. E.g. 13 – Operations on 13 such as adding / subtracting /multiplying to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.) 8-24-72-216; 6-18-54-162
Ans	✗ 1. 12-36-108-216
	✓ 2. 7-21-63-189
	✗ 3. 11-33-99-287
	✗ 4. 9-27-81-343

Q.92	A man spends 76% of his monthly salary (in ₹) on the rent of his house. If every month he also spends ₹813 on his conveyance and ₹2508 on his grocery and saves the remaining ₹687, his monthly salary (in ₹) is:
Ans	✓ 1. 16700
	✗ 2. 16611
	✗ 3. 16621
	✗ 4. 16617

Q.93	What are the two versions of a gene controlling a trait called?
Ans	✗ 1. Proteins
	✗ 2. Chromosomes
	✗ 3. Mutations
	✓ 4. Alleles

Q.94	When several resistors are joined in series, the equivalent resistance of the combination is:
Ans	✗ 1. greater than the sum of the individual resistances
	✓ 2. equal to the sum of the individual resistances
	✗ 3. less than the sum of the individual resistances
	✗ 4. equal to the product of the individual resistances

Q.95	Which of these is NOT a property of magnetic field lines?
Ans	✗ 1. They travel from south to north inside the magnet.
	✗ 2. They never intersect.
	✗ 3. They are continuous closed loops.
	✓ 4. They repel each other.

Q.96	What will come in the place of the question mark (?) in the following equation, if '+' and '−' are interchanged and '×' and '÷' are interchanged? 26 + 43 − 32 × 23 ÷ 46 = ?
Ans	✓ 1. 47
	✗ 2. 49
	✗ 3. 48
	✗ 4. 45

Q.97	What is the role of the ovary in the process of fertilisation in plants?
Ans	✅ 1. To produce the egg cell
	❌ 2. To produce pollen
	❌ 3. To store the male gametes
	❌ 4. To provide nutrients to the pollen grains

Q.98	Suppose a gardener wants to plant pea which should be of the dwarf varieties. What do you suggest for the choice of the parent plant seeds by the gardener?
Ans	❌ 1. All seeds should be of tall varieties.
	❌ 2. All seeds should be of mixed varieties.
	❌ 3. Any kind of seed can be used.
	✅ 4. All seeds should be of dwarf varieties.

Q.99	The diameters of two concentric circles are 34 cm and 50 cm. A straight line, CAPF, intersects the larger circle at points C and F and intersects the smaller circle at points A and P. If AP = 16 cm, find the length of CF.
Ans	❌ 1. 34 cm
	❌ 2. 50 cm
	❌ 3. 30 cm
	✅ 4. 40 cm

Q.100	The selling price of 30 books is equal to the cost price of 45 books. Find the loss or gain percentage.
Ans	✅ 1. 50 % gain
	❌ 2. $\dfrac{100}{15}\% \, gain$
	❌ 3. 50 % loss
	❌ 4. $\dfrac{100}{15}\% \, loss$

2024/12/20-10:13:43

Test Date	17/12/2024
Test Time	12:45 PM - 2:15 PM
Subject	RRB JE DMS CMA CS MS

* Note
Correct Answer will carry 1 mark per Question.
Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.
2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : **RRB JE, DMS, CMA, CS, MS CBT-1**

Q.1	**Find the simple interest (in closest integral ₹) on ₹4000 at 5.25% per annum rate of interest for the period from 5 February 2024 to 6 April 2024**
Ans	✗ 1. 33
	✗ 2. 34
	✗ 3. 36
	✓ 4. 35

Q.2	**Which of the following statements is INCORRECT about the Annual Financial Statement 2024-25?** **1) The Budget 2024-25 will focus on four castes.** **2) 1 crore farmers across the country will be initiated into natural farming, supported by certification and branding in the next 2 years.** **3) 20,000 need-based bio-input resource centres to be established.** **4) 1,000 Industrial Training Institutes will be upgraded in hub and spoke arrangements with outcome orientation.**
Ans	✓ 1. 3 only
	✗ 2. 4 only
	✗ 3. 2 only
	✗ 4. 1 only

Q.3	**Which of the following is true about asexual reproduction?**
Ans	✓ 1. It results in offspring genetically identical to the parent.
	✗ 2. It requires complex reproductive organs.
	✗ 3. It requires fertilisation.
	✗ 4. It involves two parent organisms.

Q.4	**What are the number of chromosomes in a human male germ cell?**
Ans	✗ 1. 46 pairs of Chromosomes
	✗ 2. 23 pairs of Chromosomes
	✓ 3. 23 Chromosomes
	✗ 4. 46 Chromosomes

Click To Join Telegram Railway News Room || Railway Quick Updates || Free Notes ||

Q.5	In which language was the classic Indian novel 'Chandrakanta' originally written?
Ans	✔ 1. Hindi
	✘ 2. Bengali
	✘ 3. Urdu
	✘ 4. Tamil

Q.6	In Delhi Sultanate, the holder of an 'iqta', who also worked as the administrative head of his 'iqta', was designated as _____.
Ans	✘ 1. ariz
	✘ 2. wazir
	✘ 3. qazi
	✔ 4. muqti

Q.7	A six-digit number is divisible by 91. If 143 is added to this number, the resulting number is divisible by which of the following number?
Ans	✔ 1. 13
	✘ 2. 7
	✘ 3. 11
	✘ 4. 91

Q.8	GJBF is related to ILDH in a certain way based on the English alphabetical order. In the same way, JMEI is related to LOGK. To which of the following is MPHL related, following the same logic?
Ans	✘ 1. ROJN
	✔ 2. ORJN
	✘ 3. ORNJ
	✘ 4. RONJ

| Q.9 | Read the given statements and conclusions carefully. Assuming that the information given in the statements is true, even if it appears to be at variance with commonly known facts, decide which of the given conclusion(s) logically follow(s) from the statements.

Statements:
All waters are liquids.
All liquids are juices.
All juices are fruits.

Conclusions:
(I) All waters are fruits.
(II) Some fruits are liquids. |
|---|---|
| Ans | ✔ 1. Both conclusions (I) and (II) follow. |
| | ✘ 2. Only conclusion (I) follows. |
| | ✘ 3. Only conclusion (II) follows. |
| | ✘ 4. Neither conclusion (I) nor (II) follows. |

Q.10	Which of the following statements about AIDS is FALSE?
Ans	✘ 1. AIDS is caused by the HIV virus.
	✔ 2. AIDS can be transmitted through mosquito bites.
	✘ 3. AIDS can be prevented by practising safe sex.
	✘ 4. AIDS affects the immune system of the body.

Q.11	Hindustan Socialist Republican Association (HSRA) was founded in 1928 in which of the following cities?	
Ans	✔ 1. Delhi	
	✘ 2. Lahore	
	✘ 3. Pune	
	✘ 4. Calcutta	

Q.12	Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster DOES NOT belong to that group? (Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)	
Ans	✔ 1. ENPU	
	✘ 2. HPSX	
	✘ 3. CKNS	
	✘ 4. KSVA	

Q.13	If '×' means 'addition', '+' means 'subtraction', '−' means 'division' and '÷' means 'multiplication', then what will come in place of the question mark (?) in the following equation? 14 + 1 ÷ 7 × 32 − 8 = ?	
Ans	✘ 1. 12	
	✔ 2. 11	
	✘ 3. 14	
	✘ 4. 13	

Q.14	The average of four consecutive odd numbers is 36. What is the greatest of these numbers?	
Ans	✘ 1. 37	
	✔ 2. 39	
	✘ 3. 43	
	✘ 4. 41	

Q.15	Which of the following statements best describes what happens in a double displacement reaction?	
Ans	✘ 1. Electrons are transferred between atoms.	
	✔ 2. Ions in two compounds switch places to form two new compounds.	
	✘ 3. Two elements combine to form a compound.	
	✘ 4. A compound breaks down into simpler substances.	

Q.16	In a certain code language, 'hat tie watch' is coded as 'zm ph mt', 'belt bow tie' is coded as 'la oe zm', 'bow watch clip' is coded as 'oe mt dy'. What is the code for 'hat' in that language? (Note: All the codes are two-letter coded only.)	
Ans	✘ 1. oe	
	✘ 2. mt	
	✔ 3. ph	
	✘ 4. zm	

Q.17	What is the sum of the numbers between 250 and 450, such that when it is divided by 8, 12 and 18, it leaves no remainder?	
Ans	✔ 1. 1080	
	✘ 2. 1152	
	✘ 3. 936	
	✘ 4. 1008	

Q.18

If the mean of the following data is 40, then the value of X is:

xi	10	25	70	85
fi	21	X	22	35

Ans	✘ 1. 112
	✔ 2. 107
	✘ 3. 120
	✘ 4. 134

Q.19	If the interest earned during the 2nd year on a certain sum is ₹3726, and the rate of interest is 15% per annum compounded annually, then the sum is:
Ans	✔ 1. ₹21600
	✘ 2. ₹20885
	✘ 3. ₹21185
	✘ 4. ₹20835

Q.20	The number of 176-Ω resistors (in parallel) required to carry 5 A on a 220-V line is:
Ans	✔ 1. 4
	✘ 2. 16
	✘ 3. 2
	✘ 4. 8

Q.21	Based on the English alphabetical order, three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which letter-cluster pair DOES NOT belong to that group? (Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)
Ans	✘ 1. MO – RT
	✔ 2. VW – XZ
	✘ 3. DF – IK
	✘ 4. JL – OQ

Q.22	Each of D, E, F, K, L, M and N has an exam on a different day of a week, starting from Monday and ending on Sunday of the same week. N has exam on Thursday. L has an exam two days before N. Only four people have exams between F and L. M has an exam on one of the days after L. D has an exam on the day immediately before E. How many people have exams between E and M?
Ans	✘ 1. Three
	✘ 2. One
	✔ 3. Two
	✘ 4. Four

Q.23	Which of the following rights is NOT part of the Right to Life under Article 21 of the Indian Constitution?	
Ans	✔ 1. Right to Property	
	✘ 2. Right to Privacy	
	✘ 3. Right to Free Legal Aid	
	✘ 4. Right to Livelihood	

Q.24	The special reproductive structures in fungi like Rhizopus, which germinate to form new individuals, are called:	
Ans	✔ 1. Spores	
	✘ 2. Anthers	
	✘ 3. Gemmules	
	✘ 4. Pollens	

Q.25	When the pH of rainwater falls below 5.6, it is commonly referred to as:	
Ans	✔ 1. acid rain	
	✘ 2. alkaline rain	
	✘ 3. hard water	
	✘ 4. mineral rain	

Q.26	What should come in place of the question mark (?) in the given series? 78 79 83 92 108 ?	
Ans	✘ 1. 134	
	✘ 2. 135	
	✔ 3. 133	
	✘ 4. 132	

Q.27	Which of the following ratio is smallest?	
Ans	✘ 1. 18 : 42	
	✔ 2. 19 : 60	
	✘ 3. 15 : 47	
	✘ 4. 29 : 55	

Q.28	A number when increased by 50 %', gives 2790. The number is:	
Ans	✘ 1. 5580	
	✘ 2. 930	
	✘ 3. 3720	
	✔ 4. 1860	

Q.29	The average price of three items of furniture is Rs 16440. If their prices are in the ratio 3:5:7, the price of the cheapest item (in Rs) is	
Ans	✔ 1. 9864	
	✘ 2. 3288	
	✘ 3. 5480	
	✘ 4. 7672	

Q.30	The magnetic field lines of a bar magnet may NOT be drawn using:	
Ans	✘ 1. another bar magnet	
	✘ 2. a magnetic compass	
	✘ 3. iron filings	
	✔ 4. wood particles	

Q.31	Which of the following is true for a balanced chemical equation?
Ans	✗ 1. The mass of reactants is always greater than the mass of products.
	✗ 2. The number of molecules on each side is always equal.
	✗ 3. The products have more atoms than the reactants.
	✔ 4. The total number of atoms for each element is the same on both sides of the equation.

Q.32	Manur starts from Point A and drives 12 km towards the East. He then takes a right turn, drives 11 km, turns right and drives 13 km. He then takes a right turn and drives 17 km. He takes a final right turn, drives 1 km and stops at Point P. How far (shortest distance) and towards which direction should he drive in order to reach Point A again? (All turns are 90 degrees turns only unless specified)
Ans	✗ 1. 2 km to the South
	✗ 2. 5 km to the South
	✔ 3. 6 km to the South
	✗ 4. 3 km to the South

Q.33	This question is based on the five, four-digit numbers given below. (Left) 5479 3126 6785 9254 1630 (Right) (Example: 697 – First digit = 6, second digit = 9 and third digit = 7) NOTE: All the operations to be performed from left to right. What will be the resultant if the fourth digit of the second-greatest number is added to the third digit of the smallest number?
Ans	✗ 1. 12
	✗ 2. 10
	✔ 3. 8
	✗ 4. 14

Q.34	The difference in the age of two people is 24 years. If 6 years ago, the older of the two was four times as old as the younger one, then find their present ages.
Ans	✗ 1. 15 and 39 years
	✗ 2. 12 and 36 years
	✔ 3. 14 and 38 years
	✗ 4. 16 and 40 years

Q.35	What is the primary reason for a central bank to increase the reserve requirement ratio of commercial banks?
Ans	✔ 1. To decrease the money supply in the economy
	✗ 2. To increase the money supply in the economy
	✗ 3. To decrease the profitability of commercial banks
	✗ 4. To encourage banks to lend more

Q.36	Which of the following statements is correct regarding magnets?
Ans	✗ 1. A magnet can have either north or south pole.
	✔ 2. A magnet is a dipole with north and south poles.
	✗ 3. A magnet produces magnetic as well as electric fields.
	✗ 4. A magnet can attract an electron.

Q.37	What is the result when sodium chloride and silver nitrate are mixed in a double displacement reaction?
Ans	✗ 1. Formation of a salt
	✗ 2. Formation of water
	✔ 3. Formation of a precipitate
	✗ 4. Formation of a gas

Q.38	Find the value of $8.25 \times 6 - 3.14 \times 7 + 2.758$ of $2.5 - 4.365 \times 5.$
Ans	✗ 1. 12.97
	✗ 2. 11.05
	✗ 3. 11.82
	✓ 4. 12.59

Q.39	What is the average of all the natural numbers from 1 to 95?
Ans	✗ 1. 49
	✓ 2. 48
	✗ 3. 48.5
	✗ 4. 47.5

Q.40	Which electrical appliance helps preserve food by maintaining low temperatures?
Ans	✗ 1. Microwave
	✗ 2. Electric kettle
	✓ 3. Refrigerator
	✗ 4. Toaster

Q.41	The ratio of the lengths of two corresponding sides of two similar triangles is 17 : 13. The ratio of the areas of these two triangles, in the order mentioned, is:
Ans	✓ 1. 289 : 169
	✗ 2. 17 : 13
	✗ 3. $17\sqrt{17} : 13$
	✗ 4. 290 : 170

Q.42	The numbers of children in 10 families of a locality are 2, 1, 3, 4, 2, 3, 5, 1, 1, 3. The number of children per family is:
Ans	✗ 1. 2.8
	✓ 2. 2.5
	✗ 3. 2.4
	✗ 4. 3

Q.43	If A:B = 1 : 3, B:C = 4 : 3 and C : D = 6 : 7, then A:B:C:D is
Ans	✓ 1. 8:24:18:21
	✗ 2. 6:24:18:21
	✗ 3. 8:22:18:21
	✗ 4. 8:24:16:21

Q.44	With respect to Quad Leaders' Summit, which of the following statements is/are correct? 1) The Quad Leaders' Summit was held in Wilmington (US) in 2024. 2) The year 2024 marks 22 years since the formation of the grouping. 3) India will host the 2025 Quad Leaders Summit.
Ans	✓ 1. 1 and 3 only
	✗ 2. 1 only
	✗ 3. 2 and 3 only
	✗ 4. 1 and 2 only

Q.45	Kapil Parmar created history by securing India's first-ever medal in which game at the Paralympic Games 2024?
Ans	✔ 1. Judo
	✘ 2. Shooting
	✘ 3. Fencing
	✘ 4. Table Tennis

Q.46	In a row of 25 students facing north, Manoj is 15th from the right end. If Harish is 10th to the left of Manoj, what is Harish's position from the left end of the row?
Ans	✔ 1. 1st
	✘ 2. 2nd
	✘ 3. 3rd
	✘ 4. 4th

Q.47	If x is inversely proportional to y, and y = 6 when x = 7, find the value of x, when y = 64.
Ans	✔ 1. $\dfrac{21}{32}$
	✘ 2. $\dfrac{23}{35}$
	✘ 3. $\dfrac{22}{33}$
	✘ 4. $\dfrac{21}{33}$

Q.48	In surgical procedures for contraception in males, sperm transfer gets prevented if which of the following is blocked?
Ans	✘ 1. Fallopian tubes
	✘ 2. Testes
	✔ 3. Vas deferens
	✘ 4. Ovary

Q.49	The solution of the system of linear equations is: x + y + z = 6, 2x − y + 3z = 14, −x + 2y −z = −2
Ans	✔ 1. $x = \dfrac{-4}{3}, y = \dfrac{4}{3}, z = 6$
	✘ 2. $x = \dfrac{4}{3}, y = \dfrac{-4}{3}, z = 5$
	✘ 3. $x = \dfrac{5}{3}, y = \dfrac{-5}{3}, z = 6$
	✘ 4. $x = \dfrac{-5}{3}, y = \dfrac{5}{3}, z = -6$

Q.50	Students and professors of which IIT have developed an innovative fire rescue drone in June 2024?
Ans	✘ 1. IIT Delhi
	✘ 2. IIT Mandi
	✘ 3. IIT Madras
	✔ 4. IIT Dharwad

Q.51	How many members of the Rajya Sabha are nominated by the President of India?	
Ans	✔ 1. 12	
	✘ 2. 10	
	✘ 3. 8	
	✘ 4. 15	

Q.52	For a concave mirror, where is the centre of curvature located relative to the mirror?	
Ans	✔ 1. In front of the mirror	
	✘ 2. Behind the mirror	
	✘ 3. At the mirror's focal point	
	✘ 4. At the mirror's surface	

Q.53	What should come in place of the question mark (?) in the given series based on the English alphabetical order? TUR FGD RSP DEB ?	
Ans	✘ 1. NQP	
	✘ 2. NPQ	
	✘ 3. PNQ	
	✔ 4. PQN	

Q.54	The population of a town in 1927 was 232300. If its population increased in two successive decades by 30% in each decade, the population of the town in 1947 was:	
Ans	✘ 1. 392583	
	✘ 2. 392585	
	✘ 3. 392592	
	✔ 4. 392587	

Q.55	B, C, E, F and H have different heights. B is taller than C. Only E is shorter than F. H is taller than B. How many people are taller than C?	
Ans	✔ 1. Two	
	✘ 2. One	
	✘ 3. Four	
	✘ 4. Three	

Q.56	P is the daughter of Q's sister R. S is the wife of Q and T is the son of S. How is P related to T?	
Ans	✘ 1. Sister's daughter	
	✘ 2. Father's daughter	
	✘ 3. Father's mother	
	✔ 4. Father's sister's daughter	

Q.57	If the distance between A and B is 1253 Km. From A, Chaman goes to B with speed 93 km/h and return to A with the speed 95 km/h. Find the average speed of Chaman. (rounded off to two decimal place)	
Ans	✔ 1. 93.99 km/h	
	✘ 2. 90.46 km/h	
	✘ 3. 103.98 km/h	
	✘ 4. 94.47 km/h	

Q.58	What is the molecular formula of washing soda?
Ans	✖ 1. $NaHCO_3$
	✔ 2. $Na_2CO_3 \cdot 10H_2O$
	✖ 3. $NaCl$
	✖ 4. Na_2CO_3

Q.59	Which of the following is a primary reason why all multi-cellular organisms do not reproduce by fragmentation?
Ans	✖ 1. Their cells are loosely organised.
	✔ 2. They have specialised cells organised into tissues and organs.
	✖ 3. They are unicellular.
	✖ 4. They have a random arrangement of cells.

Q.60	If the object is placed beyond the center of curvature (C) in front of a concave mirror, the image formed will be _____.
Ans	✖ 1. virtual, upright and diminished
	✔ 2. real, inverted and diminished
	✖ 3. real, inverted and enlarged
	✖ 4. virtual, upright and enlarged

Q.61	The radius of the base of a right circular cone is 21 m and its curved surface area is 1914 m^2. Find the volume (in m^3) of the cone.
Ans	✖ 1. 9549
	✖ 2. 10250
	✔ 3. 9240
	✖ 4. 8549

Q.62	What should come in place of the question mark (?) in the given series based on the English alphabetical order? FMK HOM JQO LSQ ?
Ans	✖ 1. NVR
	✖ 2. NUR
	✔ 3. NUS
	✖ 4. NVS

Q.63	Correctly match the following Biosphere Reserves to their respective states. Biosphere Reserves States 1. Nokrek a. Meghalaya 2. Panna b. Madhya Pradesh 3. Manas c. Assam
Ans	✖ 1. 1-a, 2-c, 3-b
	✖ 2. 1-b, 2-a, 3-c
	✖ 3. 1-c, 2-b, 3-a
	✔ 4. 1-a, 2-b, 3-c

Q.64	P, Q, R, S, T and U are sitting around a circular table facing the centre. U sits third to the left of T. R sits second to the right of Q. Q is not the immediate neighbour of T. P is not the immediate neighbour of R. Who sits third to the left of Q?
Ans	✖ 1. P
	✖ 2. T
	✔ 3. S
	✖ 4. U

Q.65	KL91 is related to CD66 in a certain way. In the same way, MN81 is related to EF56. To which of the following is OP71 related, following the same logic?	
Ans	✗ 1. HG46	
	✗ 2. GH56	
	✗ 3. HG56	
	✓ 4. GH46	

Q.66	When a metal and sulphuric acid react with each other, metal displaces hydrogen, which is higher in the reactivity series. Identify the metal for which the bubbling of hydrogen gas will be the fastest.	
Ans	✗ 1. Iron	
	✗ 2. Zinc	
	✗ 3. Aluminium	
	✓ 4. Magnesium	

Q.67	What should come in place of the question mark (?) in the given series? 160 151 141 130 118 ?	
Ans	✓ 1. 105	
	✗ 2. 101	
	✗ 3. 95	
	✗ 4. 91	

Q.68	A shopkeeper lists the price of a fan at 25% above its cost price and offers a 10% discount on its list price. If he earns a profit of ₹117, then what is the list price (in ₹) of the fan?	
Ans	✗ 1. 1308	
	✓ 2. 1170	
	✗ 3. 1346	
	✗ 4. 896	

Q.69	Let O be the incentre of a triangle PQR and S be a point on the side QR such that OS⊥ QR. If ∠QOS = 15°, then ∠PQR =?	
Ans	✗ 1. 65°	
	✗ 2. 130°	
	✗ 3. 75°	
	✓ 4. 150°	

Q.70	Which of the following Articles of the Indian Constitution states that there shall be a Legislative Assembly for the National Capital Territory and the seats in such Assembly shall be filled by members chosen by direct election from territorial constituencies in the National Capital Territory?	
Ans	✓ 1. Article 239 AA	
	✗ 2. Article 239A	
	✗ 3. Article 239 B	
	✗ 4. Article 239 AB	

Q.71	What develops into fruit after fertilisation?	
Ans	✗ 1. Stigma	
	✗ 2. Style	
	✗ 3. Anther	
	✓ 4. Ovary	

Q.72	Refer to the following number, symbol series and answer the question. Counting to be done from left to right only.
	(Left) 3 8 9 5 £ 6 3 @ 3 % @ 7 * 1 # 2 6 9 2 7 & £ (Right)
	How many such symbols are there each of which is immediately preceded by a number and also immediately followed by a number?
Ans	✘ 1. 5
	✘ 2. 6
	✘ 3. 3
	✔ 4. 4

Q.73	Which of the following diseases can be prevented by using a mechanical barrier contraceptive method?
Ans	✘ 1. Malaria
	✔ 2. AIDS
	✘ 3. TB
	✘ 4. Typhoid

Q.74	Two sets of numbers are given below. In each set of numbers, certain mathematical operation(s) on the first number result(s) in the second number. Similarly, certain mathematical operation(s) on the second number result(s) in the third number and so on. Which of the given options follows the same set of operations as in the given sets? (NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into their constituent digits. E.g. 13 – Operations on 13 such as adding / subtracting /multiplying to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)
	12-60-120-130; 14-70-140-150
Ans	✘ 1. 13-65-130-120
	✘ 2. 15-75-150-140
	✔ 3. 16-80-160-170
	✘ 4. 11-55-110-130

Q.75	What is the pH of a solution containing significant concentrations of H^+ ions?
Ans	✘ 1. 7
	✘ 2. Greater than 7
	✔ 3. Less than 7
	✘ 4. Cannot be determined

Q.76	Shalini travels a distance of 270 km with speed of 54 km/h and 300 km with 30 km/h by her car. Find the average speed (in km/h) of Shalini.
Ans	✘ 1. 47
	✔ 2. 38
	✘ 3. 43
	✘ 4. 44

Q.77	What is one of the main attractions of 'Mamallapuram' apart from the dance festival?
Ans	✘ 1. Modern art galleries
	✔ 2. Architectural beauty of temples
	✘ 3. Wildlife sanctuaries
	✘ 4. Local handicrafts

Q.78	Find the HCF of 84, 126 and 210.
Ans	✔ 1. 42
	✘ 2. 14
	✘ 3. 70
	✘ 4. 21

Q.79	Which of the following is NOT a homologous series?
Ans	✔ 1. C_2H_4 , C_2H_6 , C_3H_6 , C_4H_8
	✘ 2. C_2H_2 , C_2H_4 , C_3H_6 , C_4H_8
	✘ 3. CH_4 , C_2H_6 , C_3H_8 , C_4H_{10}
	✘ 4. C_3H_7OH , C_4H_9OH , $C_5H_{11}OH$, $C_6H_{11}OH$

Q.80	Which status was conferred upon Shipping Corporation of India (SCI) by the Government of India in August 2008?
Ans	✔ 1. Navratna
	✘ 2. Miniratna
	✘ 3. Maharatna
	✘ 4. Dashratna

Q.81	Which of the following statements is true regarding the refractive index?
Ans	✘ 1. Refractive index of glass is less than 1.
	✔ 2. Refractive index of water is always greater than 1.
	✘ 3. Refractive index depends only on the speed of light in vacuum.
	✘ 4. Refractive index of a given medium is independent of the wavelength of the light.

Q.82	Simplify the given expression. $(\sin A + \operatorname{cosec} A)^2 + (\cos A - \sec A)^2 + 3$
Ans	✘ 1. $1 + \tan^2 A + \cot^2 A$
	✘ 2. $\tan^2 A + \cot^2 A$
	✘ 3. $3 + \tan^2 A + \cot^2 A$
	✔ 4. $6 + \tan^2 A + \cot^2 A$

Q.83	In a certain code, 'red blue green' is coded as 'dy ph mt', 'blue violet black' is coded as 'lp ph st' and 'black red white' is coded as 'st bq dy'. All the codes are two-letter codes only. What is white coded as?
Ans	✘ 1. dy
	✔ 2. bq
	✘ 3. ph
	✘ 4. st

Q.84	A question is given, followed by two statements labelled I and II. Identify which of the statements is/are sufficient to answer the question. Q. A, B, C, D and E are sitting in a straight line facing north. Who sits on the extreme left end? (I) A sits fourth to the right of E. (II) Exactly 1 person sits between B and C.	
Ans	✔ 1. Data in Statement I alone is sufficient to answer the question, while data in Statement II is not.	
	✘ 2. Both Statements I and II put together are not sufficient to answer the question.	
	✘ 3. Both Statements I and II put together (and not independently) are sufficient to answer the question.	
	✘ 4. Data in Statement II alone is sufficient to answer the question, while data in Statement I is not.	

Q.85	If the refractive index of water is 1.33, then the speed of light in water is approximately _____.	
Ans	✔ 1. 2.26×10^8 m/s	
	✘ 2. 1.5×10^8 m/s	
	✘ 3. 4×10^8 m/s	
	✘ 4. 3×10^8 m/s	

Q.86	A double displacement reaction typically involves the exchange of:	
Ans	✘ 1. neutrons	
	✘ 2. protons	
	✘ 3. electrons	
	✔ 4. ions	

Q.87	A man sold an article for ₹533 by first giving a d% discount on its marked price, and then another discount having the same nominal value (in ₹). If the marked price of the article is ₹1025, then what is the value of d?	
Ans	✘ 1. 22	
	✔ 2. 24	
	✘ 3. 29	
	✘ 4. 21	

Q.88	35 men can do a piece of work in 48 days. The number of men required to complete the same work in 21 days is:	
Ans	✘ 1. 72	
	✔ 2. 80	
	✘ 3. 77	
	✘ 4. 79	

Q.89	Which of the following Ministries launched the electric mobility promotion scheme in March 2024 to provide short term support to Electric Vehicles?	
Ans	✔ 1. Ministry of Heavy Industries	
	✘ 2. Ministry of Corporate Affairs	
	✘ 3. Ministry of Environment, Forest and Climate Change	
	✘ 4. Ministry of Road Transport and Highways	

Q.90	Which of the following letter-clusters should replace # and % so that the pattern and relationship followed between the letter-cluster pair on the left side of :: is the same as that on the right side of ::?
	# : DGJ :: EHK : %
Ans	✗ 1. # = MZC, % = LOR
	✗ 2. # = WZC, % = LOP
	✔ 3. # = WZC, % = LOR
	✗ 4. # = WXC, % = LOR

Q.91	Amit purchased 10 kg of rice at the rate of ₹35 per kg and 39 kg of rice at ₹44 per kg. He sold the mixture at the rate of ₹42 per kg. Find his loss (in ₹).
Ans	✔ 1. 8
	✗ 2. 3
	✗ 3. 13
	✗ 4. 16

Q.92	If the resistance in a circuit is increased while the voltage remains constant, the current will _____.
Ans	✔ 1. decrease
	✗ 2. increase
	✗ 3. double
	✗ 4. remain constant

Q.93	Besides being a barrier method of contraception, condoms also serve which of the following purposes?
Ans	✔ 1. Prevent transmission of STDs such as gonorrhoea
	✗ 2. Help in transmission of STDs such as gonorrhoea
	✗ 3. Prevent diseases that spread through skin-to-skin contact
	✗ 4. Decrease sexual desire

Q.94	15 is related to 35 following a certain logic. Following the same logic, 21 is related to 49. To which of the given options is 27 related, following the same logic?
	(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into their constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)
Ans	✔ 1. 63
	✗ 2. 69
	✗ 3. 65
	✗ 4. 51

Q.95	If 'A' stands for '÷', 'B' stands for 'x', 'C' stands for '+' and 'D' stands for '-', then what will be come in place of the question mark (?) in the following equation?
	30 C 48 D 36 B 50 A 20 = ?
Ans	✗ 1. −10
	✔ 2. −12
	✗ 3. −11
	✗ 4. −14

Q.96	The sum of the ages of Ram and Ramesh is 48 years. Four years ago the age of Ram was three times the age of Ramesh. What will be the age of Ramesh five years from now?
Ans	✗ 1. 14 years
	✗ 2. 21 years
	✔ 3. 19 years
	✗ 4. 18 years

Q.97	What is the difference between baking powder and baking soda?
Ans	✗ 1. Baking soda is a mixture of baking powder and tartaric acid.
	✔ 2. Baking powder is a mixture of baking soda and tartaric acid.
	✗ 3. Baking powder is a mixture of baking soda and hydrochloric acid.
	✗ 4. Baking soda is a mixture of baking powder and hydrochloric acid.

Q.98	Mendel studied traits such as flower colour and seed shape in pea plants. These traits are called as:
Ans	✔ 1. visible characters
	✗ 2. progeny units
	✗ 3. dominant characteristics
	✗ 4. genetic codes

Q.99	A wire of given material having length L and area of cross-section A has a resistance of 4 Ω. The resistance of another wire of the same material having length L/2 will be:
Ans	✗ 1. 8 Ω
	✗ 2. 4 Ω
	✗ 3. 1 Ω
	✔ 4. 2 Ω

Q.100	Two taps can fill a cistern in 2 hours and 53 hours respectively. A third tap can empty it in 53 hours. How long (in hours) will it take to fill the empty cistern, if all of them are opened together?
Ans	✔ 1. 2
	✗ 2. 3
	✗ 3. 4
	✗ 4. 5

2024/12/20-03:56:08

Test Date	17/12/2024
Test Time	4:30 PM - 6:00 PM
Subject	RRB JE DMS CMA CS MS

* Note
Correct Answer will carry 1 mark per Question.
Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.
2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : RRB JE, DMS, CMA, CS, MS CBT-1

Q.1 **Which scientist(s) established the laws of Inheritance?**
Ans
✗ 1. Watson and Crick
✗ 2. Charles Darwin
✓ 3. Gregor Johann Mendel
✗ 4. Thomas Hunt Morgan

Q.2 Find the value of $1.356 + 4.25 \times 8 - 3.562 \times 6 + 7.5 \times 4$.
Ans
✗ 1. 41.625
✗ 2. 42.237
✗ 3. 43.012
✓ 4. 43.984

Q.3 **What should come in place of the question mark (?) in the given series?**
86 78 64 56 42 34 ?
Ans
✓ 1. 20
✗ 2. 22
✗ 3. 26
✗ 4. 28

Q.4 What is the mean of the following distribution?

Marks	13	23	51	61	96
No. of Students	51	34	62	87	17

Ans
✓ 1. 46
✗ 2. 72
✗ 3. 37
✗ 4. 34

Q.5 A tube like structure grows down from the pollen grain to the style and reaches the ovule. This pollen tube is responsible for:

Ans ✗ 1. carrying oxygen to the female germ cell in the ovary

✗ 2. carrying nutrition to the female germ cell in the ovary

✓ 3. carrying the male germ cell to the female germ cell in the ovary

✗ 4. carrying carbon dioxide to the female germ cell in the ovary

Q.6 A trader lost 10% by selling a shirt for ₹840. He will gain x%' by selling it for ₹1540, the value of x is:

Ans ✗ 1. 75

✗ 2. 55

✗ 3. 80

✓ 4. 65

Q.7 Select the letter-cluster from among the given options that can replace the question mark (?) in the following series.

CYU XTP SOK NJF ?

Ans ✗ 1. ERT

✓ 2. IEA

✗ 3. IAI

✗ 4. EAI

Q.8 When an aqueous solution of potassium iodide reacts with lead nitrate, what type of product is formed?

Ans ✗ 1. Sodium nitrate

✗ 2. Lead nitrate

✗ 3. Lead chloride

✓ 4. Lead iodide (precipitate)

Q.9 In which of the following cases did the Supreme Court of India enunciate the 'Doctrine of Basic Structure'?

Ans ✗ 1. Menka Gandhi case

✗ 2. Golaknath case

✓ 3. Keshvanand Bharti case

✗ 4. AK Gopalan case

Q.10 Which of the following is NOT a method of pollination?

Ans ✗ 1. Self-pollination

✗ 2. Water pollination

✓ 3. Asexual pollination

✗ 4. Wind pollination

Q.11 Anamika travels a distance of 183 km with speed of 61 km/h and 225 km with 45 km/h by her car. Find the average speed (in km/h) of Anamika.

Ans ✗ 1. 54

✗ 2. 59

✓ 3. 51

✗ 4. 56

Q.12 A and B can do a piece of work in 4 days and 46 days, respectively. The number of days [Correct to one decimal place] required to complete the work if both A and B work together is:

Ans ✗ 1. 6.9

✗ 2. 5.5

✓ 3. 3.6

✗ 4. 6.8

Q.13 Which team clinched the Irani Cup title for the season 2024-25?

Ans ✓ 1. Mumbai

✗ 2. Railways

✗ 3. Karnataka

✗ 4. Rest of India

Q.14 Select the letter-cluster pair that best represents a similar relationship to the one expressed in the pairs of letter-clusters given below.

WJT : ZNO
KAK : NEF

Ans ✓ 1. NKH : QOC

✗ 2. LBL : OEG

✗ 3. TFV : WJR

✗ 4. MTK : PXG

Q.15 Mayank starts from Point A and drives 18 km towards east. He then takes a right turn, drives 19 km, turns right and drives 21 km. He then takes a right turn and drives 25 km. He takes a final right turn, drives 3 km and stops at Point P. How far (shortest distance) and towards which direction should he drive in order to reach Point A again? (All turns are 90° turns only unless specified.)

Ans ✗ 1. 4 km to the south

✗ 2. 5 km to the south

✓ 3. 6 km to the south

✗ 4. 8 km to the south

Q.16 ₹3300 were divided among P, Q and R, such that 4 times of P = 7 times of Q = 2 times of R. Find the share of R.

Ans ✗ 1. ₹2024

✗ 2. ₹2028

✗ 3. ₹2046

✓ 4. ₹1848

Q.17 The angle of elevation of a tower from a point which is at a distance of 44 m from it's foot is $60°$. Find the height of the tower. (use $\sqrt{3} = 1.73$)

Ans ✓ 1. 76.12 m

✗ 2. 48 m

✗ 3. 68 m

✗ 4. 56.37 m

Q.18 In a certain code language,
'actor singer dancer' is coded as 'ma ph st',
'dancer doctor engineer' is coded as 'cd le ma' and
'engineer actor cricketer' is coded as 'st bq cd'.
(All the codes are two-letter codes only.)
What is the code for 'actor' in that lanuage?

Ans
✅ 1. st

❌ 2. bq

❌ 3. ma

❌ 4. cd

Q.19 Oxidation of metals in the presence of acids or moisture is called:

Ans
✅ 1. corrosion

❌ 2. neutralisation

❌ 3. rancidity

❌ 4. rusting

Q.20 Who among the following was the ruler of Gujarat when Humayun attacked the kingdom in 1532?

Ans
❌ 1. Sikandar Shah

❌ 2. Zafar Khan Muzaffar

❌ 3. Muzaffar Shah II

✅ 4. Bahadur Shah

Q.21 The average age of 40 boys in a class is 18 years. One boy, aged 26 years left the class, and two new boys joined the class. If the average age of all boys now in the class remains 18 years, then find the average age of the two newcomers.

Ans
❌ 1. 21 years

❌ 2. 20 years

✅ 3. 22 years

❌ 4. 24 years

Q.22 What will come in the place of the question mark (?) in the following equation, if '+' and '−' are interchanged and '×' and '÷' are interchanged?

$11 + 37 − 5 × 40 ÷ 24 = ?$

Ans
❌ 1. −22

❌ 2. −25

❌ 3. −21

✅ 4. −23

Q.23 Two sets of numbers are given below. In each set of numbers, certain mathematical operation(s) on the first number result(s) in the second number. Similarly, certain mathematical operation(s) on the second number result(s) in the third number and so on. Which of the given options follows the same set of operations as in the given sets? (NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into their constituent digits. E.g. 13 – Operations on 13 such as adding / subtracting /multiplying to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

6-18-72-102; 8-20-80-110

Ans
❌ 1. 9-21-84-94

❌ 2. 4-16-64-84

✅ 3. 7-19-76-106

❌ 4. 11-22-88-116

Q.24 In which year was 'Heirloom Treasures: The Cultural Tapestry of India: A Compilation of Selected Articles from India Beckons: Volume 1,' by Arunima Hoskote, published?

Ans ✗ 1. 2019

✗ 2. 2021

✗ 3. 2018

✓ 4. 2020

Q.25 Seven boxes, I, J, K, L, W, X and Y, are kept one over the other but not necessarily in the same order. Only K is kept above W. Only two boxes are kept between W and J. Only L is kept below I. J is not kept immediately below Y. How many boxes are kept between X and L?

Ans ✗ 1. Three

✗ 2. One

✗ 3. Four

✓ 4. Two

Q.26 Evaluate: 32 ÷ 12 × 3 - 2 × 4

Ans ✓ 1. 0

✗ 2. 3

✗ 3. -1

✗ 4. 2

Q.27 What is the purpose of using devices like Copper-T in family planning?

Ans ✓ 1. To prevent fertilised eggs from implanting in the uterus

✗ 2. To block sperm transfer in males

✗ 3. To act as a physical barrier to sperm

✗ 4. To alter hormonal levels in women

Q.28 Yeast reproduces through which asexual mode of reproduction?

Ans ✓ 1. Budding

✗ 2. Vegetative propagation

✗ 3. Fusion

✗ 4. Fission

Q.29 What is the name of the famous temple complex in Tamil Nadu, known for its Dravidian architecture and 1,000-pillar hall?

Ans ✗ 1. Kanchipuram Temple

✗ 2. Jagannath Temple

✗ 3. Brihadeeswarar Temple

✓ 4. Meenakshi Temple

Q.30 Which of the following steps is the first step in balancing a chemical equation?

Ans ✗ 1. Balancing oxygen atoms

✗ 2. Adding coefficients randomly

✗ 3. Balancing hydrogen atoms

✓ 4. Writing the skeleton equation

Q.31 What is the median of the following data?
17, 54, 51, 64, 13, 39, 23, 40, 78, 66, 96

Ans ✗ 1. 52

✗ 2. 51.5

✗ 3. 50.5

✓ 4. 51

Q.32 What is the angle formed between two lateral faces of a triangular glass prism called?

Ans ✗ 1. Angle of refraction

✗ 2. Angle of incidence

✓ 3. Angle of the prism

✗ 4. Angle of deviation

Q.33 Among five people named A, B, C, D and E, each has a certain age. C is twice the age of A. A is three times the age of D. D is one fifth the age of B. The age of B is 45. If E is equal the age of C, what is the age of E?

Ans ✗ 1. 52

✗ 2. 58

✓ 3. 54

✗ 4. 56

Q.34 If x is inversely proportional to y, and y = 5 when x = 2, find the value of x, when y = 41.

Ans ✗ 1. $\dfrac{11}{42}$

✓ 2. $\dfrac{10}{41}$

✗ 3. $\dfrac{10}{42}$

✗ 4. $\dfrac{12}{44}$

Q.35 Contraception is one of the main goals of which health care programme?

Ans ✗ 1. Mental Health Programme

✓ 2. Reproductive Health Programme

✗ 3. Indradhanush Immunisation Programme

✗ 4. Pulse Polio Programme

Q.36 Based on the English alphabetical order, three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which letter-cluster pair DOES NOT belong to that group? (Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

Ans ✗ 1. CM-JL

✓ 2. LV-TU

✗ 3. GQ-NP

✗ 4. OY-VX

Q.37 If two parallel lines are cut by a transversal, and one pair of the corresponding angles formed are $(x+30)°$ and $(2x-10)°$, then find the value of x.

Ans ✗ 1. 30

✗ 2. 45

✗ 3. 35

✓ 4. 40

Q.38 The measure of how much a material resists the flow of charges is known as:

Ans ✓ 1. resistivity

✗ 2. potential difference

✗ 3. current

✗ 4. power generated

Q.39 Find the simple interest (in closest integral ₹) on ₹4000 at 5.25% per annum rate of interest for the period from 3 February 2024 to 4 April 2024

Ans
✗ 1. 33

✓ 2. 35

✗ 3. 34

✗ 4. 36

Q.40 The population of a town in 1974 was 222900. If its population increased in two successive decades by 50% in each decade, the population of the town in 1994 was:

Ans
✓ 1. 501525

✗ 2. 501521

✗ 3. 501520

✗ 4. 501526

Q.41 In a convex mirror, the principal focus is located _____.

Ans
✗ 1. at the pole of the mirror

✓ 2. behind the mirror

✗ 3. at the centre of curvature

✗ 4. in front of the mirror

Q.42 Based on the English alphabetical order, three of the following four are alike in a certain way and thus form a group. Which is the one that DOES NOT belong to that group?
(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

Ans
✗ 1. OSR

✗ 2. HLK

✓ 3. DGF

✗ 4. SWV

Q.43 Which of the following letter-clusters should replace # and % so that the pattern and relationship followed between the letter-cluster pair on the left side of :: is the same as that on the right side of ::?

 # : GJM :: FIL : %

Ans
✗ 1. # = XAD, % = MRU

✗ 2. # = XAD, % = ORP

✗ 3. # = YAD, % = ORU

✓ 4. # = XAD, % = ORU

Q.44 The average price of three items of furniture is Rs 15765. If their prices are in the ratio 3:5:7, the price of the costliest item (in Rs) is

Ans
✓ 1. 22071

✗ 2. 7357

✗ 3. 3153

✗ 4. 5255

Q.45 What should come in place of the question mark (?) in the given series?

68 76 86 98 112 ?

Ans
✗ 1. 122

✗ 2. 125

✓ 3. 128

✗ 4. 132

Q.46 A man sold an article for ₹687 by first giving a d% discount on its marked price, and then another discount having the same nominal value (in ₹). If the marked price of the article is ₹1145, then what is the value of d?

Ans ✗ 1. 19

✗ 2. 16

✔ 3. 20

✗ 4. 23

Q.47 When Plaster of Paris is mixed with water, it undergoes which of the following changes?

Ans ✗ 1. It loses all its water molecules.

✗ 2. It produces a gas.

✔ 3. It changes to gypsum.

✗ 4. It dissolves completely.

Q.48 AB and CD are parallel straight lines and HI is the transversal intersecting AB at E and CD at F. G is a point between the lines AB and CD but not on HI, such that m∠EGF = 65°. If $\frac{2}{5} \times$ m∠BEG = $\frac{3}{5} \times$ m∠DFG, and m∠DFG = $\frac{1}{3} \times$ m∠DFE, what is the measure of ∠FEG?

Ans ✗ 1. 62°

✗ 2. 52°

✔ 3. 63°

✗ 4. 69°

Q.49 The first President of the Indian National Congress was _____.

Ans ✗ 1. Ras Behari Bose

✗ 2. Dada Bhai Naoroji

✔ 3. Womesh Chandra Banerjee

✗ 4. Gopal Krishna Gokhale

Q.50 Which of the following statements are correct with respect to Arunachal Himalaya?
Statement 1: These extend from the east of the Bhutan Himalayas up to the Diphu pass in the east.
Statement 2: The general direction of the mountain range is from southwest to northeast.
Statement 3: Some of the important mountain peaks of the region are K2 and Annapurna.
Statement 4: These ranges are dissected by fast-flowing rivers from the north to the south, forming deep gorges.

Ans ✔ 1. Statements 1, 2 and 4 are correct.

✗ 2. Statements 2, 3 and 4 are correct.

✗ 3. Only statements 2 and 3 are correct.

✗ 4. Statements 1, 2 and 3 are correct.

Q.51 What will come in the place of the question mark (?) in the following equation if '÷' and '−' are interchanged and '+' and '×' are interchanged?

17 + 9 − 3 × 3 ÷ 7 = ?

Ans ✔ 1. 47

✗ 2. 43

✗ 3. 49

✗ 4. 40

Q.52 A trader claims to sell rice at a profit of 74%, but also dishonestly uses a weight which is 9% less than what is mentioned on it. Find the total percentage of profit earned by the trader. (Round the answer to the nearest whole number.)

Ans ✗ 1. 87%

✓ 2. 91%

✗ 3. 89%

✗ 4. 94%

Q.53 Pooja and Ritu invest in a business in the ratio 4 : 1. If total profit is Rs. 1480, then what is difference between the profit (in Rs.) of Pooja and Ritu?

Ans ✗ 1. 788

✗ 2. 988

✓ 3. 888

✗ 4. 938

Q.54 In a certain code, 'copy book pencil' is coded as 'fd rl sg', 'pencil crayon eraser' is coded as 'bz xw rl', and 'crayon copy pen' is coded as 'xw sg xo'.What is the code for 'book' in that language?

(Note: All the codes are two letter coded only.)

Ans ✗ 1. rl

✗ 2. xo

✓ 3. fd

✗ 4. sg

Q.55 A question is followed by two statements numbered (I) and (II). You have to decide whether the data provided in the statements are sufficient to answer the question. Read both the statements and select the most appropriate answer.

Question:
Five boxes, V, W, X, Y and Z, have different weights. Which box among them is the second heaviest?

Statements:
(I) Y is heavier than W. Only three boxes are lighter than Z.
(II) X is heavier than W. X is heavier than V.

Ans ✗ 1. Data in statement II alone is sufficient to answer the question while data in statement I is not.

✗ 2. Data in statements I and II together are sufficient to answer the question.

✓ 3. Data in statement I alone is sufficient to answer the question while data in statement II is not.

✗ 4. Data in statements I and II together are not sufficient to answer the question.

Q.56 A number when increased by 50 %', gives 3120. The number is:

Ans ✗ 1. 1040

✗ 2. 6240

✓ 3. 2080

✗ 4. 4160

Q.57 What happens when zinc (Zn) reacts with hydrochloric acid (HCl)?

Ans ✗ 1. Both Zinc and Hydrogen are oxidised.

✗ 2. Zinc is reduced.

✓ 3. Zinc is oxidised.

✗ 4. Hydrogen is oxidised.

Q.58 Find the cost (in ₹) of digging a cuboidal pit 9 m long, 5 m broad and 4 m deep at the rate of ₹20 per m³.

Ans ✗ 1. 3,900

✗ 2. 3,800

✗ 3. 3,700

✓ 4. 3,600

Q.59 The Indian Constitution guarantees Fundamental Rights to its citizens under which of the following Articles?

Ans ✗ 1. Only Articles 15 to 35

✗ 2. Only Articles 14 to 32

✗ 3. Only Articles 12 to 30

✓ 4. Only Articles 12 to 35

Q.60 The LCM of two numbers is seven times of their HCF. If the product of two numbers is 448, then find the difference between LCM and HCF.

Ans ✓ 1. 48

✗ 2. 54

✗ 3. 42

✗ 4. 30

Q.61 Which of the following is correct with regard to resistances in a series circuit?

Ans ✓ 1. Total resistance is equal to the sum of all individual resistances.

✗ 2. Total resistance is less than any individual resistance.

✗ 3. Total resistance is equal to the product of all resistances.

✗ 4. Total resistance is inversely proportional to each resistance.

Q.62
Which of the following factors is primarily responsible for survival of species?

Ans ✗ 1. Temperature

✗ 2. Niche

✓ 3. Variations

✗ 4. Mutation

Q.63 Which of the following materials will have the least resistance at room temperature?

Ans ✗ 1. Iron

✗ 2. Aluminum

✗ 3. Nichrome

✓ 4. Copper

Q.64 At which of the following points does each firm employ labour?

Ans ✗ 1. Each firm employs labour up to the point where the marginal revenue product of labour multiplies the wage rate.

✗ 2. Each firm employs labour up to the point where the marginal cost of labour equals the wage rate.

✗ 3. Each firm employs labour up to the point where the marginal revenue product of labour minus the wage rate.

✓ 4. Each firm employs labour up to the point where the marginal revenue product of labour equals the wage rate.

Q.65 Rose flower pollen has reached Sunflower stigma through pollination. The pollen will be rejected by the stigma because:

Ans
❌ 1. pollen has nothing to do with stigma

❌ 2. stigma has nothing to do with pollen

✅ 3. pollen was not of sunflower

❌ 4. pollen was of rose flower

Q.66 Which Article of the Indian Constitution permits the Supreme Court to review its judgement or order?

Ans
❌ 1. Article 132

❌ 2. Article 135

✅ 3. Article 137

❌ 4. Article 138

Q.67 What was the venue of the 13th Ministerial Conference of the World Trade Organization in 2024?

Ans
✅ 1. Abu Dhabi, United Arab Emirates

❌ 2. New Delhi, India

❌ 3. London, England

❌ 4. Paris, France

Q.68 What should come in place of the question mark (?) in the given series based on the English alphabetical order?

FDW LJC RPI XVO ?

Ans
✅ 1. DBU

❌ 2. DUB

❌ 3. BDU

❌ 4. BUD

Q.69 The solution of the system of the given linear equations is:

2x + 3y − z = 5, x − 2y + 4z = −2, 3x + y + 2z = 7

Ans
❌ 1. $x = \dfrac{-44}{7}, y = \dfrac{27}{7}, z = -4$

❌ 2. $x = \dfrac{-44}{7}, y = \dfrac{-27}{7}, z = 4$

✅ 3. $x = \dfrac{44}{7}, y = \dfrac{-27}{7}, z = -4$

❌ 4. $x = \dfrac{44}{7}, y = \dfrac{-27}{7}, z = -8$

Q.70 What is the name (acronym) of the software developed by ISRO, through its Vikram Sarabhai Space Centre (VSSC), a Computational Fluid Dynamics (CFD) tool aimed at facilitating aerodynamic design and analysis for aerospace vehicles?

Ans
❌ 1. PraNaMa

❌ 2. PraViNa

✅ 3. PraVaHa

❌ 4. PraYoGa

Q.71 Select the option in which the numbers share the same relationship as that shared by the given pairs of numbers.
(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

185, 113
170, 98

Ans ✘ 1. 165, 103

✘ 2. 112, 50

✔ 3. 146, 74

✘ 4. 136, 62

Q.72 Which of the following is an example of a decomposition reaction that occurs due to the application of electric current?

Ans ✘ 1. Heating calcium carbonate

✘ 2. Decomposition of potassium permanganate by heat

✘ 3. Decomposition of sodium bicarbonate by heat

✔ 4. Electrolysis of water

Q.73 Which of the following options is INCORRECT with relation to the given statement?

The magnetic field lines of a bar magnet may be drawn using:

Ans ✘ 1. iron filings

✘ 2. a magnetic compass

✔ 3. wood particles

✘ 4. another bar magnet

Q.74 What is the difference between the hypotenuse and the base of an isosceles right triangle that has an area of 392 m^2 (use $\sqrt{2} = 1.4$)?

Ans ✘ 1. 11.9 m

✘ 2. 10.9 m

✔ 3. 11.2 m

✘ 4. 12.4 m

Q.75 If the distance between A and B is 1089 Km. From A, Vishal goes to B with speed 104 km/h and return to A with the speed 125 km/h. Find the average speed of Vishal.
(rounded off to two decimal place)

Ans ✘ 1. 111.79 km/h

✔ 2. 113.54 km/h

✘ 3. 117.44 km/h

✘ 4. 120.89 km/h

Q.76 Read the given statements and conclusions carefully. Assuming that the information given in the statements is true, even if it appears to be at variance with commonly known facts, decide which of the given conclusion(s) logically follow(s) from the statements.

Statements: All hens are juices. Some juices are nests. All pins are nests.

Conclusions:
(I): Some pins are hens.
(II): Some pins are juices

Ans ✔ 1. Neither conclusion (I) nor (II) follows.

✘ 2. Only conclusion (II) follows.

✘ 3. Only conclusion (I) follows.

✘ 4. Both conclusions (I) and (II) follow.

Q.77 How can you experimentally determine the focal length of a concave mirror?

Ans ✗ 1. Measure the angle of reflection.

✗ 2. Measure the diameter of the mirror.

✓ 3. Measure the distance between the mirror and the image of a distant object formed by it.

✗ 4. Measure the distance between the pole and the centre of curvature.

Q.78 India has reduced the windfall tax on crude oil to ₹_____ per metric tonne from ₹4,600, effective 17 August 2024.

Ans ✓ 1. 2,100

✗ 2. 1,800

✗ 3. 3,600

✗ 4. 2,600

Q.79 YT21 is related to TO19 in a certain way based on the English alphabetical order. In the same way, PL17 is related to KG15. To which of the following is KF13 related, following the same logic?
(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into their constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

Ans ✗ 1. FO11

✗ 2. AE11

✗ 3. FT17

✓ 4. FA11

Q.80 What is the unit of electric power commonly used to measure household energy consumption?

Ans ✓ 1. Kilowatt-hours

✗ 2. Amperes

✗ 3. Joules

✗ 4. Watts

Q.81 What is the average of all the natural numbers from 1 to 97?

Ans ✗ 1. 48.5

✓ 2. 49

✗ 3. 50

✗ 4. 49.5

Q.82 Refer to the given number, symbol series and answer the question that follows.
Counting to be done from left to right only.
(Left) 6 # 1 * 8 & 7 & 5 4 Ω 3 % 9 6 @ 2 $ 9 £ 3 (Right)
How many such symbols are there each of which is immediately preceded by an odd number but NOT immediately followed by an even number?

Ans ✗ 1. Four

✗ 2. Two

✓ 3. One

✗ 4. Three

Q.83 A car rental company rents small cars at $50 per day and large cars at $80 per day. If a total of 13 cars were rented for $920 in one day, how many large cars were rented?

Ans ✗ 1. 4

✓ 2. 9

✗ 3. 6

✗ 4. 11

Q.84 If the resistance of a conductor is doubled while the current remains the same, how will the heat produced per unit time change?

Ans ✗ 1. It will be halved.

 ✗ 2. It will remain the same.

 ✗ 3. It will quadruple.

 ✓ 4. It will double.

Q.85 $\dfrac{(a^9 \times b^3 \times c^6)}{(a^{10} \times b^6 \times c^3)}$ in simplified form is:

Ans ✗ 1. $(a^1) \times (b^6) \times (c^{-9})$

 ✗ 2. $(a^1) \times (b^1) \times (c^5)$

 ✗ 3. $(a^{-7}) \times (b^{-9}) \times (c^4)$

 ✓ 4. $(a^{-1}) \times (b^{-3}) \times (c^3)$

Q.86 Refer to the following number and symbol series and answer the question that follows.
(Counting to be done from left to right only.)
(Left) 2 @ 4 + = 3 1 # 3 @ $ 9 8 * 9 4 2 8 7 6 5 (Right)
How many such symbols are there, each of which is immediately preceded by and also immediately followed by a number?

Ans ✓ 1. Three

 ✗ 2. Two

 ✗ 3. One

 ✗ 4. Four

Q.87 Where does the image form when an object is positioned at the centre of curvature of a concave mirror?

Ans ✓ 1. At the centre of curvature

 ✗ 2. At the pole

 ✗ 3. At infinity

 ✗ 4. At the focal point

Q.88 What is the role of chlorine gas in the preparation of bleaching powder?

Ans ✓ 1. It reacts with dry slaked lime to form bleaching powder.

 ✗ 2. It reacts with water to produce hydrogen peroxide.

 ✗ 3. It is used as a catalyst for the reaction.

 ✗ 4. It is used to neutralise calcium hydroxide.

Q.89 NATO will establish a new land command in _____ near the Russian border in 2025 to oversee northern European land operations during potential conflicts.

Ans ✓ 1. Finland

 ✗ 2. Ukraine

 ✗ 3. Turkmenistan

 ✗ 4. Kyrgyzstan

Q.90 Suman invested a sum of ₹3500 at 20% per annum compound interest, componded annually. If she received an amount of ₹6048 after n years, the value of n is:

Ans ✓ 1. 3

 ✗ 2. 2.6

 ✗ 3. 4

 ✗ 4. 2

Q.91 Two taps can fill a cistern in 2 hours and 46 hours respectively. A third tap can empty it in 46 hours. How long (in hours) will it take to fill the empty cistern, if all of them are opened together?

Ans
- ✅ 1. 2
- ❌ 2. 4
- ❌ 3. 3
- ❌ 4. 5

Q.92 In a certain code language,
'A + B' means 'A is the son of B',
'A − B' means 'A is the brother of B',
'A × B' means 'A is the wife of B' and
'A ÷ B' means 'A is the father of B'.

How is S related to H if 'S − D + F ÷ G × H'?

Ans
- ❌ 1. Wife's Father
- ✅ 2. Wife's Brother
- ❌ 3. Father
- ❌ 4. Brother

Q.93 A, B, C, D, E and F live on six different floors of the same building. The lowermost floor in the building is numbered 1, the floor above it is numbered 2 and so on, till the topmost floor is numbered 6.
Only four people live between D and F. C lives on an even numbered floor but not on floor number 2. E lives immediately below A but above D.
How many people live below B?

Ans
- ❌ 1. Two
- ❌ 2. One
- ✅ 3. Four
- ❌ 4. Three

Q.94 The pH of acid rain is:

Ans
- ❌ 1. more than 7
- ❌ 2. more than 5.6 but less than 7
- ✅ 3. less than 5.6
- ❌ 4. equal to 7

Q.95 As the concentration of hydronium ions increases, the pH value _____.

Ans
- ❌ 1. increases
- ✅ 2. decreases
- ❌ 3. decreases and then increases
- ❌ 4. remains the same

Q.96 Which part of the Bryophyllum plant develops new plants via vegetative propagation?

Ans
- ❌ 1. Roots
- ✅ 2. Leaves
- ❌ 3. Flowers
- ❌ 4. Stems

Q.97 Leishmania reproduces by:

Ans
- ✅ 1. binary fission in a definite plane
- ❌ 2. binary fission in two equal halves
- ❌ 3. binary fission in only vertical planes
- ❌ 4. binary fission in any plane

Q.98 **A homologous series is a group of organic compounds that have:**

Ans ✗ 1. the same molecular formula

✗ 2. no relation to each other

✗ 3. the same structural formula

✓ 4. the same functional group but differ by a CH_2 group

Q.99 **Which of the following waterways is located on the Tapi river?**

Ans ✗ 1. NW-1

✓ 2. NW-100

✗ 3. NW-10

✗ 4. NW-91

Q.100 **O, P, Q, R, S and T are sitting around a circular table facing the centre. P sits second to the left of T. Q is the immediate neighbour of P and R. S is not the immediate neighbour of R. Who sits to the immediate left of R?**

Ans ✗ 1. S

✗ 2. Q

✓ 3. O

✗ 4. T

2024/12/20-08:27:08

Test Date	18/12/2024
Test Time	9:00 AM - 10:30 AM
Subject	RRB JE DMS CMA CS MS

* Note
Correct Answer will carry 1 mark per Question.
Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.
2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : **RRB JE, DMS, CMA, CS, MS CBT-1**

Q.1 Write the expanded form of $(6a + 2b + 7c)^2$.

Ans
✘ 1. $36a^2 + 4b^2 + 49c^2 + 28ab + 28bc + 84ac$

✘ 2. $36a^2 + 4b^2 + 49c^2 + 24ab + 28bc + 94ac$

✘ 3. $36a^2 + 4b^2 + 49c^2 + 24ab + 23bc + 84ac$

✔ 4. $36a^2 + 4b^2 + 49c^2 + 24ab + 28bc + 84ac$

Q.2 What will come in the place of the question mark (?) in the following equation, if '+' and '−' are interchanged and '×' and '÷' are interchanged?

$34 ÷ 33 × 22 + 19 − 40 = ?$

Ans
✘ 1. 74

✔ 2. 72

✘ 3. 73

✘ 4. 70

Q.3 Two sets of numbers are given below. In each set of numbers, certain mathematical operation(s) on the first number result(s) in the second number. Similarly, certain mathematical operation(s) on the second number result(s) in the third number and so on. Which of the given options follows the same set of operations as in the given sets? (NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into their constituent digits. E.g. 13 – Operations on 13 such as adding / subtracting /multiplying to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

19-57-114-134; 21-63-126-146

Ans
✘ 1. 18-54-108-118

✘ 2. 17-51-102-112

✘ 3. 20-60-120-180

✔ 4. 16-48-96-116

Q.4	Tapan starts from Point A and drives 8 km towards the south. He then takes a right turn, drives 5 km, turns right and drives 12 km. He then takes a right turn and drives 9 km. He takes a final right turn, drives 4 km and stops at Point P. How far (shortest distance) and towards which direction should he drive in order to reach Point A again? (All turns are 90° turns only unless specified.)
Ans	✔️ 1. 4 km to the west
	❌ 2. 7 km to the west
	❌ 3. 5 km to the west
	❌ 4. 6 km to the west

Q.5	Which of the following statements is/are correct? 1) Nari Shakti Vandan Adhiniyam was introduced in 2023. 2) Nari Shakti Vandan Adhiniyam ensures 33% reserved seats for women in the Parliament, Legislative Assemblies and Delhi Assembly. 3) Nari Shakti Vandan Adhiniyam will be in force for 10 years only.
Ans	❌ 1. 1 only
	❌ 2. 1 and 3
	✔️ 3. 2 and 3
	❌ 4. 1 and 2

Q.6	Which synthetic chemicals are responsible for the depletion of ozone in the atmosphere?
Ans	✔️ 1. Chlorofluorocarbons (CFCs)
	❌ 2. Methane
	❌ 3. Carbon dioxide
	❌ 4. Nitrogen oxides

Q.7	In the reaction $CuO+H_2 \rightarrow Cu+H_2O$, the substance reduced is:
Ans	✔️ 1. CuO
	❌ 2. H_2O
	❌ 3. H_2
	❌ 4. Cu

Q.8	What is the median of the following data? 78, 33, 59, 56, 61, 36, 48, 42, 97, 57, 62
Ans	❌ 1. 56.5
	❌ 2. 58
	✔️ 3. 57
	❌ 4. 57.5

Q.9	Which of the following can be minimised through the implementation of proper sewage treatment?
Ans	❌ 1. Air pollution
	❌ 2. Noise pollution
	❌ 3. Soil pollution
	✔️ 4. Water pollution

Q.10	Two numbers are in the ratio 5 : 8. If the first number is increased by 13 and the second number is decreased by 6, then the ratio becomes 4 : 6. What is the sum of the original two numbers?
Ans	❌ 1. 650
	❌ 2. 681
	❌ 3. 665
	✔️ 4. 663

Q.11	Who was appointed as the new head coach of the junior men's hockey team in August 2024?
Ans	✗ 1. Shankar Lakshman
	✗ 2. Harmanpreet Singh
	✗ 3. Prithipal Singh
	✓ 4. PR Sreejesh

Q.12	The curved surface area of a cone is 5544 cm², and the diameter is 168 cm. What is its total surface area (in cm²)? (Use $\pi = \frac{22}{7}$)
Ans	✗ 1. 27,270
	✓ 2. 27,720
	✗ 3. 25,530
	✗ 4. 23,550

Q.13	With which of the following pricing approaches is a product's price equal to its marginal cost?
Ans	✗ 1. Mark-up pricing
	✗ 2. Factor pricing
	✓ 3. Marginal cost pricing
	✗ 4. Price discrimination

Q.14	Write the expanded form of $(5a + 4b + 9c)^2$.
Ans	✗ 1. $25a^2 + 16b^2 + 81c^2 + 44ab + 72bc + 90ac$
	✓ 2. $25a^2 + 16b^2 + 81c^2 + 40ab + 72bc + 90ac$
	✗ 3. $25a^2 + 16b^2 + 81c^2 + 40ab + 72bc + 100ac$
	✗ 4. $25a^2 + 16b^2 + 81c^2 + 40ab + 67bc + 90ac$

Q.15	In which year did the amount of ozone begin to drop sharply in the atmosphere?
Ans	✗ 1. 1970
	✓ 2. 1980
	✗ 3. 1960
	✗ 4. 1950

Q.16	When lead nitrate is heated, it decomposes to form lead monoxide (PbO), nitrogen dioxide (NO_2), and oxygen (O_2). The brown gas seen during the reaction is:
Ans	✓ 1. nitrogen dioxide (NO_2)
	✗ 2. lead monoxide (PbO)
	✗ 3. oxygen (O_2)
	✗ 4. nitric oxide (NO)

Q.17	A trader lost 10% by selling a shirt for ₹850. He will gain x%' by selling it for ₹1360, the value of x is:
Ans	✓ 1. 44
	✗ 2. 54
	✗ 3. 59
	✗ 4. 34

Q.18	If 1 is added to each odd digit and 1 is subtracted from each even digit in the number 8436152, then what will be the difference between the last and the first digits from the left in the number thus formed?
Ans	✗ 1. 4
	✗ 2. 3
	✔ 3. 6
	✗ 4. 5

Q.19	Which of the following can be broken down by biological processes?
Ans	✗ 1. Milk packets
	✗ 2. Aluminium foil
	✔ 3. Vegetable peels
	✗ 4. Plastic bottles

Q.20	Which of the following articles empowers the President to make regulations for the peace, progress and good government of the union territories?
Ans	✗ 1. Article 243
	✗ 2. Article 244
	✔ 3. Article 240
	✗ 4. Article 239

Q.21	What happens to the resistance of most conductors as their temperature increases?
Ans	✔ 1. It increases.
	✗ 2. It remains the same.
	✗ 3. It decreases.
	✗ 4. It becomes zero.

Q.22	Which attribute of a paper cup makes it better than a plastic cup for our environment?
Ans	✗ 1. Disposable
	✗ 2. Not disposable
	✗ 3. Non-biodegradable
	✔ 4. Biodegradable

Q.23	₹5400 were divided among P, Q and R, such that 6 times of P = 3 times of Q = 8 times of R. Find the share of R.
Ans	✗ 1. ₹1235
	✗ 2. ₹947
	✗ 3. ₹1245
	✔ 4. ₹1080

Q.24	By selling an article at $\frac{5}{14}$ of its actual selling price, Hitesh incurs a loss of 20%. If he sells it at 80% of its actual selling price, then the profit percentage is:
Ans	✗ 1. 81.2%
	✗ 2. 80.7%
	✗ 3. 81.9%
	✔ 4. 79.2%

Q.25	Evaluate: 33 ÷ 9 × 3 - 2 × 4
Ans	✔ 1. 3
	✗ 2. 6
	✗ 3. 2
	✗ 4. 5

Q.26	Which of the following reactions is an example of a precipitation reaction?
Ans	✗ 1. $CaCO_3 \rightarrow CaO + CO_2$
	✗ 2. $HCl + NaOH \rightarrow NaCl + H_2O$
	✗ 3. $2H_2 + O_2 \rightarrow 2H_2O$
	✓ 4. $NaCl + AgNO_3 \rightarrow NaNO_3 + AgCl$

Q.27	The climate of the Thar desert is best described as _____.
Ans	✗ 1. temperate
	✗ 2. tropical rainforest
	✗ 3. humid subtropical
	✓ 4. arid

Q.28	What is the reason for CFC free refrigerators being manufactured for use throughout the world?
Ans	✓ 1. CFC is a synthetic chemical which depletes the ozone layer.
	✗ 2. CFC is cheap for use in refrigerators.
	✗ 3. CFC is tough to handle for the refrigeration industry.
	✗ 4. CFC makes refrigeration a tough process.

Q.29	B is the father of A. C is the brother of A. D is the wife of C and E is the son of D. How is B related to E?
Ans	✓ 1. Father's father
	✗ 2. Father's brother
	✗ 3. Father
	✗ 4. Brother

Q.30	Himani travels a distance of 352 km with speed of 32 km/h and 330 km with 30 km/h by her car. Find the average speed (in km/h) of Himani.
Ans	✓ 1. 31
	✗ 2. 39
	✗ 3. 21
	✗ 4. 26

Q.31	Sakshi invested a sum of ₹8900 at 10% per annum compound interest, componded annually. If she received an amount of ₹10769 after n years, the value of n is:
Ans	✓ 1. 2
	✗ 2. 2.4
	✗ 3. 1.60000002384186
	✗ 4. 3

Q.32	What would happen to dead plants and animals if decomposers were absent from an ecosystem?
Ans	✗ 1. They would be eaten by consumers.
	✗ 2. They would quickly turn into soil.
	✓ 3. They would persist, and the natural replenishment of soil would be hindered.
	✗ 4. They would become producers.

Q.33	Seven boxes, E, F, G, H, T, U and V, are kept one over the other, but not necessarily in the same order. Only two boxes are kept below E. Only one box is kept above T. Only one box is kept between T and U. G is kept immediately below F. V is kept at some place below H. How many boxes are kept between H and F?
Ans	✗ 1. Three
	✗ 2. One
	✗ 3. Two
	✔ 4. Four

Q.34	When was the Indian Remote Sensing Satellite System (IRS) established?
Ans	✗ 1. 1972
	✔ 2. 1988
	✗ 3. 1959
	✗ 4. 1983

Q.35	What should come in place of the question mark (?) in the given series? 18 24 34 40 50 ?
Ans	✔ 1. 56
	✗ 2. 57
	✗ 3. 55
	✗ 4. 58

Q.36	Which of the following represents a combination reaction?
Ans	✔ 1. $CaO + H_2O \rightarrow Ca(OH)_2$
	✗ 2. $CaCO_3 \rightarrow CaO + CO_2$
	✗ 3. $2KClO_3 \rightarrow 2KCl + 3O_2$
	✗ 4. $NaCl + AgNO_3 \rightarrow AgCl + NaNO_3$

Q.37	Which of the following combinations would produce a precipitate?
Ans	✔ 1. $NaOH + FeCl_3$
	✗ 2. $NaOH + Na_2SO_4$
	✗ 3. $NaOH + NaCl$
	✗ 4. $NaCl + KNO_3$

Q.38	A question is given, followed by two statements labelled I and II. Identify which of the statements is/are sufficient to answer the question. Five people, A, B, C, D and E, have different weights each. Who is the heaviest? (I) A is heavier than C but lighter than D. (II) B is not the heaviest and E is not the lightest.
Ans	✗ 1. Both Statements I and II put together (and not independently) are sufficient to answer the question.
	✗ 2. Data in Statement II alone is sufficient to answer the question, while data in Statement I is not.
	✗ 3. Data in Statement I alone is sufficient to answer the question, while data in Statement II is not.
	✔ 4. Both Statements I and II put together are not sufficient to answer the question.

Q.39	The average price of three items of furniture is Rs 16455. If their prices are in the ratio 3:5:7, the price of the cheapest item (in Rs) is
Ans	✗ 1. 5485
	✗ 2. 3291
	✗ 3. 7679
	✔ 4. 9873

Q.40	A copper wire has a resistance of 10 Ω. If it is replaced with a wire of the same material and length but twice the cross-sectional area, its resistance will be _____.
Ans	✗ 1. 20 Ω
	✗ 2. 10 Ω
	✔ 3. 5 Ω
	✗ 4. 2.5 Ω

Q.41	In a certain code language,'guns and roses' is coded as 'li mh ca','for the roses' is coded as 'mh bo ph' and'guns for colours' is coded as 'ca bo qu'.What is the code for 'roses' in that language?
Ans	✗ 1. li
	✔ 2. mh
	✗ 3. ca
	✗ 4. bo

Q.42	Why do iron filings arrange themselves in a pattern around a bar magnet?
Ans	✗ 1. Because they are heavy
	✗ 2. Due to gravitational force
	✔ 3. Because of the magnetic field
	✗ 4. Due to electric charge

Q.43	What is the smallest 4-digit number which, when divided by 12, 16, and 20, gives a remainder of 9?
Ans	✔ 1. 1209
	✗ 2. 1217
	✗ 3. 1017
	✗ 4. 1049

Q.44	The first ruler of Delhi Sultanate was:
Ans	✗ 1. Balban
	✔ 2. Qutb-ud-din Aibak
	✗ 3. Alauddin Khalji
	✗ 4. Iltutmish

Q.45	Which of the following letter-clusters should replace # and % so that the pattern and relationship followed between the letter-cluster pair on the left side of :: is the same as that on the right side of :: ? # : GOK :: HPL : %
Ans	✔ 1. # = EMI, % = JRN
	✗ 2. # = EMI, % = JSN
	✗ 3. # = EMI, % = JRM
	✗ 4. # = EMJ, % = JRN

Q.46	If a substance has a pH of 11, which of the following statements is true?
Ans	✗ 1. It is neutral and does not change the litmus colour.
	✔ 2. It is basic and can turn red litmus paper blue.
	✗ 3. It is acidic and can turn blue litmus paper red.
	✗ 4. It is acidic and does not change the colour of the litmus paper.

Q.47	What should come in place of the question mark (?) in the given series?
	64 61.7 59.4 57.1 ? 52.5
Ans	✔ 1. 54.8
	✘ 2. 53.1
	✘ 3. 55.4
	✘ 4. 56.7

Q.48	A man walks to a viewpoint and returns to the starting point by his car maintaining constant speed and thus takes a total time of 6 hours 45 minutes. He would have gained 2 hours by driving both ways. How long would it have taken for him to walk both ways with same walking speed?
Ans	✘ 1. 8 hours 30 minutes
	✘ 2. 9 hours 15 minutes
	✘ 3. 7 hours 45 minutes
	✔ 4. 8 hours 45 minutes

Q.49	A and B complete a work in 18 days. If A alone can do it in 54 days then, B alone can do in_____(days).
Ans	✘ 1. 29
	✔ 2. 27
	✘ 3. 26
	✘ 4. 28

Q.50	Based on the English alphabetical order, three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which is the one that DOES NOT belong to that group?
Ans	✘ 1. EC – HF
	✘ 2. MK – PN
	✘ 3. IG – LJ
	✔ 4. TR – XV

Q.51	Article 51 A (b) of the Indian Constitution states that it is the duty of the citizens 'to cherish and follow the noble ideals that inspired the _____'.
Ans	✘ 1. customs and traditions of India
	✘ 2. global values and principles
	✔ 3. national struggle for freedom
	✘ 4. political ideas of various parties

Q.52	If $A = 7.5°$, what is the value of $\left(12.8 \times \dfrac{1}{\sqrt{3}} \cot 4A + 7.2 \tan 6A\right)$?
Ans	✘ 1. 12
	✘ 2. 8
	✔ 3. 20
	✘ 4. 10

Q.53	Write the expanded form of $(9a + 6b + 4c)^2$.
Ans	✘ 1. $81a^2 + 36b^2 + 16c^2 + 108ab + 43bc + 72ac$
	✔ 2. $81a^2 + 36b^2 + 16c^2 + 108ab + 48bc + 72ac$
	✘ 3. $81a^2 + 36b^2 + 16c^2 + 108ab + 48bc + 82ac$
	✘ 4. $81a^2 + 36b^2 + 16c^2 + 112ab + 48bc + 72ac$

Q.54	In which direction does the force act on a conductor placed in a magnetic field in an electric motor?	
Ans	✗ 1. Opposite to the magnetic field	
	✗ 2. In the direction of the current	
	✗ 3. Along the magnetic field	
	✓ 4. Perpendicular to both the current and magnetic field	

Q.55	The average marks of some students in a class is 75. When five students are included, the average becomes 78 and the marks of those five students are 80, 85, 89, 81 and 82. Find the total number of students.	
Ans	✗ 1. 6	
	✓ 2. 9	
	✗ 3. 8	
	✗ 4. 10	

Q.56	How many of the following Union territories were created after State Reorganisation Act passed in 1956?	
Ans	✗ 1. 7	
	✓ 2. 6	
	✗ 3. 5	
	✗ 4. 4	

Q.57	The potential difference versus current plot for a conducting wire is a straight line. The slope of this line gives us the:	
Ans	✗ 1. current flowing through the wire	
	✓ 2. resistance of the wire	
	✗ 3. voltage across the wire	
	✗ 4. number of electrons in the wire	

Q.58	In $\triangle PQR$ and $\triangle XYZ$, PQ = 5 cm, QR = 6 cm, PR = 7 cm, XY = 5 cm, YZ = 6 cm and XZ = 7 cm. Then which of the following is true?	
Ans	✗ 1. $\triangle PQR \cong \triangle YXZ$	
	✓ 2. $\triangle PQR \cong \triangle XYZ$	
	✗ 3. $\triangle QPR \cong \triangle XYZ$	
	✗ 4. $\triangle PRQ \cong \triangle XYZ$	

Q.59	Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster DOES NOT belong to that group? (Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)	
Ans	✗ 1. MQZE	
	✗ 2. GKTY	
	✓ 3. WAIO	
	✗ 4. OSBG	

Q.60	A number when increased by 50 %, gives 2850. The number is:	
Ans	✗ 1. 950	
	✗ 2. 3800	
	✗ 3. 5700	
	✓ 4. 1900	

Q.61	If three resistors of 6 Ω, 3 Ω and 2 Ω are connected in parallel, the total equivalent resistance is _____.
Ans	✗ 1. 11 Ω
	✗ 2. 0.5 Ω
	✗ 3. 2 Ω
	✓ 4. 1 Ω

Q.62	Refer to the following number, symbol series and answer the question. Counting to be done from left to right only. (Left) 9 8 & & © € % 8 $ 9 8 2 # 5 2 7 7 1 5 £ € % (Right) How many such numbers are there each of which is immediately preceded by a symbol and also immediately followed by a symbol?
Ans	✗ 1. 0
	✗ 2. 3
	✗ 3. 2
	✓ 4. 1

Q.63	According to experimental results, when does the magnitude of the force on a current-carrying conductor in a magnetic field become the highest?
Ans	✓ 1. When the current is perpendicular to the magnetic field
	✗ 2. When the current is opposite to the magnetic field
	✗ 3. When the current is parallel to the magnetic field
	✗ 4. When the current flows at any angle to the magnetic field

Q.64	Who among the following women started the Women's Indian Association in 1917?
Ans	✗ 1. Usha Mehta
	✗ 2. Madam Bhikaji Cama
	✗ 3. Sarojini Naidu
	✓ 4. Annie Besant

Q.65	B, C, E, F and H have different heights. B is taller than C but shorter than H. H is taller than E but shorter than F. E is taller than C but shorter than B. How many people are shorter than B?
Ans	✓ 1. Two
	✗ 2. Four
	✗ 3. One
	✗ 4. Three

Q.66	A shopkeeper sells an item for ₹770.7 after giving two successive discounts of 58% and 80% on its marked price. Had he not given any discount, he would have earned a profit of 25%. What is the cost price (in ₹) of the item?
Ans	✗ 1. 7322
	✗ 2. 7353
	✗ 3. 7315
	✓ 4. 7340

Q.67	Which of the following letter-number clusters will replace the question mark (?) in the given series to make it logically complete? JCF25, KDG34, LEH43, MFI52, ?
Ans	✗ 1. NGI61
	✗ 2. NGI60
	✗ 3. NGJ60
	✓ 4. NGJ61

Q.68	This question is based on the five, three-digit numbers given below. (Left) 473 987 324 529 648 (Right) (Example: 697 – First digit = 6, second digit = 9 and third digit = 7) NOTE: All the operations to be performed from left to right. The position of how many numbers will remain unchanged if all these numbers are arranged in ascending order?	
Ans	✔️ 1. None	
	❌ 2. One	
	❌ 3. Three	
	❌ 4. Two	

Q.69	The author of the famous novel 'Midnight's Children' is:	
Ans	✔️ 1. Salman Rushdie	
	❌ 2. Khushwant Singh	
	❌ 3. Shashi Tharoor	
	❌ 4. Ruskin Bond	

Q.70	$\dfrac{(a^1 \times b^7 \times c^7)}{(a^1 \times b^2 \times c^{10})}$ in simplified form is:	
Ans	❌ 1. $(a^2) \times (b^4) \times (c^{-5})$	
	✔️ 2. $(a^0) \times (b^5) \times (c^{-3})$	
	❌ 3. $(a^4) \times (b^2) \times (c^2)$	
	❌ 4. $(a^{-8}) \times (b^{-5}) \times (c^{-9})$	

Q.71	Which country gave the name 'Dana' to the cyclone that hit India from the Bay of Bengal?	
Ans	❌ 1. The Maldives	
	❌ 2. The United Arab Emirates	
	✔️ 3. Saudi Arabia	
	❌ 4. Oman	

Q.72	If the mean of the following data is 61, then the value of X is:	

xi	55	60	70	95
fi	48	X	31	23

Ans	❌ 1. 799
	✔️ 2. 773
	❌ 3. 790
	❌ 4. 796

Q.73	Which of the following will cause the greatest increase in power dissipation for a given resistor?	
Ans	✔️ 1. Doubling the voltage across the resistor	
	❌ 2. Doubling the resistance	
	❌ 3. Halving the current through the resistor	
	❌ 4. Halving the resistance	

Q.74	If the length of a wire-shaped resistor is doubled, the resistivity:	
Ans	✓ 1. remains the same	
	✗ 2. is doubled	
	✗ 3. is halved	
	✗ 4. is quadrupled	

Q.75	A, B, C, D, E, F and G are sitting around a circular table facing the centre. B sits third to the right of F. D sits fourth to the left of B. C is neither the immediate neighbour of B nor D. A sits third to the right of C. E is not the immediate neighbour of D. How many people sit between E and G, when counted from the left of E?	
Ans	✗ 1. None	
	✗ 2. One	
	✗ 3. Two	
	✓ 4. Three	

Q.76	What was the venue of the North Atlantic treaty Organization (NATO) Summit in July 2024?	
Ans	✗ 1. New York, United States	
	✗ 2. London, England	
	✓ 3. Washington, D.C., United States	
	✗ 4. Paris, France	

Q.77	The sum of 8 numbers is 336. Find their average number.	
Ans	✓ 1. 42	
	✗ 2. 40	
	✗ 3. 41	
	✗ 4. 43	

Q.78	Which of the following letter-number clusters will replace the question mark (?) in the given series to make it logically complete? FIS38, RUE70, DGQ102, PSC134, ?	
Ans	✓ 1. BEO166	
	✗ 2. BOW165	
	✗ 3. BOQ166	
	✗ 4. BOE166	

Q.79	Two pipes can fill a tank in 34 hours and 94 hours, respectively. The time (in hours) required to fill the tank when both pipes are opened simultaneously is:	
Ans	✗ 1. $\dfrac{796}{30}$	
	✗ 2. $\dfrac{797}{29}$	
	✓ 3. $\dfrac{799}{32}$	
	✗ 4. $\dfrac{798}{31}$	

Q.80	A solution has a pH of 12. Which ion concentration is higher in this solution?
Ans	✗ 1. Both H^+ and OH^- are equal
	✗ 2. More number S^{2-} ions and more Cl^{-1}
	✓ 3. Only OH^-
	✗ 4. Only H^+

Q.81	RUON is related to VYSR in a certain way based on the English alphabetical order. In the same way, HKED is related to LOIH. To which of the given options is TWQP related, following the same logic?
Ans	✗ 1. AXUT
	✗ 2. XATU
	✓ 3. XAUT
	✗ 4. AXTU

Q.82	If the mean proportional of P and 100 is 50, then find the value of P.
Ans	✓ 1. 25
	✗ 2. 28
	✗ 3. 22
	✗ 4. 24

Q.83	Fleming's Right-Hand Rule is applicable in the case of _____.
Ans	✗ 1. electric motors
	✓ 2. electric generators
	✗ 3. electric kettles
	✗ 4. fuse wires

Q.84	Why is monitoring pH crucial for understanding the impacts of acid rain on soil and water ecosystems?
Ans	✗ 1. Acid rain only makes the water taste sour.
	✗ 2. Acid rain does not affect soil and water ecosystems.
	✓ 3. Acid rain decreases the pH, harming aquatic life and soil nutrient availability.
	✗ 4. Acid rain increases the pH of soil and water bodies.

Q.85	The centres of two circles with radii 28 cm and 20 cm are 50 cm apart. What is the length (in cm) of the transverse common tangent?
Ans	✗ 1. 16
	✗ 2. 15
	✗ 3. 13
	✓ 4. 14

Q.86	The ratio between HCF and LCM of two numbers 62 and 217 is 1 : 14. Find the LCM.
Ans	✗ 1. 439
	✗ 2. 402
	✗ 3. 430
	✓ 4. 434

Q.87	**For which mission of ISRO has the International Astronautical Federation (IAF) awarded ISRO the World Space Award?**
Ans	✖ 1. Chandrayaan-2
	✖ 2. Aditya-L1
	✔ 3. Chandrayaan-3
	✖ 4. Venus Mission

Q.88	**Study the given diagram carefully and answer the questions. The numbers in different sections indicate the number of persons. How many persons are both poor and uneducated but not famous ?** **(NOTE: You have to take the given data to be true even if they seem to be at variance from commonly known facts.)**

Ans	✖ 1. 8
	✔ 2. 5
	✖ 3. 12
	✖ 4. 30

Q.89	**Find the simple interest (in closest integral ₹) on ₹4000 at 5.25% per annum rate of interest for the period from 14 February 2024 to 15 April 2024**
Ans	✖ 1. 33
	✖ 2. 36
	✖ 3. 34
	✔ 4. 35

Q.90	**The cost of a washing machine is 25% less than the cost of a TV. If the cost of the washing machine increases by 82% and that of the TV decreases by 16%, then what is the change in the total cost of 8 washing machines and 9 TVs?**
Ans	✔ 1. Increase by 23.2%
	✖ 2. Increase by 20%
	✖ 3. Decrease by 24%
	✖ 4. Decrease by 21%

Q.91	**Select the letter-cluster pair that best represents a similar relationship to the one expressed in the pairs of letter-clusters given below.** **NCG : SFF** **SQO : XTN**
Ans	✖ 1. REV : WHW
	✔ 2. MKY : RNX
	✖ 3. IUD : NXA
	✖ 4. QHX : VKV

Q.92	Select the option in which the numbers share the same relationship as that shared by the given pairs of numbers. (NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.) 96, 12 184, 23
Ans	✗ 1. 130, 16
	✓ 2. 144, 18
	✗ 3. 156, 19
	✗ 4. 180, 20

Q.93	Each of P, Q, R, S, T, U and V has an exam on a different day of a week starting from Monday and ending on Sunday of the same week. Q has the exam on Saturday. Only four people have exams after U. R has the exam immediately before T but not on Monday. S has the exam after P but before U. How many people have exams between R and V?
Ans	✗ 1. Three
	✓ 2. Two
	✗ 3. Five
	✗ 4. Four

Q.94	What architectural style is the Meenakshi Amman Temple known for?
Ans	✗ 1. Gothic
	✗ 2. Roman
	✗ 3. Indo-Saracenic
	✓ 4. Dravidian

Q.95	Which ion is responsible for the acidic properties of acids?
Ans	✗ 1. Na^+
	✓ 2. H^+
	✗ 3. OH^-
	✗ 4. Cl^-

Q.96	When two elements react to form a compound, it can be classified as:
Ans	✗ 1. displacement
	✗ 2. double displacement
	✗ 3. decomposition
	✓ 4. combination

Q.97	In a certain code language, 'fan light door' is coded as 'dy ph mt', 'door window mat' is coded as 'lp ph st', 'mat fan glass' is coded as 'st bq dy'. What is the code for 'fan' in that language? (Note: All the codes are two-letter coded only.)
Ans	✗ 1. mt
	✗ 2. bq
	✗ 3. ph
	✓ 4. dy

Q.98	What term can be used for substances that are broken down by biological processes?
Ans	✗ 1. Non-biodegradable
	✓ 2. Biodegradable
	✗ 3. Compostable
	✗ 4. Recyclable

Q.99	What role do green plants and certain bacteria play in an ecosystem?
Ans	✓ 1. Producers
	✗ 2. Consumers
	✗ 3. Parasites
	✗ 4. Decomposers

Q.100	Which of the following substances will take the longest time to degrade naturally in the environment?
Ans	✓ 1. Leather
	✗ 2. Cardboard box
	✗ 3. Paper
	✗ 4. Leaves

2024/12/20-08:51:42

Test Date	18/12/2024
Test Time	12:45 PM - 2:15 PM
Subject	RRB JE DMS CMA CS MS

* Note
Correct Answer will carry 1 mark per Question.
Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.
2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : **RRB JE, DMS, CMA, CS, MS CBT-1**

Q.1 A man sold an article for ₹360 by first giving a d% discount on its marked price, and then another discount having the same nominal value (in ₹). If the marked price of the article is ₹2250, then what is the value of d?

Ans
✗ 1. 41
✗ 2. 38
✔ 3. 42
✗ 4. 45

Q.2 Which of the following letter-clusters should replace # and % so that the pattern and relationship followed between the letter-cluster pair on the left side of :: is the same as that on the right side of ::?
: UOK :: HBX : %

Ans
✗ 1. # = TJF, % = MGC
✗ 2. # = PJF, % = NGC
✗ 3. # = PJF, % = MGO
✔ 4. # = PJF, % = MGC

Q.3 The marks scored by 10 students are given below.
18, 13, 14, 18, 14, 17, 15, 11, 13, 18
The mode of the data is:

Ans
✗ 1. 13
✔ 2. 18
✗ 3. 14
✗ 4. 11

Q.4 What does the thumb represent in Fleming's Right-Hand Rule?

Ans
✔ 1. Direction of motion
✗ 2. Direction of voltage
✗ 3. Direction of magnetic field
✗ 4. Direction of induced current

Q.5	119 is related to 205 following a certain logic. Following the same logic, 145 is related to 231. To which of the given options is 132 related, following the same logic? (NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into their constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)
Ans	✗ 1. 228
	✗ 2. 215
	✗ 3. 221
	✔ 4. 218

Q.6	A and B can do a piece of work in 2 days and 42 days, respectively. The number of days [Correct to one decimal place] required to complete the work if both A and B work together is:
Ans	✔ 1. 1.9
	✗ 2. 5.1
	✗ 3. 3.3
	✗ 4. 1.3

Q.7	In a certain code language, 'A + B means 'A is the son of B', 'A − B means 'A is the brother of B', 'A × B means 'A is the wife of B' and 'A ÷ B means 'A is the father of B'. How is S related to H if 'S + D × F ÷ G − H'?
Ans	✔ 1. Brother
	✗ 2. Son
	✗ 3. Father
	✗ 4. Husband

Q.8	If the distance between A and B is 530 Km. From A, Namit goes to B with speed 37 km/h and return to A with the speed 77 km/h. Find the average speed of Namit.(rounded off to two decimal place)
Ans	✗ 1. 46.51 km/h
	✔ 2. 49.98 km/h
	✗ 3. 44.54 km/h
	✗ 4. 44.47 km/h

Q.9	Washing soda is represented by $Na_2CO_3.xH_2O$. The value of 'x' is equal to:
Ans	✗ 1. 2
	✔ 2. 10
	✗ 3. 6
	✗ 4. 8

Q.10	The larger of two supplementary angles is 22° more than the smaller. The smaller angle (in degree) is:
Ans	✔ 1. 79
	✗ 2. 84
	✗ 3. 86
	✗ 4. 88

Q.11	Where did Dr. Jitendra Singh, Union Minister of State for Science and Technology, inaugurate India's first Demonstration Facility for Biopolymers in October 2024?
Ans	✗ 1. Hyderabad
	✗ 2. Bhopal
	✓ 3. Pune
	✗ 4. Chennai

Q.12	Who launched 'Create in India Challenge-Season One' in New Delhi on 22 August 2024, the run-up to the World Audio Visual and Entertainment Summit?
Ans	✗ 1. Nitin Gadkari
	✗ 2. Amit Shah
	✗ 3. Narendra Modi
	✓ 4. Ashwini Vaishnaw

Q.13	A solution has a pH of 8. If it is diluted with an equal volume of water, what will happen to its pH?
Ans	✗ 1. The pH will decrease.
	✗ 2. The pH will increase.
	✗ 3. The pH will remain the same.
	✓ 4. It will become neutral.

Q.14	Which of the following articles deals with elections to the House of the People and to the legislative assemblies of state to be on the basis of adult suffrage?
Ans	✓ 1. 326
	✗ 2. 340
	✗ 3. 352
	✗ 4. 318

Q.15	Twelve years ago, the age of Reena's mother was three times the age of Reena. Two years hence, the mother's age will be 2 times the age of Reena. Find the ratio of the present ages of Reena and her mother.
Ans	✗ 1. 5 : 9
	✗ 2. 27 : 13
	✓ 3. 13 : 27
	✗ 4. 9 : 11

Q.16	The average price of three items of furniture is Rs 16890. If their prices are in the ratio 3:5:7, the price of the cheapest item (in Rs) is
Ans	✓ 1. 10134
	✗ 2. 3378
	✗ 3. 5630
	✗ 4. 7882

Q.17	Select the pair which follows the same pattern as that followed by the two set of pairs given below. Both pairs follow the same pattern. PMN : RPI VHS : XKN
Ans	✗ 1. JPQ : LSM
	✓ 2. NFF : PIA
	✗ 3. TIH : VMC
	✗ 4. PTV : RWR

Q.18	Find the value of $2.3\overline{8} \div 0.5\overline{4}$.
Ans	✔ 1. $4\dfrac{19}{49}$
	✘ 2. $3\dfrac{17}{21}$
	✘ 3. $5\dfrac{26}{51}$
	✘ 4. $6\dfrac{29}{57}$

Q.19	Which of the following devices operates based on the heating effect of electric current?
Ans	✘ 1. Transformer
	✘ 2. Generator
	✔ 3. Electric iron
	✘ 4. Electric motor

Q.20	If the mean proportional of P and 125 is 100, then find the value of P.
Ans	✘ 1. 77
	✔ 2. 80
	✘ 3. 79
	✘ 4. 82

Q.21	B, C, E, F and H have different heights. Only C is taller than B. E is taller than H. Only two people have heights between F and C. How many people have heights between H and B?
Ans	✔ 1. Two
	✘ 2. One
	✘ 3. Three
	✘ 4. Four

Q.22	Find the value of $\sin^2 63° + \sin^2 27° + \cos^2 17° + \cos^2 73° + \cos^2 90°$.
Ans	✘ 1. 1
	✔ 2. 2
	✘ 3. −1
	✘ 4. 0

Q.23	Mahatma Gandhi started his famous 'Salt march' accompanied by _____ of his trusted volunteers.
Ans	✘ 1. 51
	✘ 2. 94
	✘ 3. 39
	✔ 4. 78

Q.24	If A's salary is 72 % more than that of B, then how much percent is B's salary less than that of A (correct to 2 decimal places)?
Ans	✘ 1. 44.19%
	✔ 2. 41.86%
	✘ 3. 45.3%
	✘ 4. 44.24%

Q.25	Which reactants are used to prepare bleaching powder?
Ans	✗ 1. Lime and sulphuric acid
	✗ 2. Calcium hydroxide and hydrochloric acid
	✓ 3. Chlorine gas and dry calcium hydroxide
	✗ 4. Chlorine and water

Q.26	Which process ensures half the amount of DNA in reproductive cells as compared to non-reproductive cells?
Ans	✗ 1. Amitosis
	✓ 2. Meiosis
	✗ 3. Cytokinesis
	✗ 4. Mitosis

Q.27	In the context of Buddhist architecture, what is a 'chaitya'?
Ans	✗ 1. A decorative column
	✗ 2. A residential space for monks
	✓ 3. A hall for prayer and assembly
	✗ 4. A type of stupa

Q.28	The product of the reaction between ethanol and acetic acid is:
Ans	✗ 1. acetate
	✓ 2. ester
	✗ 3. methanol
	✗ 4. ethanal

Q.29	Baking soda, commonly used in households, is also known by its chemical name:
Ans	✗ 1. calcium carbonate
	✗ 2. sodium carbonate
	✓ 3. sodium bicarbonate
	✗ 4. magnesium hydroxide

Q.30	When a solution contains an equal number of H^+ and OH^- ions, then the pH of the solution is:
Ans	✗ 1. pH > 12
	✗ 2. pH < 3
	✗ 3. pH > 3 but < 5
	✓ 4. pH = 7

Q.31	What is the process of fusion of the male and female gametes called in plants?
Ans	✓ 1. Fertilisation
	✗ 2. Germination
	✗ 3. Propagation
	✗ 4. Pollination

Q.32	What is the shape of the magnetic field lines inside a solenoid?
Ans	✓ 1. Straight and parallel
	✗ 2. Elliptical
	✗ 3. Circular
	✗ 4. Randomly oriented

Q.33	$\dfrac{(a^4 \times b^3 \times c^4)}{(a^9 \times b^4 \times c^8)}$ in simplified form is:
Ans	✗ 1. $(a^7) \times (b^9) \times (c^8)$
	✗ 2. $(a^{-9}) \times (b^{-2}) \times (c^{-2})$
	✗ 3. $(a^7) \times (b^8) \times (c^{-9})$
	✔ 4. $(a^{-5}) \times (b^{-1}) \times (c^{-4})$

Q.34	Which of the following Constitutional amendments inserts the Special officer for linguistic minorities, who is known as the Commissioner for Linguistic Minorities in India (CLM), to investigate all the matters relating to the safeguards provided for the linguistic minorities in India under the Constitution and report to the President?
Ans	✗ 1. 2nd Constitutional Amendment Act,1952
	✗ 2. 11th Constitutional Amendment Act, 1965
	✗ 3. 10th Constitutional Amendment Act, 1960
	✔ 4. 7th Constitutional Amendment Act, 1956

Q.35	In a series circuit, if one of the resistors is removed or broken, the current in the circuit will _____.
Ans	✗ 1. increase
	✗ 2. stay the same
	✗ 3. decrease
	✔ 4. become zero

Q.36	Study the given diagram carefully and answer the question that follows. The numbers in different sections indicate the number of persons who own the given brands of car. How many person own both MS and WB but not HM? (NOTE: You have to take the given data to be true even if they seem to be at variance from commonly known facts.)

Ans	✗ 1. 18
	✔ 2. 12
	✗ 3. 34
	✗ 4. 8

Q.37	In a certain code language, 'pillow blanket bed' is coded as 'ma ph st', 'bed window door' is coded as 'cd le ma' and 'door pillow wall' is coded as 'st bq cd'. (All the codes are two-letter codes only.) What is the code for 'wall' in that language?	
Ans	✅ 1. bq	
	❌ 2. le	
	❌ 3. st	
	❌ 4. cd	

Q.38	Two taps can fill a cistern in 2 hours and 51 hours respectively. A third tap can empty it in 51 hours. How long (in hours) will it take to fill the empty cistern, if all of them are opened together?	
Ans	❌ 1. 5	
	❌ 2. 3	
	❌ 3. 4	
	✅ 4. 2	

Q.39	A question is given, followed by two statements labelled I and II. Identify which of the statements is/are sufficient to answer the question. A, B, C, D and E are sitting in a straight line facing north. Who sits on the extreme left end? (I) D sits second to the right of C. (II) Exactly two people sit between B and D.	
Ans	✅ 1. Both Statements I and II put together are not sufficient to answer the question.	
	❌ 2. Data in Statement I alone is sufficient to answer the question, while data in Statement II is not.	
	❌ 3. Data in Statement II alone is sufficient to answer the question, while data in Statement I is not.	
	❌ 4. Both Statements I and II put together (and not independently) are sufficient to answer the question.	

Q.40	Which of the following is an example of regeneration in plants?	
Ans	❌ 1. Budding in hydra	
	❌ 2. Binary fission in bacteria	
	❌ 3. Reproduction in humans	
	✅ 4. Growth of a new plant from a cutting	

Q.41	Seven boxes, A, B, C, D, X, Y and Z, are kept one over the other but not necessarily in the same order. Only three boxes are kept above B. Only one box is kept between C and B. Only three boxes are kept between C and Y. Y is kept at some place above B. Z is kept immediately below Y. A is kept at one of the places above X. D is not kept immediately above or below C. Which box is kept at the lowermost position?	
Ans	❌ 1. Z	
	❌ 2. C	
	✅ 3. X	
	❌ 4. B	

Q.42	Seven people, B, D, E, F, P, Q and R, are sitting in a row, facing north. Only three people sit between R and E. F sits to the immediate left of E. No one sits to the right of B. Only two people sit between B and F. P sits to the immediate right of Q. How many people sit between D and P?	
Ans	✅ 1. Two	
	❌ 2. Three	
	❌ 3. One	
	❌ 4. Four	

Q.43	Which state hosted the 61st edition of the Indian National Chess Championship in 2024?	
Ans	✗ 1. Karnataka	
	✓ 2. Haryana	
	✗ 3. Himachal Pradesh	
	✗ 4. Tamil Nadu	

Q.44	People having acidity problems are treated with antacids that contain which of the following?	
Ans	✗ 1. Lime water	
	✓ 2. Milk of magnesia	
	✗ 3. Hydrochloric acid	
	✗ 4. Quick lime	

Q.45	A, B and C invest sum in the ratio 76 : 37 : 52 respectively. If they earned total profit of ₹3850 at the end of year, then what is the difference between share of B and C?	
Ans	✗ 1. ₹203	
	✗ 2. ₹305	
	✗ 3. ₹360	
	✓ 4. ₹350	

Q.46	The age of some students is given in years as 22, 23, 26, 28, 24, 29, 23, 27, 25 and 21. The median age (in years) of the students is:	
Ans	✓ 1. 24.5	
	✗ 2. 23.5	
	✗ 3. 24	
	✗ 4. 25	

Q.47	What are the units of inheritance, which Mendel referred to as 'factors,' now called?	
Ans	✗ 1. Traits	
	✗ 2. DNA	
	✗ 3. Chromosomes	
	✓ 4. Genes	

Q.48	Refer to the given number, symbol series and answer the question that follows. Counting to be done from left to right only. (Left) $ 7 & 4 2 & % 4 6 @ 8 Ω 9 # 6 * £ 5 = 2 (Right) How many such symbols are there each of which is immediately preceded by an odd number and immediately followed by an even number?	
Ans	✗ 1. Two	
	✗ 2. Four	
	✓ 3. Three	
	✗ 4. One	

Q.49	When sodium carbonate (Na_2CO_3) is dissolved in water, the resulting solution becomes:	
Ans	✗ 1. highly reactive with sodium chloride	
	✗ 2. acidic	
	✓ 3. basic	
	✗ 4. neutral	

Q.50	5 is related to 26 following a certain logic. Following the same logic, 12 is related to 145. To which of the following is 13 related, following the same logic?
	(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into their constituent digits. E.g. 13 – Operations on 13 such as adding / subtracting /multiplying to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)
Ans	✗ 1. 168
	✗ 2. 162
	✔ 3. 170
	✗ 4. 172

Q.51	Which of the following statements is correct about equilibrium?
Ans	✗ 1. Equilibrium is the situation where there is more tendency for change.
	✗ 2. Equilibrium is the situation where there is a tendency for change.
	✗ 3. Equilibrium is the situation where there is less tendency for change.
	✔ 4. Equilibrium is the situation where there is no tendency for any change.

Q.52	Find the simple interest (in closest integral ₹) on ₹4000 at 5.25% per annum rate of interest for the period from 4 February 2024 to 5 April 2024
Ans	✗ 1. 36
	✗ 2. 34
	✔ 3. 35
	✗ 4. 33

Q.53	The current ages of A and B add up to 36 years. Four years ago, the age of A was three times than that of B. What is the current age of A?
Ans	✔ 1. 25 years
	✗ 2. 20 years
	✗ 3. 30 years
	✗ 4. 35 years

Q.54	In which year was 'Indian Culture: A Compendium of Indian History, Culture and Heritage' published?
Ans	✗ 1. 2023
	✗ 2. 2020
	✔ 3. 2021
	✗ 4. 2022

Q.55	A concave mirror can form a real, inverted and magnified image when the object is placed _____.
Ans	✗ 1. at the pole
	✗ 2. between the pole and the focus
	✗ 3. beyond the centre of curvature
	✔ 4. between the focus and the centre of curvature

Q.56	According to Mendel, which trait appeared in F1 progeny on crossing tall pea plants with short pea plants?
Ans	✔ 1. Tall
	✗ 2. Short
	✗ 3. Dwarf
	✗ 4. Medium

Q.57	A shopkeeper bought an article for ₹740. At what price (in ₹) should he sell the article to make 30% profit?
Ans	✗ 1. 950
	✓ 2. 962
	✗ 3. 518
	✗ 4. 974

Q.58	Which law of refraction states that light bends due to a change in speed when passing from one medium to another?
Ans	✗ 1. Huygens' principle
	✗ 2. Law of reflection
	✗ 3. Fermat's principle
	✓ 4. Snell's law

Q.59	Which of the following metals will displace copper from copper sulfate solution?
Ans	✗ 1. Platinum
	✗ 2. Silver
	✓ 3. Iron
	✗ 4. Gold

Q.60	Refer to the following number and symbol series and answer the question that follows. Counting to be done from left to right only. (Left) 5 # * 7 9 % 2 & 1 > 6 @ 3 ^ 4 $ > 8 (Right) How many such number are there which are immediately preceded by a number and also immediately followed by another number?
Ans	✓ 1. 0
	✗ 2. 1
	✗ 3. 2
	✗ 4. 3

Q.61	Which major Indian port has become the first to operate under a Public-Private Partnership (PPP) model?
Ans	✗ 1. Paradip Port
	✗ 2. New Mangaluru Port
	✗ 3. Mundra Port
	✓ 4. Jawaharlal Nehru Port

Q.62	What was the venue of G20 Agriculture Ministerial Meeting in 2024?
Ans	✓ 1. Cuiaba, Brazil
	✗ 2. Paris, France
	✗ 3. Ottawa, Canada
	✗ 4. Brussels, Belgium

Q.63	If a 3210 m long train crosses a pole in 107 seconds, then find the time (in seconds) taken by the train to cross a 150 m long platform.
Ans	✗ 1. 106
	✗ 2. 114
	✗ 3. 110
	✓ 4. 112

Q.64	What is the resistivity (ρ) of a material?	
Ans	✗ 1. The product of voltage and current	
	✗ 2. The amount of current a material can carry	
	✗ 3. The same as its resistance	
	✔ 4. A measure of how strongly a material opposes the flow of electric current	

Q.65	Based on the English alphabetical order, three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which letter-cluster pair DOES NOT belong to that group? (Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)	
Ans	✗ 1. VS-OI	
	✗ 2. SP-LF	
	✔ 3. HF-AU	
	✗ 4. FC-YS	

Q.66	A trader claims to sell flour at a profit of 35%, but also dishonestly uses a weight which is 16% less than what is mentioned on it. Find the total percentage of profit earned by the trader. (Round the answer to the nearest whole number.)	
Ans	✗ 1. 56%	
	✗ 2. 63%	
	✗ 3. 60%	
	✔ 4. 61%	

Q.67	Solve the following linear equation. $2x - y + z = 8,\ x + y - z = 10,\ x + y + 2z = 12$	
Ans	✗ 1. $x = \dfrac{-1}{3},\ y = 6,\ z = \dfrac{14}{3}$	
	✗ 2. $x = -6,\ y = \dfrac{-14}{3},\ z = \dfrac{1}{3}$	
	✗ 3. $x = \dfrac{2}{3},\ y = -6,\ z = \dfrac{14}{3}$	
	✔ 4. $x = 6,\ y = \dfrac{14}{3},\ z = \dfrac{2}{3}$	

Q.68	In Amoeba, the splitting during fission can occur _____.	
Ans	✗ 1. only in one specific plane	
	✔ 2. in any plane	
	✗ 3. only along a fixed plane	
	✗ 4. in a definite orientation related to a structure	

Q.69	In the month of July in India, at what latitude is the Inter-Tropical Convergence Zone typically situated?	
Ans	✗ 1. Near the equator	
	✗ 2. Between 5°N and 10°N	
	✔ 3. Around 20°N-25°N	
	✗ 4. South of the equator	

Q.70	If 1 is added to each odd digit and 2 is subtracted from each even digit in the number 7381564, how many digits will appear more than once in the new number thus formed?
Ans	✔ 1. Three
	✘ 2. One
	✘ 3. None
	✘ 4. Two

Q.71	Pankaj starts from Point A and drives 12 km towards east. He then takes a left turn, drives 18 km, turns left and drives 19 km. He then takes a left turn and drives 21 km. He takes a final left turn, drives 7 km and stops at Point P. How far (shortest distance) and towards which direction should he drive in order to reach Point A again? (All turns are 90° turns only unless specified.)
Ans	✘ 1. 1 km to the north
	✔ 2. 3 km to the north
	✘ 3. 4 km to the north
	✘ 4. 5 km to the north

Q.72	Which two numbers should be interchanged to make the following equation correct? 58 + (36× 4)÷ 3 + 6× 8 −12 = 86 (Note: Interchange should be done of the entire number and not individual digits of a given number.)
Ans	✘ 1. 12 and 8
	✔ 2. 36 and 12
	✘ 3. 3 and 6
	✘ 4. 4 and 3

Q.73	A number when increased by 50 %', gives 2880. The number is:
Ans	✘ 1. 3840
	✔ 2. 1920
	✘ 3. 5760
	✘ 4. 960

Q.74	In a certain code language, 'mountains hills rocks' is coded as 'dy ph mt', 'rocks valleys rivers' is coded as 'lp ph st' and 'rivers mountains forests' is coded as 'st bq dy'. (All the codes are two-letter codes only.) What is the code for 'valleys' in that language?
Ans	✘ 1. dy
	✘ 2. st
	✘ 3. ph
	✔ 4. lp

Q.75	Which of the following dynasties did NOT participate in tripartite struggle over Kannauj?
Ans	✘ 1. The Gurjara-Pratiharas
	✔ 2. The Cholas
	✘ 3. The Rashtrakutas
	✘ 4. The Palas

Q.76	Select the letter-cluster from among the given options that can replace the question mark (?) in the following series.
	GEC BZX WUS RPN ?
Ans	✖ 1. MIK
	✔ 2. MKI
	✖ 3. MJK
	✖ 4. MKJ

Q.77	If at same rate of interest, in 2 years, the simple interest is ₹56 and compound interest is ₹58, then what is the principal (in ₹)?
Ans	✔ 1. 392
	✖ 2. 385
	✖ 3. 396
	✖ 4. 387

Q.78	What should come in place of the question mark (?) in the given series based on the English alphabetical order?
	GUY ZNR SGK LZD ?
Ans	✖ 1. EWS
	✖ 2. SWE
	✖ 3. SEW
	✔ 4. ESW

Q.79	Based on the English alphabetical order, three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which letter-cluster pair DOES NOT belong to that group?
	(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)
Ans	✖ 1. QW – NT
	✖ 2. EK – BH
	✖ 3. GM – DJ
	✔ 4. TY – PU

Q.80	The Citizenship Amendment Act was enacted in 2019 and was operationalised after the rules for it were notified by the Ministry of Home Affairs on _____.
Ans	✖ 1. 11 March 2023
	✖ 2. 11 March 2022
	✖ 3. 11 March 2020
	✔ 4. 11 March 2024

Q.81	What is the general form of a combination reaction?
Ans	✖ 1. $A \rightarrow B + C$
	✔ 2. $A + B \rightarrow AB$
	✖ 3. $AB + CD \rightarrow AC + BD$
	✖ 4. $AB \rightarrow A + B$

Q.82	Which city of India organised the World Sustainable Development Summit 2024?
Ans	✖ 1. Jaipur
	✖ 2. Mumbai
	✔ 3. New Delhi
	✖ 4. Hyderabad

Q.83	G, H, I, J, K, L and M live on seven different floors of the same building. The lowermost floor in the building is numbered 1, the floor above it, number 2 and so on, till the topmost floor is numbered 7. H lives on an even numbered floor but not on the second floor. Only three people live between H and M. J lives on one of the floors below H but immediately above M. G lives on one of floors below J. Only three people live between G and K. L lives on one of the floors above J but below I. Who lives on the fifth floor?
Ans	✗ 1. L
	✗ 2. H
	✔ 3. K
	✗ 4. M

Q.84	The sirens of three companies sound together initially and then continue to sound at intervals of 12 minutes, 16 minutes, and 20 minutes, respectively. Over a period of 16 hours and 12 minutes from the time they first sound together, how many times will they sound simultaneously?
Ans	✗ 1. 4 times
	✗ 2. 3 times
	✗ 3. 6 times
	✔ 4. 5 times

Q.85	Which of the following modes of asexual reproduction is used by unicellular organisms exclusively?
Ans	✗ 1. Regeneration
	✔ 2. Binary fission
	✗ 3. Fragmentation
	✗ 4. Sporulation

Q.86	The greatest common divisor (GCD) and least common multiple (LCM) of two numbers are 12 and 480, respectively, and the numbers are in the ratio of 5 : 8. Find the difference between the two numbers.
Ans	✔ 1. 36
	✗ 2. 12
	✗ 3. 24
	✗ 4. 42

Q.87	If 546 apples were distributed among Neeraj, Vidya, and Mohan in the ratio $\frac{1}{6}:\frac{1}{2}:\frac{1}{3}$, how many apples did the Mohan get?
Ans	✗ 1. 202
	✗ 2. 192
	✗ 3. 172
	✔ 4. 182

Q.88	If the average of 9 numbers is 17 and one number is removed, the average of the remaining 8 numbers becomes 15. What is the value of the removed number?
Ans	✗ 1. 39
	✔ 2. 33
	✗ 3. 37
	✗ 4. 35

Q.89	Why is variation in plants important for their survival and evolution?
Ans	✗ 1. It ensures that all plants produce identical offspring.
	✗ 2. It helps plants to grow taller and stronger.
	✔ 3. It allows plants to adapt to changing environmental conditions.
	✗ 4. It reduces competition among plants.

Q.90	Consider a pencil dipped in water in a glass beaker. If the water is replaced by kerosene or turpentine, will the pencil appear displaced to the same extent?
Ans	✗ 1. Yes, the displacement will be the same.
	✗ 2. Yes, it will be more displaced than in water.
	✗ 3. No, the displacement will vary.
	✓ 4. No, the pencil will appear straight.

Q.91	Why is asexual reproduction advantageous for single-celled organisms?
Ans	✗ 1. It requires a mate.
	✗ 2. It increases genetic variability.
	✓ 3. It allows rapid reproduction in favourable conditions.
	✗ 4. It prevents overcrowding.

Q.92	Which among the following organisms reproduce by regeneration method?
Ans	✗ 1. Bryophyllum
	✗ 2. Rhizopus
	✓ 3. Planaria
	✗ 4. Yeast

Q.93	The average price of three items of furniture is Rs 16830. If their prices are in the ratio 3:5:7, the price of the cheapest item (in Rs) is
Ans	✗ 1. 7854
	✗ 2. 5610
	✗ 3. 3366
	✓ 4. 10098

Q.94	The magnetic field inside a solenoid:
Ans	✓ 1. is the same at all points
	✗ 2. is zero at the centre
	✗ 3. varies with distance from the edge
	✗ 4. is maximum at the centre and minimum at the edge

Q.95	What should come in place of the question mark (?) in the given series? 29 38 51 68 89 ?
Ans	✗ 1. 115
	✗ 2. 116
	✓ 3. 114
	✗ 4. 113

Q.96	In $\triangle$ ABC, $DE \parallel AC$, where D and E are the points on sides AB and BC, respectively. If BD = 8 cm and AD = 7 cm, then what is the ratio of the area of $\triangle$ BDE to the trapezium ADEC?
Ans	✗ 1. 161:64
	✗ 2. 65:162
	✓ 3. 64:161
	✗ 4. 162:65

Q.97	Which of the following letter-clusters should replace # and % so that the pattern and relationship followed between the letter-cluster pair on the left side of :: is the same as that on the right side of :: ? **# : NJR :: OKS : %**	
Ans	✗ 1. # = LHP, % = QMV	
	✗ 2. # = LHO, % = QMU	
	✗ 3. # = LHP, % = QNU	
	✓ 4. # = LHP, % = QMU	

Q.98	Why do stars appear to twinkle when viewed from the Earth?	
Ans	✓ 1. Refraction in the Earth's atmosphere	
	✗ 2. Diffraction by clouds	
	✗ 3. Reflection in the atmosphere	
	✗ 4. Scattering by particles	

Q.99	The total surface area of a solid hemisphere is 191 cm^2. Its radius (in cm) is: $Take \ \pi = \dfrac{22}{7}$	
Ans	✗ 1. $\sqrt{\dfrac{1347}{66}}$	
	✗ 2. $\sqrt{\dfrac{1347}{132}}$	
	✓ 3. $\sqrt{\dfrac{1337}{66}}$	
	✗ 4. $\sqrt{\dfrac{1345}{66}}$	

Q.100	What should come in place of the question mark (?) in the given series? **4 24 120 480 ? 2880**	
Ans	✓ 1. 1440	
	✗ 2. 1080	
	✗ 3. 1220	
	✗ 4. 1360	

2024/12/20-11:31:39

Test Date	18/12/2024
Test Time	4:30 PM - 6:00 PM
Subject	RRB JE DMS CMA CS MS

* Note
Correct Answer will carry 1 mark per Question.
Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.
2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : **RRB JE, DMS, CMA, CS, MS CBT-1**

Q.1	Evaluate: 33 ÷ 9 × 3 - 2 × 3
Ans	✗ 1. 8
	✔ 2. 5
	✗ 3. 7
	✗ 4. 4

Q.2	Refer to the following number and symbol series and answer the question that follows. Counting to be done from left to right only. (Left) 3 & ^ 5 7 # 9 % 8 * 4 < 1 $ 2 @ * 6 (Right) How many such symbols are there which are immediately preceded by a number and also immediately followed by another number?
Ans	✔ 1. 5
	✗ 2. 4
	✗ 3. 3
	✗ 4. 2

Q.3	What should come in place of the question mark (?) in the given series based on the English alphabetical order? HFC JHE LJG NLI ?
Ans	✗ 1. PMK
	✔ 2. PNK
	✗ 3. PML
	✗ 4. PNL

Q.4	The Indigo Rebellion took place in _____ during 1859-1860.
Ans	✗ 1. Madras
	✔ 2. Bengal
	✗ 3. Punjab
	✗ 4. Bombay

Q.5	Fleming's Left-Hand Rule is used to determine _____.
Ans	✗ 1. the amount of current flowing through the conductor
	✗ 2. the strength of the magnetic field
	✓ 3. the direction of force on a current-carrying conductor
	✗ 4. the magnitude of the force on a current-carrying conductor

Q.6	Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster DOES NOT belong to that group? (Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)
Ans	✗ 1. IEB
	✗ 2. UQN
	✓ 3. ZWU
	✗ 4. NJG

Q.7	Tarun ranked 21st from the top and 12th from the bottom in his class. How many students are there in his class?
Ans	✗ 1. 31
	✓ 2. 32
	✗ 3. 33
	✗ 4. 34

Q.8	Seven people, W, X, Y, Z, E, F and G, are sitting in a row, facing north. Only two people sit to the right of Y. Only two people sit between Y and F. Only two people sit between E and W. W sits to the immediate left of Y. Z sits to the immediate right of X. Who sits at the third position from the left end of the row?
Ans	✗ 1. W
	✗ 2. Z
	✗ 3. Y
	✓ 4. G

Q.9	The Pala King of Bengal, Dharamapala was defeated by which of the following Rashtrakuta kings?
Ans	✗ 1. Krishna I
	✗ 2. Indra III
	✗ 3. Govinda III
	✓ 4. Dhruva Dharavarsha

Q.10	Which UNESCO World Heritage Site is a cave complex with stunning paintings and sculptures, located in Maharashtra?
Ans	✗ 1. Badami Caves
	✗ 2. Bhimbetka Caves
	✗ 3. Elephanta Caves
	✓ 4. Ajanta Caves

Q.11	What was the venue of the 19th annual meeting of the Secretaries of the Security Councils of the Shanghai Cooperation Organization (SCO)?
Ans	✓ 1. Astana, Kazakhstan
	✗ 2. Dhaka, Bangladesh
	✗ 3. New Delhi, India
	✗ 4. Kathmandu, Nepal

Q.12	A man walks to a viewpoint and returns to the starting point by his car maintaining constant speed and thus takes a total time of 9 hours 15 minutes. He would have gained 2 hours by driving both ways. How long would it have taken for him to walk both ways with same walking speed?
Ans	✗ 1. 12 hours 30 minutes
	✓ 2. 11 hours 15 minutes
	✗ 3. 11 hours 45 minutes
	✗ 4. 10 hours 15 minutes

Q.13	What is the term for the band of colours produced when light is dispersed?
Ans	✗ 1. Absorption
	✗ 2. Refraction
	✓ 3. Spectrum
	✗ 4. Reflection

Q.14	The chemical name for 'Plaster of Paris' is:
Ans	✗ 1. calcium sulphate dihydrate
	✗ 2. calcium chloride hexahydrate
	✓ 3. calcium sulphate hemihydrate
	✗ 4. calcium chloride semihydrate

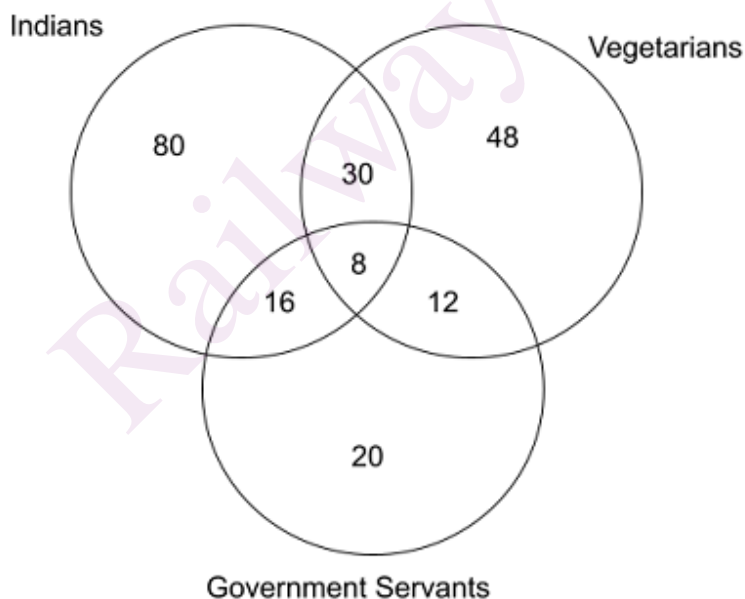| Q.15	AC is a chord of a circle. If X and Y are the two points, on the circumference of the circle, lying on the same side of the chord AC such that $\angle AXC = 58°$, then what is the measure of $2\angle AYC$?
Ans	✗ 1. 58°
	✗ 2. 60°
	✗ 3. 120°
	✓ 4. 116°

Q.16	Study the given diagram carefully and answer the question that follows. The numbers in different sections indicate the number of persons.

How many such government servants are there who are Indians but not vegetarians?

Ans	✗ 1. 12
	✓ 2. 16
	✗ 3. 30
	✗ 4. 8

Q.17	Which of the following letter-clusters should replace # and % so that the pattern and relationship followed between the letter-cluster pair on the left side of :: is the same as that on the right side of ::? **# : WZB :: BEG : %**
Ans	✗ 1. # = EMJ, % = TWY
	✗ 2. # = FHJ, % = TWY
	✗ 3. # = EHJ, % = TWI
	✓ 4. # = EHJ, % = TWY

Q.18	Which of the following is NOT a function of the Prime Minister in India?
Ans	✗ 1. Power to recommend for dissolution of the Parliament
	✓ 2. Appointment of Supreme Court judges
	✗ 3. Removal of Ministers
	✗ 4. Formation of the Council of Ministers

Q.19	The average of seven consecutive odd numbers is 41. What is the smallest of these numbers?
Ans	✗ 1. 37
	✗ 2. 33
	✗ 3. 39
	✓ 4. 35

Q.20	When hydrogen gas is passed through heated black copper (II) oxide, it:
Ans	✗ 1. reduces to form bluish copper solution
	✗ 2. oxidises to form bluish copper solution
	✗ 3. oxidises to form brownish copper metal
	✓ 4. reduces to form brownish copper metal

Q.21	In a certain code language, 'pen pencil eraser' is coded as 'qp fq pw', 'pencil crayon box' is coded as 'bz er qp' and 'box pen board' is coded as 'er bq fg'. (All the codes are two-letter coded only.) What is the code for 'pencil' in that language?
Ans	✗ 1. bz
	✓ 2. qp
	✗ 3. fq
	✗ 4. er

Q.22	In a certain code, 'butter milk ghee' is coded as 'dy la mt', 'biscuit ghee salad' is coded as 'bz qp la' and 'salad butter egg' is coded as 'st bz dy'. All the codes are two-letter codes only. What is ghee coded as?
Ans	✗ 1. mt
	✓ 2. la
	✗ 3. bz
	✗ 4. qp

Q.23	If 1 is added to each odd digit and 2 is subtracted from each even digit in the number 1534876, what will be the sum of the digits which are third from the left and third from the right?
Ans	✗ 1. 8
	✗ 2. 6
	✓ 3. 10
	✗ 4. 14

Q.24	According to clause (2) of Article 239A, any law created by the Parliament for Puducherry shall NOT be considered an amendment to the Constitution for the purposes of which Article?
Ans	✗ 1. Article 371
	✓ 2. Article 368
	✗ 3. Article 370
	✗ 4. Article 356

Q.25	What does Family Planning aim at?
Ans	✗ 1. Preventing all pregnancies by recommending abortion
	✗ 2. Population growth
	✓ 3. Population control
	✗ 4. Increasing pollution

Q.26	What is the average of all the natural numbers from 1 to 94?
Ans	✗ 1. 48
	✓ 2. 47.5
	✗ 3. 47
	✗ 4. 48.5

Q.27	A milk man has 80 litres milk in one container and 68 litres milk in another container. Find the maximum capacity of a container, which can measure milk of either container exact number of times.
Ans	✓ 1. 4 litres
	✗ 2. 6 litres
	✗ 3. 5 litres
	✗ 4. 2 litres

Q.28	If 'P' stands for '×', 'Q' stands for '÷', 'R' stands for '−' and 'S' stands for '+', what will come in place of the question mark (?) in the following equation? **35 S 49 R 6 P 3 P 2 S (72 Q 4) = ?**
Ans	✗ 1. 50
	✓ 2. 66
	✗ 3. 84
	✗ 4. 98

Q.29	Which of the following is a safety device used to prevent excessive current from flowing in electrical circuits?
Ans	✗ 1. Capacitor
	✗ 2. Resistor
	✓ 3. Fuse
	✗ 4. Transformer

Q.30	By selling an article at $\frac{2}{5}$ of its actual selling price, Ramesh incurs a loss of 16%. If he sells it at 86% of its actual selling price, then the profit percentage is:
Ans	✗ 1. 82.6%
	✗ 2. 83.4%
	✓ 3. 80.6%
	✗ 4. 81.8%

Q.31	A question is given, followed by two statements labelled I and II. Identify which of the statements is/are sufficient to answer the question. A, B, C, D and E are sitting in a straight line facing North. Who sits on the extreme right end? (I) Exactly three people sit between B and C. (II) A sits immediately to the left of B.
Ans	✗ 1. Both Statements I and II put together are not sufficient to answer the question.
	✓ 2. Both Statements I and II put together (and not independently) are sufficient to answer the question.
	✗ 3. Data in Statement I alone is sufficient to answer the question, while data in Statement II is not.
	✗ 4. Data in Statement II alone is sufficient to answer the question, while data in Statement I is not.

Q.32	Refer to the following number, symbol series and answer the question. Counting to be done from left to right only. (Left) * 5 2 # # 2 2 7 & % 2 $ & 1 3 $ % $ 5 4 $ $ (Right) How many such numbers are there each of which is immediately preceded by a number and also immediately followed by a number?
Ans	✓ 1. 1
	✗ 2. 3
	✗ 3. 0
	✗ 4. 2

Q.33	When sodium sulphate solution is added to barium chloride solution, precipitate of _____ is formed.
Ans	✓ 1. barium sulphate
	✗ 2. sodium chloride
	✗ 3. sodium hydrogen sulphate
	✗ 4. barium hydrogen sulphate

Q.34	Which of the following kinds of demand exists in the monopolistic competition for the product of an individual firm?
Ans	✗ 1. Perfectly inelastic
	✓ 2. Relatively elastic
	✗ 3. Relatively inelastic
	✗ 4. Perfectly elastic

Q.35	An unsaturated carbohydrate that has a double bond is:
Ans	✗ 1. C_3H_4
	✓ 2. C_3H_6
	✗ 3. C_2H_2
	✗ 4. C_3H_8

Q.36	A trader lost 10% by selling a shirt for ₹850. He will gain x%' by selling it for ₹1530, the value of x is:
Ans	✗ 1. 77
	✗ 2. 52
	✗ 3. 72
	✔ 4. 62

Q.37	Find the mean of the following frequency distribution.

x	5	6	15	9	8
f	10	5	8	10	9

Ans	
	✗ 1. $7\frac{13}{21}$
	✔ 2. $8\frac{13}{21}$
	✗ 3. $9\frac{13}{21}$
	✗ 4. $6\frac{13}{21}$

Q.38	Who among the following was appointed as the Union Minister of Panchayati Raj in June 2024?
Ans	✔ 1. Rajiv Ranjan Singh
	✗ 2. Piyush Goyal
	✗ 3. Shivraj Singh Chouhan
	✗ 4. Jagat Prakash Nadda

Q.39	Who was the scientist credited with the discovery of electromagnetic induction?
Ans	✔ 1. Michael Faraday
	✗ 2. Nikola Tesla
	✗ 3. Isaac Newton
	✗ 4. Thomas Edison

Q.40	An electric fan becomes warm if used continuously for longer time. This happens due to:
Ans	✗ 1. the slow rotation of the fan
	✗ 2. the fast rotation of the fan
	✔ 3. heating effect of the current flowing through the fan
	✗ 4. the high temperature during the summer

Q.41	When washing soda is exposed to hot atmosphere for a long time, it:
Ans	✗ 1. gains water molecules and dissolves in them
	✗ 2. gains heat from the Sun and becomes dry
	✔ 3. loses water molecules and becomes powdery
	✗ 4. loses water molecules but remains in crystal form

Q.42	Ram takes 2 hours more than Ravi to walk 20 km. If Ram doubles his speed, then he is ahead of Ravi by one hour 20 minutes. Find the speed of Ravi (in km/hr).
Ans	✗ 1. 4
	✗ 2. $3\frac{2}{7}$
	✓ 3. $4\frac{2}{7}$
	✗ 4. 3

Q.43	In a displacement reaction, if a more reactive metal displaces a less reactive metal from its salt solution, what is the result?
Ans	✗ 1. The less reactive metal is displaced and the more reactive metal becomes a part of the compound
	✗ 2. The less reactive metal is displaced and solidifies
	✗ 3. The more reactive metal remains unchanged
	✓ 4. Formation of an insoluble salt

Q.44	Select the letter-cluster pair that best represents a similar relationship to the one expressed in the pairs of letter-clusters given below. GHO : LGM HIN : MHL
Ans	✓ 1. NCL : SBJ
	✗ 2. ORK : OQM
	✗ 3. JJS : JIR
	✗ 4. MIH : MHE

Q.45	Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster DOES NOT belong to that group? (Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)
Ans	✗ 1. NTWB
	✗ 2. AGJO
	✓ 3. RXAE
	✗ 4. SYBG

Q.46	What unique feature do the sex chromosomes in humans have compared to other chromosomes?
Ans	✓ 1. They are not always a perfect pair in males.
	✗ 2. They are always perfectly paired.
	✗ 3. They are identical in males and females.
	✗ 4. They are the largest chromosomes in the body.

Q.47	Rakesh starts from Point A and drives 21 km towards the west. He then takes a left turn, drives 23 km, turns left and drives 27 km. He then takes a left turn and drives 28 km. He takes a final left turn, drives 6 km and stops at Point P. How far (shortest distance) and towards which direction should he drive in order to reach Point A again? (All turns are 90° turns only unless specified.)
Ans	✗ 1. 2 km to the south
	✗ 2. 3 km to the south
	✗ 3. 4 km to the south
	✓ 4. 5 km to the south

Q.48	What should come in place of the question mark (?) in the given series?	
	34 34 46 46 58 58 70 70 ?	
Ans	✗ 1. 84	
	✗ 2. 88	
	✗ 3. 90	
	✔ 4. 82	

Q.49	A gardener wants to grow potato plants. He had put a potato with buds (eyes) in the soil. He succeeded to get a new potato plant because:	
Ans	✗ 1. potatoes can be grown by root cuttings	
	✗ 2. there was no animal to eat the potato buds	
	✔ 3. vegetative propagation is by buds (eyes)	
	✗ 4. there are no other plant species in that area	

Q.50	Which of the following states has the highest density of railway network as of 2019-20?	
Ans	✗ 1. West Bengal	
	✗ 2. Punjab	
	✗ 3. Odisha	
	✔ 4. Uttar Pradesh	

Q.51	Below are given two sets of numbers. In each set of numbers, a certain mathematical operation on first number results in the second number. Similarly, certain mathematical operation on second number results in the third number and so on. Which of the given options follows the same set of operations as in question?	
	(NOTE – A two/three digit number cannot be broken into individual digits for operations e.g. if 37 is followed by 10, the operation cannot be 3+7 as a two digit number cannot be broken into individual digits)	
	2 – 14 – 44 – 88 ; 5 – 35 – 65 – 130	
Ans	✔ 1. 7 – 49 – 79 – 158	
	✗ 2. 11 – 121 – 152 – 162	
	✗ 3. 13 – 39 – 122 – 142	
	✗ 4. 14 – 64 – 94 – 144	

Q.52	Two sets of numbers are given below. In each set of numbers, certain mathematical operation(s) on the first number results in the second number. Similarly, certain mathematical operation(s) on the second number results in the third number and so on. Which of the given options follows the same set of operations as in the given sets?	
	(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into their constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)	
	4 - 8 - 16 - 32; 1 - 2 - 4 - 8	
Ans	✗ 1. 6 - 12 - 24 - 28	
	✔ 2. 5 - 10 - 20 - 40	
	✗ 3. 12 - 24 - 28 - 56	
	✗ 4. 3 - 6 - 12 - 20	

Q.53	Radha thinks of a number and subtracts $6\frac{3}{5}$ from it. She multiplies the result by 10. Now the result obtained is four times the same number she thought. Find the number.	
Ans	✗ 1. 12	
	✗ 2. 13	
	✔ 3. 11	
	✗ 4. 14	

Q.54	If A's salary is 31 % more than that of B, then how much percent is B's salary less than that of A (correct to 2 decimal places)?
Ans	✅ 1. 23.66%
	❌ 2. 21.53%
	❌ 3. 27.46%
	❌ 4. 21.74%

Q.55	Which of the following is NOT true about fragmentation?
Ans	❌ 1. It requires the organism to be multicellular.
	❌ 2. Each fragment can grow into a complete individual.
	❌ 3. It involves breaking of the organism into parts.
	✅ 4. It is a form of sexual reproduction.

Q.56	Which of the following is an example of exothermic combination reaction?
Ans	❌ 1. Respiration
	❌ 2. Ammonium chloride dissolved in water
	❌ 3. Photosynthesis
	✅ 4. Quick lime dissolved in water

Q.57	9 men can do a piece of work in 21 days. The number of men required to complete the same work in 3 days is:
Ans	❌ 1. 64
	❌ 2. 62
	❌ 3. 67
	✅ 4. 63

Q.58	In which year was 'Reflections on Mughal Art & Culture' published?
Ans	❌ 1. 2020
	❌ 2. 2022
	✅ 3. 2021
	❌ 4. 2019

Q.59	Which of the following letter-number clusters will replace the question mark (?) in the given series to make it logically complete? HKN 7, CFI 13, XAD 19, SVY 25, NQT 31, ?
Ans	✅ 1. ILO 37
	❌ 2. ILO 36
	❌ 3. JLO 37
	❌ 4. ILP 37

Q.60	The ratio of numbers of girls and boys participating in sports of a school is 1 : 5. If the number of girls is 239, determine the number of boys participating in the sports.
Ans	❌ 1. 1215
	❌ 2. 1225
	✅ 3. 1195
	❌ 4. 1170

Q.61	Find the simple interest (in closest integral ₹) on ₹3000 at 8% per annum rate of interest for the period from 23 February 2024 to 24 April 2024
Ans	✖ 1. 38
	✖ 2. 39
	✖ 3. 41
	✔ 4. 40

Q.62	A rose plant with white flowers was planted in soil by stem cutting without any grafting. The new plant produced similar white flowers. What does it indicate?
Ans	✖ 1. White flowers look good so gardeners plant such roses.
	✖ 2. White flowers are the only type of variety available in rose.
	✖ 3. Stem cutting is a type of sexual reproduction, so there was no variation.
	✔ 4. Stem cutting is a type of asexual reproduction, so there was no variation.

Q.63	When 268 is added to 6K8, the result is 9P6. What is the least possible value of K and P for which 9P6 is divisible by 3?
Ans	✖ 1. K=4; P=6
	✖ 2. K=6; P=9
	✖ 3. K=0; P=3
	✔ 4. K=3; P=0

Q.64	What happens when sodium hydroxide reacts with copper (II) sulfate solution?
Ans	✖ 1. No reaction occurs.
	✖ 2. Sodium sulfate is formed.
	✖ 3. Copper metal is deposited.
	✔ 4. Copper(II) hydroxide precipitates.

Q.65	Select the letter-cluster pair that best represents a similar relationship to the one expressed in the pairs of letter-clusters given below. UQY : WUV MDW : OHT
Ans	✔ 1. SOU : USR
	✖ 2. WTQ : YXO
	✖ 3. NUM : PYK
	✖ 4. LHR : NKO

Q.66	B, C, E, F and H have different heights. F is taller than E but shorter than B. E is taller than H. C is taller than H. More than two people are taller than C. How many people are taller than H?
Ans	✖ 1. One
	✔ 2. Four
	✖ 3. Three
	✖ 4. Two

Q.67	A company earns a profit (in ₹) that is distributed among the company's three partners in the ratio of 4 : 12 : 5. If the difference between the smallest and the largest shares is ₹20208, the total profit (in ₹) of the company is:
Ans	✖ 1. 53097
	✖ 2. 53060
	✔ 3. 53046
	✖ 4. 53096

Q.68	In a certain code language, 'A + B' means 'A is the son of B', 'A − B' means 'A is the brother of B', 'A × B' means 'A is the wife of B' and 'A ÷ B' means 'A is the father of B'. How is S related to H if 'S − D × F + G ÷ H'?
Ans	✗ 1. Wife's brother
	✗ 2. Brother's wife's father
	✔ 3. Brother's wife's brother
	✗ 4. Wife's father

Q.69	The reactants that are used for the production of bleaching powder are:
Ans	✗ 1. CaO + Cl
	✔ 2. $Ca(OH)_2 + Cl_2$
	✗ 3. $CaO + Cl_2$
	✗ 4. $CaOH + Cl_2$

Q.70	The mean marks of the following distribution is:

Marks Obtained	No. of Students
28	8
12	12
57	18
85	13

Ans	✔ 1. 49
	✗ 2. 53
	✗ 3. 39
	✗ 4. 43

Q.71	The average price of three items of furniture is Rs 16860. If their prices are in the ratio 3:5:7, the price of the cheapest item (in Rs) is
Ans	✗ 1. 7868
	✔ 2. 10116
	✗ 3. 3372
	✗ 4. 5620

Q.72	What type of image does a concave lens form when an object is placed at infinity?
Ans	✗ 1. Real, inverted and same size
	✔ 2. Virtual, erect and point sized
	✗ 3. Virtual, erect and larger
	✗ 4. Real, erect and point sized

Q.73	Which of the following is the female germ cell in plants?
Ans	✗ 1. Cells outside the ovule
	✗ 2. Cells in the centre of ovule
	✔ 3. Egg cell
	✗ 4. Cell opposite to egg cell in an ovule

Q.74	Which of the following plants propagates through runners?
Ans	✗ 1. Jasmine
	✗ 2. Potato
	✔ 3. Strawberry
	✗ 4. Rose

Q.75	An object is placed at 30 cm from a convex mirror with a focal length of 15 cm. Calculate the image distance (v) using the mirror formula.
Ans	✗ 1. 15 cm
	✗ 2. −15 cm
	✔ 3. 10 cm
	✗ 4. −10 cm

Q.76	A theater sold 500 tickets to a concert. The tickets for adults cost $20 each, and the tickets for children cost $12 each. If the total revenue was $8,000, how many adult tickets were sold?
Ans	✗ 1. 200
	✔ 2. 250
	✗ 3. 350
	✗ 4. 300

Q.77	A pipe can fill a tank in 18 hours. Another pipe can empty the filled tank in 21 hours. If both the pipes are opened simultaneously, then the time (in hours) in which the tank will be filled is:
Ans	✔ 1. 126
	✗ 2. 128
	✗ 3. 129
	✗ 4. 127

Q.78	Find the value of $0.3\overline{6} + 0.7\overline{23}$.
Ans	✗ 1. $1\dfrac{41}{495}$
	✔ 2. $1\dfrac{89}{990}$
	✗ 3. $1\dfrac{26}{33}$
	✗ 4. $1\dfrac{31}{330}$

Q.79	The front face of a circular loop of a wire is the North Pole; the direction of current in this face of the loop will be:
Ans	✗ 1. towards north
	✔ 2. anti-clockwise
	✗ 3. towards south
	✗ 4. clockwise

Q.80	Each of P, Q, R, S, T, U and V has an exam on a different day of a week starting from Monday and ending on Sunday of the same week. Only five people have exams after P. Only three people have exams before T. Q has the exam immediately after V but before U. S does not have the exam on Monday. How many people have exams between Q and R?
Ans	✗ 1. Three
	✗ 2. Two
	✓ 3. Four
	✗ 4. One

Q.81	Simplify the given expression. (1 + cos A) (cosec A − cot A)
Ans	✗ 1. tan A
	✗ 2. cosec A
	✗ 3. sec A
	✓ 4. sin A

Q.82	Chiang Mai city, the most polluted city in the world as of March 2024, is located in which country?
Ans	✗ 1. Japan
	✓ 2. Thailand
	✗ 3. Vietnam
	✗ 4. China

Q.83	Neutralisation reaction is a type of:
Ans	✗ 1. combination reaction
	✗ 2. decomposition reaction
	✗ 3. displacement reaction
	✓ 4. double displacement reaction

Q.84	A number when increased by 50 %', gives 2970. The number is:
Ans	✓ 1. 1980
	✗ 2. 5940
	✗ 3. 3960
	✗ 4. 990

Q.85	Nita is pregnant, but loves to eat junk food. Her doctor advised her to eat salads and fruits. The reason for this advice is:
Ans	✗ 1. junk food is tasty, but leads to obesity
	✓ 2. the nutrients in the mother's blood nourishes the growing baby
	✗ 3. junk food is costly in comparison to salad and fruits
	✗ 4. the mother's blood has no role in the growth of a baby

Q.86	If 330 persons can complete the construction of a shopping complex in 50 days, how many persons are required to complete the same work in 30 days?
Ans	✓ 1. 550
	✗ 2. 450
	✗ 3. 198
	✗ 4. 505

Q.87	What should come in place of the question mark (?) in the given series?
	85 94 108 127 151 ?
Ans	✗ 1. 170
	✗ 2. 175
	✓ 3. 180
	✗ 4. 185

Q.88	A lens has _____ principal foci.
Ans	✗ 1. 4
	✗ 2. 1
	✓ 3. 2
	✗ 4. 3

Q.89	Article 24 of the Indian Constitution prohibits the employment of children below the age of _____ years in any factory, mine or other hazardous activities.
Ans	✗ 1. 12
	✓ 2. 14
	✗ 3. 18
	✗ 4. 16

Q.90	The Indian Space Research Organisation (ISRO) celebrated its 55th foundation day on 15 August 2024 by launching which of the following satellites?
Ans	✗ 1. EOS-06
	✗ 2. EOS-07
	✓ 3. EOS-08
	✗ 4. EOS-04

Q.91	A man sold an article for ₹481 by first giving a d% discount on its marked price, and then another discount having the same nominal value (in ₹). If the marked price of the article is ₹1924, then what is the value of d?
Ans	✗ 1. 42.5
	✓ 2. 37.5
	✗ 3. 32
	✗ 4. 33

Q.92	Find the total time taken by boat to travel upstream and downstream, if the distance travel in each direction (upstream and downstream) is 495km. If speed of boat is 32 km/h and speed of current is 23 km/h.
Ans	✗ 1. 62 hours
	✓ 2. 64 hours
	✗ 3. 72 hours
	✗ 4. 56 hours

Q.93	An electric refrigerator rated 400 W operates 8 hours/day. What is the cost of the energy to operate it for 30 days at ₹3.00 per kW h?
Ans	✗ 1. ₹400
	✗ 2. ₹36
	✓ 3. ₹288
	✗ 4. ₹9.6

Q.94	A cube of side 5 cm is cut into smaller cubes of side 1 cm. What is the ratio of the total surface area of the larger cube and the sum of the total surfaces of all the smaller cubes?
Ans	✔ 1. 1 : 5
	✘ 2. 1 : 3
	✘ 3. 2 : 5
	✘ 4. 2 : 3

Q.95	Hangul, also known as Kashmir Stag, can be found in _____.
Ans	✘ 1. Campbell Bay
	✘ 2. Dudhwa
	✘ 3. Chandoli
	✔ 4. Dachigam

Q.96	Which of the following is NOT a property of a regular polygon?
Ans	✘ 1. All sides are of equal length.
	✘ 2. Angles at the centre by all sides are equal.
	✘ 3. The angle made by each side at the centre is 90°, if it is a regular polygon with four sides.
	✔ 4. The angle made by each side at the centre is 60°, if it is a regular polygon with eight sides.

Q.97	If the interest earned during the 2nd year on a certain sum is ₹4719, and the rate of interest is 10% per annum compounded annually, then the sum is:
Ans	✘ 1. ₹42045
	✔ 2. ₹42900
	✘ 3. ₹41905
	✘ 4. ₹42445

Q.98	Who made history by becoming the oldest Indian to swim across the English Channel in August 2024?
Ans	✘ 1. Suyash Jadhav
	✘ 2. Virdhawal Khade
	✘ 3. Srihari Nataraj
	✔ 4. Siddhartha Agarwal

Q.99	Which of the following bacterial infections is considered a sexually transmitted disease (STD)?
Ans	✔ 1. Gonorrhoea
	✘ 2. Typhoid
	✘ 3. Pneumonia
	✘ 4. Tuberculosis

Q.100	The genetic constitution of a child getting an X bearing sperm from the father will be:
Ans	✘ 1. 46+XX
	✘ 2. 46+XY
	✔ 3. 44+XX
	✘ 4. 44+XY

2024/12/20-11:21:30