



Aakash

Medical | IIT-JEE | Foundations

(Divisions of Aakash Educational Services Pvt. Ltd.)

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Time : 3 Hours

Answers & Solutions

Max. Marks : 200

for

NTSE (Stage-I) 2017-18

INSTRUCTIONS TO CANDIDATES

- Use blue/black ball point pen only. There is no negative marking.
- This test booklet contains 200 questions of one mark each. All the questions are compulsory.
- Part-I : MAT : 1 - 50 questions
Part-II : Language : 51 - 100 questions
Part-III : SAT : 101 - 200 questions
- Answer each question by darkening the one correct alternative among the four choices on the OMR Sheet with blue/black ball point pen.

Example :

Q. No.	Alternatives
Correct way :	1 ① ② ● ④
Q. No.	Alternatives
Wrong way :	1 ⊗ ⊕ ③ ④

Student must darkening the right oval only after ensuring correct answer on OMR Sheet.

- Disparity in mentioning (SC, ST & PH) in application form and OMR Sheet can make your candidature invalid.
- Students are not allowed to scratch/ alter/ change out an answer once marked on OMR Sheet, by using white fluid/ eraser/ blade/ tearing/ wearing or in any other form.
- Separate Sheet has been provided for rough work in this test booklet.
- Please handover the OMR Sheet to the invigilator before leaving the Examination Hall.
*Take all your question booklets with you.
- Darken completely the ovals of your answers on OMR Sheet in the time limit allotted for that particular paper.
- Your OMR Sheet will be evaluated through electronic scanning process. Incomplete and incorrect entries may render your OMR Sheet invalid.
- Use of electronic gadgets, calculator, mobile etc., is strictly prohibited.

PART-I : MENTAL ABILITY TEST (MAT)

1. The value of $\frac{1}{1+\sqrt{2}} + \frac{1}{\sqrt{2}+\sqrt{3}} + \frac{1}{\sqrt{3}+\sqrt{4}} + \frac{1}{\sqrt{4}+\sqrt{5}} + \frac{1}{\sqrt{5}+\sqrt{6}} + \frac{1}{\sqrt{6}+\sqrt{7}} + \frac{1}{\sqrt{7}+\sqrt{8}} + \frac{1}{\sqrt{8}+\sqrt{9}}$ is
- (1) 4 (2) 2
(3) 0 (4) 1

Answer (2)

Sol. $\frac{1}{\sqrt{2}+1} + \frac{1}{\sqrt{3}+\sqrt{2}} + \frac{1}{\sqrt{4}+\sqrt{3}} + \dots + \frac{1}{\sqrt{9}+\sqrt{8}}$
 $\sqrt{2}-1 + \sqrt{3}-\sqrt{2} + \sqrt{4}-\sqrt{3} + \dots + \sqrt{8}-\sqrt{7} + \sqrt{9}-\sqrt{8}$
 $= \sqrt{9}-1 = 2$

2. If $5 \tan \theta = 3$, then $\frac{5 \tan \theta - 3 \cos \theta}{5 \sin \theta + 3 \cos \theta} =$ _____
- (1) 0 (2) $\frac{5}{3}$
(3) $\frac{3}{5}$ (4) $\frac{4}{5}$

Answer (*)

3. A regular polygon is drawn with 35 diagonals. Its interior angle will be
- (1) 154° (2) 164°
(3) 144° (4) None of these

Answer (3)

Sol. $\frac{x(x-3)}{2} = 35$

$x^2 - 3x - 70 = 0$

$x^3 - 10x + 7x - 70 = 0$

$(x-10)(x+7) = 0$

$x = 10$

Each interior angle = $\frac{(x-2)180}{x} = \frac{8 \times 180}{10} = 144^\circ$

4. If \times means $-$, $+$ means \div , $-$ means \times and \div means $+$ then $15 - 2 \div 90 + 90 \times 100 = ?$
- (1) 190 (2) 180
(3) 90 (4) -60

Answer (4)

Sol. $15 \times 2 + 90 \div 90 - 100$
 $\Rightarrow 30 + 10 - 100$
 $\Rightarrow 40 - 100 = -60$

5. If one root of quadratic equation $(K+1)x^2 - 5x + 2K = 0$ is reciprocal of other then value of K is
- (1) 2 (2) 0
(3) -1 (4) 1

Answer (4)

Sol. $\alpha \times \frac{1}{\alpha} = \frac{2K}{K+1}$

$= 2K = K + 1$

$K = 1$

6. What will be the ratio of volume of cube is to volume of sphere inscribed in the cube?
- (1) $3 : \pi$ (2) $6 : \pi$
(3) $6 : 5$ (4) $2 : \pi$

Answer (2)

Sol. $\frac{\text{Volume of cube}}{\text{Volume of sphere}} = \frac{a^3}{\frac{4}{3} \times \pi \left(\frac{a}{2}\right)^3}$
 $= \frac{a^3 \times 24}{4\pi a^3} = \frac{6}{\pi}$

7. If α, β are the roots of the equation $2x^2 - 5x + 16 = 0$

then the value of $\left(\frac{\alpha^2}{\beta}\right)^{\frac{1}{3}} + \left(\frac{\beta^2}{\alpha}\right)^{\frac{1}{3}}$ is

- (1) $\frac{1}{4}$ (2) $\frac{5}{4}$
(3) $\frac{1}{3}$ (4) $\frac{5}{12}$

Answer (2)

Sol. $2x^2 - 5x + 16 = 0$

$\alpha + \beta = \frac{5}{2} \quad \alpha\beta = 8$

$\left(\frac{\alpha^2}{\beta}\right)^{\frac{1}{3}} + \left(\frac{\beta^2}{\alpha}\right)^{\frac{1}{3}}$

$\Rightarrow \frac{\alpha^{\frac{2}{3}}}{\beta^{\frac{1}{3}}} + \frac{\beta^{\frac{2}{3}}}{\alpha^{\frac{1}{3}}} = \frac{\alpha + \beta}{(\alpha\beta)^{\frac{1}{3}}}$

$= \frac{5}{\frac{1}{(8)^{\frac{1}{3}}}} = \frac{5}{2 \times 2} = \frac{5}{4}$

8. Divisor is 10 times of quotient and 10 times of remainder. If quotient is 10 then what is divided?
 (1) 1010 (2) 1100
 (3) 1001 (4) 101

Answer (1)

Sol. Divisor = 10Q

Divisor = 10R

Q = 10

Divisor = 100

R = 10

Dividend = $100 \times 10 + 10 = 1010$

9. Value of $[(0.111)^3 + (0.222)^3 - (0.333)^3 + (0.333)^2(0.222)]^2$ will be
 (1) 222 (2) 0
 (3) 333 (4) 2

Answer (2)

Sol. $[(0.111)^3 + (0.222)^3 - (0.333)^3 + (0.333)^2(0.222)]^2$

$a^3 + b^3 + c^3 = 3abc$ if $a + b + c = 0$

$[3 \times 0.111 \times 0.222 \times (-0.333) + 0.333 \times 0.333 \times 0.222]^2$

$[-3 \times 0.111 \times 0.222 \times 0.333 + 3 \times 0.111 \times 0.222 \times 0.333]^2$

= 0

10. If n is a natural number the $9^{2n} - 4^{2n}$ is always divisible by
 (1) 13 (2) Both 5 and 13
 (3) 5 (4) None of the above

Answer (2)

Sol. $9^{2n} - 4^{2n}$

$81^n - 16^n \Rightarrow a^n - b^n$ is always divisible by $(a - b)$

$(81 - 16) = 65$

\therefore So factors are both 5 and 13.

11. If sum of LCM and HCF of two number is 50 and their LCM is 20 more than their HCF, then the product of two numbers will be
 (1) 525 (2) 425
 (3) 625 (4) 325

Answer (1)

Sol. LCM + HCF = 50

LCM = HCF + 20

HCF + 20 + HCF = 50

2HCF = 30

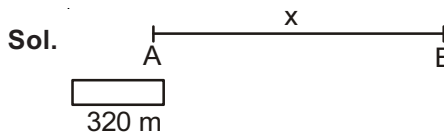
HCF = 15

\therefore LCM = 35

\therefore Product of two numbers = $35 \times 15 = 525$

12. A 320 m long train moving at an average speed of 120 km/h crosses a platform in 24 seconds. A man crossed the same platform in 4 minutes. The speed of the man in m/s
 (1) 2.0 (2) 2.4
 (3) 1.6 (4) 1.5

Answer (1)



Speed of train = 120 km/hr = $120 \times \frac{5}{18} = \frac{100}{3}$ m/s

Time = $\frac{\text{Distance}}{\text{Speed}}$

$$24 = \frac{320 + x}{\frac{100}{3}}$$

$$320 + x = 24 \times \frac{100}{3}$$

$$x = 480 \text{ m}$$

Speed of man = $\frac{480}{240} = 2 \text{ m/s}$

13. If $\frac{a^{n+1} + b^{n+1}}{a^n + b^n}$ is the AM (arithmetic mean) between 'a' and 'b', then, find the value of n
 (1) 1 (2) 3
 (3) 2 (4) 0

Answer (4)

Sol. AM of a and b is $\frac{a+b}{2} = \frac{a^{n+1} + b^{n+1}}{a^n + b^n}$

Which is at n = 0

14. In a certain office, $\frac{1}{3}$ of the workers are women, $\frac{1}{2}$ of the same are married and $\frac{1}{3}$ of the married women have children. If $\frac{3}{4}$ of the men are married and $\frac{2}{3}$ of the married men have children, then what part of worker are without children?
 (1) $\frac{5}{18}$ (2) $\frac{4}{9}$
 (3) $\frac{11}{18}$ (4) $\frac{17}{36}$

Answer (3)

Sol. Let total number of workers x .

$$\text{Women} \Rightarrow \frac{x}{3}$$

$$\text{Men} \Rightarrow \frac{2}{3}x$$

$$\text{Married women} \Rightarrow \frac{x}{6}$$

$$\text{Married men} \Rightarrow \frac{1}{2}x$$

$$\text{Married women with children} \Rightarrow \frac{x}{18}$$

$$\text{Married men with children} \Rightarrow \frac{x}{3}$$

$$\therefore \text{Total worker without children} = x - \left(\frac{x}{18} + \frac{x}{3} \right) = \frac{11}{18}x$$

15. If in a business, Alok gains 75% more profit than Akash, then by what percentage profit of Akash is less than the profit of Alok?

- (1) 25% (2) 12.63%
(3) 30.8% (4) 42.85%

Answer (4)

Sol. Profit of Akash = x

$$\text{Profit of Alok} = x + \frac{75}{100}x = \frac{7x}{4}$$

$$\Rightarrow \frac{\frac{7x}{4} - x}{\frac{7x}{4}} \times 100$$

$$\frac{3}{7} \times 100 = 42.85\%$$

16. The height of three towers are in the ratio of 5 : 6 : 7. If a spider takes 15 minutes to climb the smallest tower, how much time it will take to climb the highest one?

- (1) 15 minutes (2) 18 minutes
(3) 21 minutes (4) 54 minutes

Answer (3)

Sol. $H_1 : H_2 : H_3 = 5 : 6 : 7$

15 minutes to climb tower of height $5x$

\therefore 21 minutes to climb tower of height $7x$

17. The two vertices of a triangle are $(4, -2)$ and $(2, -6)$. If centroid of a triangle is $(0, 1)$ then third vertex of triangle will be

- (1) $(-6, 11)$ (2) $(11, -6)$
(3) $(6, -11)$ (4) $(6, 11)$

Answer (1)

$$\text{Sol. } x = \frac{x_1 + x_2 + x_3}{3} \quad y = \frac{y_1 + y_2 + y_3}{3}$$

$$0 = \frac{4 + 2 + x_3}{3} \quad 1 = \frac{-2 - 6 + y_3}{3}$$

$$x_3 = -6 \quad y_3 = 11$$

$$(-6, 11)$$

18. If $\sin\alpha, \cos\alpha, \tan\alpha$ are in GP, GP means $\cos^2\alpha = \sin\alpha \cdot \tan\alpha$ then $\cot^6\alpha - \cot^2\alpha =$

- (1) 1 (2) 0
(3) 4 (4) 2

Answer (1)

Sol. $\cos^2\alpha = \sin\alpha \tan\alpha$

$$\cos^3\alpha = \sin^2\alpha$$

$$\cos^6\alpha = \sin^4\alpha$$

$$\Rightarrow \cot^6\alpha - \cot^2\alpha$$

$$\Rightarrow \frac{\cos^6\alpha}{\sin^6\alpha} - \cot^2\alpha$$

$$\Rightarrow \frac{1}{\sin^2\alpha} - \frac{\cos^2\alpha}{\sin^2\alpha} = \frac{1 - \cos^2\alpha}{\sin^2\alpha} = \frac{\sin^2\alpha}{\sin^2\alpha} = 1$$

19. Eight members of a group shake hand with one another once. How many hand shakes were done altogether?

- (1) 64 (2) 16
(3) 28 (4) 18

Answer (3)

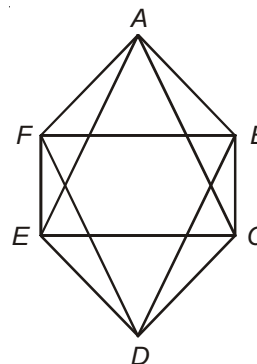
Sol. Number of hand shakes = ${}^8C_2 = \frac{8 \times 7}{2} = 28$

20. Three of the six vertices of a regular hexagon are chosen at random. The probability that triangle formed by these vertices is equilateral is

- (1) $\frac{1}{20}$ (2) $\frac{1}{10}$
(3) $\frac{1}{5}$ (4) $\frac{1}{2}$

Answer (2)

Sol.



AEC and DBF are equilateral triangles

$$P(E) = \frac{2}{{}^6C_3} = \frac{2}{20} = \frac{1}{10}$$

Direction (Q.30 to Q.31) : Answer the questions based on the following information. Numbers are written on the Chess Board as given below:

	a	b	c	d	e	f	g	h
1	1	2	3	4	5	6	7	8
2	9	10	11	12	13	14	15	16
3	17	18	19	20	21	22	23	24
4	25	26	27	28	29	30	31	32
5	33	34	35	36	37	38	39	40
6	41	42	43	44	45	46	47	48
7	49	50	51	52	53	54	55	56
8	57	58	59	60	61	62	63	64

30. If $a_8 = a_1 + a_2 + a_3 + \dots + a_7$

$b_8 = b_1 + b_2 + b_3 + \dots + b_7$

\vdots
 \vdots
 \vdots

$h_8 = h_1 + h_2 + h_3 + \dots + h_7$

What is $a_8 + b_8 + \dots + h_8 =$ _____

- (1) 2080
(2) 1596
(3) 399
(4) 741

Answer (2)

31. The total number of odd numbers on the white box are

- (1) 8 (2) 16
(3) 24 (4) 32

Answer (2)

Directions : Read the information given below carefully and answer the question

$x + y$ means x is the sister of y.

$x - y$ means x is the son of y.

$x \times y$ means x is the mother of y.

$x \neq y$ means x is the father of y.

$x \div y$ means x is brother of y.

$x = y$ means x is daughter of y.

32. Which of the following alternative means 'F is father of J'?

- (1) $F \div G \neq H \times I - J$
(2) $J = I + H \neq G \div F$
(3) $F + G - H \times I - J$
(4) $J + I - H \times G - F$

Answer (4)

33. Five persons are standing in a line facing North. One of the two persons standing at the extreme ends is a teacher and the other is a businessman. A doctor is standing to the right of a student. A clerk is to left of the businessman. The student is standing between the teacher and the doctor. Counting from the left the doctor is at which place?

- (1) I (2) III
(3) II (4) IV

Answer (2)

Sol. T S D C B
I II III IV V

Directions (Q. No. 34 to 36): Read the information given below:

Ten friends A B C D E F G H I J are sitting on the opposite sides of a rectangular table, five on each side of a pair of opposite sides of the table. J and F are sitting next to each other. B is sitting at middle position on one of the sides and C is sitting as far from B as B is sitting from A. A, B and C are sitting on the same side of the table. G and I are sitting opposite to each other, D is on one of the ends. E has an equal number of persons sitting on his either side. I is sitting to the immediate right of D.

34. Who is sitting opposite to G?

- (1) H (2) I
(3) J (4) A

Answer (2)

35. In between of which two persons I is sitting?

- (1) D - E (2) J - E
(3) B - C (4) D - B

Answer (1)

36. In which of the following pairs, given person cannot be sitting opposite to each other?

- (1) D - C (2) F - C
(3) E - B (4) G - H

Answer (4)

37. A fruit seller does not use currency. Instead of he uses the following exchange rates :

- 10 strawberries = 2 Apples
1 Apple = 2 Bananas
4 Bananas = 1 Mango

On the basis of the above exchange rates, how many strawberries are equal to one mango?

- (1) 4 (2) 8
(3) 10 (4) 12

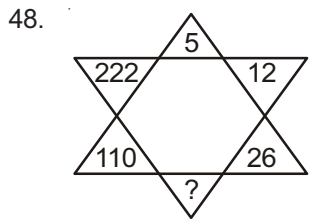
Answer (3)

Sol. 1 Mango = 4 Bananas = 2 Apples = 10 Strawberries

47. If 'SKY WAS BLUE' is 123
'SEA IS BLUE' is 245
'PEOPLE SWIMMING IN SEA' is 4678
'PEOPLE LIKE SKY' is 801 and
'BIRDS IN SKY' is 169. Then 'PEOPLE LIKE BIRDS' will have the number
- (1) 809 (2) 104
(3) 036 (4) 806

Answer (1)

Directions (Q.48 to Q.50) : Find the missing character in each of the following questions



- (1) 54 (2) 51
(3) 48 (4) 44

Answer (1)

Sol. $5 = 5$

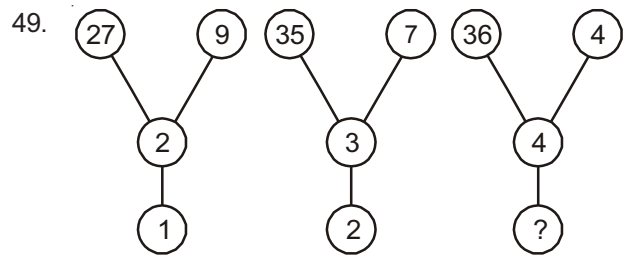
$$12 = 5 + 7 \times 1$$

$$26 = 12 + 7 \times 2$$

$$54 = 26 + 7 \times 4$$

$$110 = 54 + 7 \times 8$$

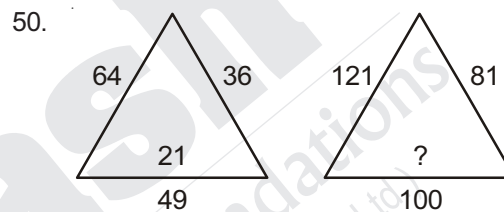
$$222 = 110 + 7 \times 16$$



- (1) 54
(2) 51
(3) 5
(4) 6

Answer (3)

Sol. $27 \div 9 - 2 = 1$
 $35 \div 7 - 3 = 2$
 $36 \div 4 - 4 = 5$



- (1) 40 (2) 30
(3) 20 (4) 10

Answer (2)

Sol. $\sqrt{64} + \sqrt{36} + \sqrt{49} = 21$
 $\sqrt{121} + \sqrt{81} + \sqrt{100} = 30$

PART-II : LANGUAGE TEST

Direction : Choose the word that is opposite in meaning to the given words in question numbers 51–56.

51. Insolent
(a) Timid (b) Soluble
(c) Bold (d) Dissolving
- Answer (a)**
52. Affable
(a) Reckless (b) Rude
(c) Ungrateful (d) Responsible
- Answer (b)**
53. Mitigate
(a) Intensity (b) Barricade
(c) Investigate (d) Personify

Answer (a)*

Sol. It should be 'intensify' instead of 'intensity'.

54. Detrimental
(a) Hurtful (b) Desirable
(c) Profitable (d) Injurious

Answer (c)

55. Exodus
(a) Escape (b) Exit
(c) Arrival (d) Emigrate

Answer (c)

56. Admonish
(a) Reprimand
(b) Chide
(c) Scold
(d) Praise

Answer (d)

Direction : In question numbers 57–62, out of four alternatives, choose the one which best expresses the meaning of the given words.

57. Perseverance

- (a) Vacillation (b) Volatility
(c) Steadfastness (d) Levity

Answer (c)

58. Relinquish

- (a) Recognise (b) Assert
(c) Hold (d) Forgo

Answer (d)

59. Wanton

- (a) Frolicsome (b) Unplayful
(c) Joyless (d) Demure

Answer (a)

60. Exonerate

- (a) Release (b) Guilty
(c) Rusticate (d) Mastermind

Answer (a)

61. Disparate

- (a) Helpless (b) Different
(c) Needy (d) Unaware

Answer (b)

62. Capricious

- (a) Fickle (b) Calm
(c) Careful (d) Forgetful

Answer (a)

Direction : In question numbers 63–69, choose the alternative which expresses the meaning of the given idioms/phrases.

63. To hear through the grapevine

- (a) To learn gardening
(b) To learn about fruits
(c) To learn something officially
(d) To learn something from a rumour

Answer (d)

64. To hit the nail on the head

- (a) To enjoy one's profession
(b) To learn carpentry
(c) To be violent
(d) To do something in an effective way

Answer (d)

65. A piece of cake

- (a) A difficult task (b) A special person
(c) A memorable event (d) An easy task

Answer (d)

66. To spill the beans

- (a) To grow vegetables
(b) To open an old box
(c) To reveal someone's secret
(d) To request for support

Answer (c)

67. An axe to grind

- (a) Grinding store
(b) Selfish purpose
(c) An axe for cutting trees
(d) To take revenge

Answer (b)

68. To beat about the bush

- (a) Not coming to the point
(b) To cut down the bush
(c) To cut expenses
(d) Defeat

Answer (a)

69. To move heaven and earth

- (a) To die
(b) To make every possible effort
(c) To rain heavily
(d) To shift places

Answer (b)

Direction : In question numbers 70-76, sentences are given with blanks to be filled with appropriate word out of four alternatives given :

70. Father divided his property _____ two sons.

- (a) Among (b) To
(c) In (d) Between

Answer (d)

71. Meena repented _____ her mistakes.

- (a) Over (b) Of
(c) For (d) About

Answer (b)

72. I want to dispense _____ the services of my servant.

- (a) Of (b) Off
(c) With (d) About

Answer (c)

73. There are _____ more toys in the box where this came from.
- (a) Little (b) Much
(c) Few (d) Many

Answer (d)

74. He had _____ friends, as he was an aggressive person.
- (a) Few (b) Some
(c) Many (d) Those

Answer (a)

75. My aunt lived in that house _____ five years.
- (a) With (b) For
(c) Since (d) Some

Answer (b)

76. I need _____ more time to complete the assignment.
- (a) Few (b) A Few
(c) A little (d) Little

Answer (c)

Direction : Choose the correct alternative of the verbs given in brackets from question numbers 77-82.

77. Ramesh _____ (be) a teacher since 1994.
- (a) Is (b) Has been
(c) Is being (d) Was

Answer (b)

78. Don't bring her unless she _____ (promise) to behave herself.
- (a) Promised (b) Will promise
(c) Promises (d) Has promised

Answer (c)

79. She _____ (work) since morning and now she wants to take rest.
- (a) Has been working (b) Had working
(c) Was working (d) Had worked

Answer (a)

80. When I reached the theatre, the play _____ (start).
- (a) Had started (b) Starts
(c) Will start (d) To be started

Answer (a)

81. The baby _____ (laugh) with his mother in the video I watched yesterday.
- (a) Laughs (b) Was laughing
(c) Laughed (d) Had been laughing

Answer (b)

82. When he was unmarried, he often _____ (arrive) home late.
- (a) Was arriving (b) Had arrived
(c) Arrived (d) Would arrived

Answer (c)

Direction : In question numbers 83-88, choose the alternative with correct spellings.

83. (a) Accommodation (b) Acomodation
(c) Acumodation (d) Accomodation

Answer (a)

84. (a) Emorous (b) Emorus
(c) Amorous (d) Ammorous

Answer (c)

85. (a) Sorcuror (b) Sorcerer
(c) Sorsuror (d) Sorsurer

Answer (b)

86. (a) Receive (b) Recieve
(c) Receive (d) Riceive

Answer (a)

87. (a) Audeceous (b) Audacious
(c) Audasious (d) Audesious

Answer (b)

88. (a) Diskripency (b) Discrepancy
(c) Discripancy (d) Discripe

Answer (b)

Direction : In question numbers 89-95, out of four alternatives, choose the one which can be substituted for given group of words

89. An unexpected piece of good fortune
- (a) To turn turtle (b) Windfall
(c) Philanthropy (d) Fortunate

Answer (b)

90. Of unknown name
- (a) Synonym (b) Anonymous
(c) Unanimous (d) Incognito

Answer (b)

91. Exclusive possession of anything
- (a) Monopoly (b) Autocratic
(c) Aristocratic (d) Monogamy

Answer (a)

92. A place for the sick to recover health
- (a) Sanatorium (b) Stable
(c) Granary (d) Arsenal

Answer (a)

93. Study of the interaction of people with their environment
- (a) Ecology (b) Ornithology
(c) Calligraphy (d) Cartography

Answer (a)

94. Failing to discharge one's duty
- (a) Recklessness (b) Dereliction
(c) Submission (d) Reluctant

Answer (b)

95. A person who is an expert in fine arts
- (a) Conductor (b) Contemporary
(c) Connoisseur (d) Artist

Answer (c)

Direction : In question numbers 96-100, read the passage and choose the correct answer from the options.

Passage

At every stage, SLV-3 team was blessed with some extraordinary courageous people. Alongwith Sudharkar and Sivarama-krishanan, there was also Sivakaminathan. He was entrusted with bringing the C-Band transponder from Trivandrum to SHAR for integration with the SLV-3. The transponder is a device fitted with the rocket system to give the signals which are powerful enough to help it track the vehicle from the take off site to the final impact point. The SLV-3 launch schedule was dependent on the arrival and integration of this equipment. On landing at the Madras airport, the aircraft which Sivakami was travelling in, skidded and overshot the runway. Dense smoke engulfed the aircraft. Everyone jumped out of the aircraft through emergency exists, and desperately fought to save themselves-all except Sivakami, who stayed in the aircraft till he removed the transponder from his baggage. He was among the last few persons, the others being mostly aircraft crew, to emerge from the smok and he was hugging the transponder close to his chest.

96. The speaker calls Sivakami courageous because.
- (a) He was blessed
(b) He looked after the transponder over his own safety
(c) The team was blessed
(d) The transponder was brought to Chennai by him

Answer (b)

97. The aircraft was in danger because
- (a) It crash landed
(b) It made an emergency landing
(c) It skidded and overshot the runway
(d) It was covered in smoke

Answer (c)

98. Sivakami was the last to come out because
- (a) He stayed back to bring the transponder safety
(b) He was blinded by the smoke
(c) He helped save other passengers
(d) He was in a panic

Answer (a)

99. The transponder was a device that
- (a) Was used to test the rocket
(b) Launched the rocket
(c) Was needed for the final impact
(d) Gave the radar signals

Answer (d)

100. The transponder was needed in time
- (a) For the rocket to be seen as the radar
(b) For the launch to take place
(c) For it to carry out the take off
(d) For it to be integrated to the rocket

Answer (d)

PART-III : SCHOLASTIC APTITUDE TEST (SAT)

101. If a body is in equilibrium under the effect of some non-collinear forces, then the minimum number of such forces acting upon the body are
- (1) 3
(2) 2
(3) 5
(4) 4

Answer (1)

Sol. Minimum three forces are required.

102. A heater coil is cut into two equal parts and only one part is used in the heater the heat generated now will be
- (1) Doubled
(2) Four times
(3) One fourth
(4) Halved

Answer (1)

Sol. $H = \frac{V^2}{R}t$

After cutting equally, length becomes half.

$$R \propto l$$

It means, resistance becomes half.

$$H = \frac{V^2}{\frac{R}{2}}t$$

$$H = 2\frac{V^2}{R}t$$

Heat generated will be doubled.

103. A bar magnet placed in non-uniform magnetic field experiences

- (1) Only torque
- (2) Only force
- (3) Both torque and force
- (4) Neither force nor torque

Answer (3)

Sol. In a non-uniform magnetic field, bar magnet will experience both torque and force.

104. How much water a pump of 2 kW power can raise in one minute to a height of 10 m? ($g = 10 \text{ m/s}^2$)

- (1) 1000 litre
- (2) 1200 litre
- (3) 10 litre
- (4) 2000 litre

Answer (2)

Sol. $P = \frac{mgh}{t}$

$$m = \frac{P \times t}{gh}$$

$$m = \frac{2 \times 10^3 \times 60}{10 \times 10}$$

$$m = 1200 \text{ litre}$$

105. The kinetic energy of a body becomes 4 times of its initial value. The new linear momentum will be

- (1) Same as initial momentum
- (2) Four times the initial momentum
- (3) Two times the initial momentum
- (4) Eight times the initial momentum

Answer (3)

Sol. $KE = \frac{P^2}{2m}$

mass = constant

$$P_f^2 = 2 \text{ KEm}$$

$$P_f = \sqrt{2 \times 4 \text{ KEm}}$$

$$P_f = \sqrt{2 \text{ KEm}}$$

$$P_f = 2P_i$$

Final momentum will be two times the initial momentum.

106. In a simple pendulum mass of bob is m and effecting length is L . Work done on the pendulum in one complete oscillation in gravitational field of earth is

- (1) $\frac{1}{4}mgL$
- (2) $\frac{1}{2}mgL$
- (3) Zero
- (4) mgL

Answer (3)

Sol. It will be zero in complete one oscillation due to gravitational force because displacement of bob will be zero.

107. The mass of earth is 80 times that of moon and its diameter is double that of moon. If the value of acceleration due to gravity on earth is 9.8 m/s^2 , then the value of acceleration due to gravity on moon will be

- (1) 0.98 ms^{-2}
- (2) 0.49 ms^{-2}
- (3) 9.8 ms^{-2}
- (4) 4.9 ms^{-2}

Answer (2)

Sol. $g = \frac{GM}{R^2}$

$$9.8 = \frac{GM}{R^2}$$

$$g' = \frac{GM \times 4}{80 \times R^2}$$

$$= \frac{GM}{R^2} \times \frac{1}{20}$$

$$= \frac{9.8}{20}$$

$$g' = 0.49 \text{ ms}^{-2}$$

108. Two lenses of focal length f_1 and f_2 are kept in contact coaxially. The power of the combination will be

- (1) $\frac{f_1 f_2}{f_1 + f_2}$
- (2) $\frac{f_1 + f_2}{f_1 f_2}$
- (3) $\frac{f_1 f_2}{f_1 - f_2}$
- (4) $f_1 + f_2$

Answer (2)

Sol. If f is focal length of combination

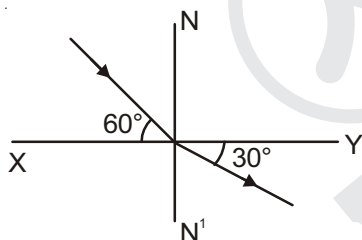
$$\frac{1}{f} = \frac{1}{f_1} + \frac{1}{f_2}$$

We know that $\frac{1}{f} = P$

$$\begin{aligned} \text{So } P &= \frac{1}{f_1} + \frac{1}{f_2} \\ &= \frac{f_2 + f_1}{f_1 f_2} \\ P &= \frac{f_1 + f_2}{f_1 f_2} \end{aligned}$$

Hence, option (2) is correct

109. In figure, a ray of light undergoes refraction from medium A to medium B. If the speed of light in medium A is v , then the speed of light in medium B will be



(1) $\sqrt{3} v$

(2) $\frac{v}{\sqrt{3}}$

(3) $2v$

(4) $\frac{v}{2}$

Answer (1)

Sol. Here

Incident angle $\angle i = 90^\circ - 60^\circ = 30^\circ$

Refractive angle $\angle r = 90^\circ - 30^\circ = 60^\circ$

By Snell's law

$$n_1 \sin i = n_2 \sin r$$

$$\begin{aligned} \frac{n_1}{n_2} &= \frac{\sin r}{\sin i} \\ &= \frac{\sin 60^\circ}{\sin 30^\circ} \\ &= \frac{\sqrt{3} \times 2}{2 \times 1} = \sqrt{3} \end{aligned}$$

$$\frac{n_1}{n_2} = \frac{v_2}{v_1} = \sqrt{3}$$

$$v_2 = \sqrt{3} v_1 = \sqrt{3} v$$

Hence, option (1) is correct

110. A body falls freely from a tower and travels a distance of 40 m in its last two seconds. The height of the tower is (take $g = 10 \text{ m/s}^2$)

(1) 54 m

(2) 45 m

(3) 80 m

(4) 65 m

Answer (2)

Sol. $\frac{1}{2}gt^2 = h$

$$\frac{1}{2}g(t-2)^2 = h'$$

$$h - h' = \frac{1}{2}gt^2 - \frac{1}{2}g(t-2)^2$$

$$= \frac{1}{2}gt^2 - \frac{1}{2}g[t^2 + 4 - 4t]$$

$$40 = \frac{1}{2}g[4t - 4]$$

$$40 = \frac{10}{2}[4t - 4]$$

So, $t = 3\text{ s}$

$$\begin{aligned} h &= \frac{1}{2} \times 10 \times (3)^2 \\ &= 45 \text{ m} \end{aligned}$$

Hence, option (2) is correct

111. The resistance of a wire is R . After melting it is remoulded such that its area of cross-section becomes n times its initial area of cross-section, its new distance will be

(1) nR

(2) $\frac{R}{n}$

(3) n^2R

(4) $\frac{R}{n^2}$

Answer (4)

Sol. $R = \rho \cdot \frac{l}{A}$

$$R' = \rho \cdot \frac{l'}{A'}$$

$$l'A' = lA$$

$$l' = \frac{l}{n}$$

$$R' = \rho \cdot \frac{l}{n \cdot nA} = \frac{1}{n^2} \rho \cdot \frac{l}{A}$$

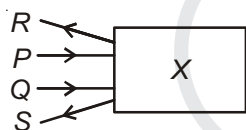
$$R' = \frac{R}{n^2}$$

Hence, option (4) is correct

112. Which of the following is/are true for an ammeter?
- An ammeter always reads lesser than actual current.
 - An ammeter always reads more than actual current.
 - An ammeter is always connected in series because it is a low resistance device.
 - An ammeter is always connected in series because it is a high resistance device.
- (1) Only A (2) A and B
(3) A and C (4) Only D

Answer (3)

113. Two light rays *P* and *Q* are incident on an optical device 'X' which finally goes along 'R' and 'S'. Identify optical device 'X'.



- (1) Concave lens (2) Concave mirror
(3) Convex lens (4) Convex mirror

Answer (4)

114. Work is said to be done if the force and displacement are
- Parallel to each other
 - Opposite to each other
 - Inclined at an angle with each other $\theta (\neq 90^\circ)$
 - All of the above

Answer (4)

115. Which metal is used to connect solar cell to solar panels?
- Gold
 - Silver
 - Copper
 - Aluminium

Answer (2)

Sol. Due to the highest conductivity of silver it is used to connect solar cell to solar panel.

116. What is the correct electronic configuration of Cr? (At. No.: 24)
- $[\text{Ar}]^{18} 4s^1 3d^5$
 - $[\text{Ar}]^{18} 4s^2 3d^4$
 - $[\text{Ar}]^{18} 4s^0 3d^6$
 - None of these

Answer (1)

Sol. Half filled and fully filled orbitals are more stable so, the correct electronic configuration is $[\text{Ar}]^{18} 4s^1 3d^5$

117. Nature of Al_2O_3 (Aluminium oxide) is
- Acidic
 - Basic
 - Amphoteric
 - Neutral

Answer (3)

Sol. Al_2O_3 can react with both acids and bases so, it is amphoteric in nature.

118. What is the pH of dil. HCl solution with conc. 10^{-8} mol/L?
- 7
 - 8
 - 6.98
 - 10

Answer (3)

Sol. In 10^{-8} M HCl solution (dilute)

$$\begin{aligned} \text{Total } [\text{H}^+] &= 10^{-8} + 10^{-7} \text{ (from water)} \\ &= 1.1 \times 10^{-7} \end{aligned}$$

$$\begin{aligned} \text{pH} &= -\log [\text{H}^+] \\ &= -\log (1.1 \times 10^{-7}) \approx 6.98 \end{aligned}$$

119. Which colour appears when few drops of phenolphthalein put into test tube contains lime water?
- Yellow
 - Orange
 - Pink
 - Colourless

Answer (3)

Sol. Phenolphthalein turns pink in the aqueous solution of bases.

120. Which is the correct answer, if $n = 4$ (where n is number of shell) then number of sub shells and electrons present in atom?
- 16, 32
 - 32, 16
 - 32, 32
 - 16, 16

Answer (1)

Sol. For $n = 4$

Number of subshells = 4

\therefore Number of orbitals = 16

\therefore Number of electrons present in atom = 32

The closest answer is 1.

Note: But the question should have term "orbitals" instead of sub shells.

121. During preparation of soap, sodium is used as
- Precipitate the soap
 - Dehydration of soap
 - As a catalyst
 - For smoothness of soap

Answer (1)

Sol. NaCl is used for the precipitation of soap.

122. Buckminster fullerene is

- (1) Isotope of carbon (2) Isobar of carbon
 (3) Allotrope of carbon (4) None of these

Answer (3)

Sol. Buckminster fullerene is an allotrope of carbon.

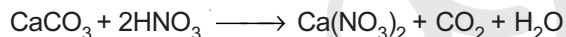
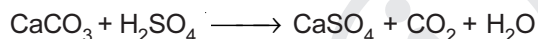
123. Which salts are responsible for yellow colour of Taj Mahal in Agra due to acid rain?

- (1) CaCl_2 and CaSO_4 (2) $\text{Ca}(\text{NO}_3)_2$ and CaSO_4
 (3) $\text{Ca}(\text{NO}_3)_2$ and BaSO_4 (4) CaSO_4 and BaCl_2

Answer (2)

Sol. Calcium nitrate ($\text{Ca}(\text{NO}_3)_2$) and calcium sulphate (CaSO_4) are responsible for yellow colour of Taj Mahal in Agra due to acid rain.

The reactions that take place with limestone (marble) are



124. Which of the following are the Green house gases?

- (1) CO_2 , CH_4 , N_2O and O_3
 (2) CO_2 , Octane, Chlorine, Nitrogen
 (3) Methane, Oxygen, Helium, Neon
 (4) None of these

Answer (1)

Sol. Carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O) and ozone (O_3) are the greenhouse gases present in Earth's atmosphere.

125. Which of the following sub shells are present in atom?

- (1) s, p, d, f (2) a, b, c, d
 (3) s, d, n, g (4) None of these

Answer (1)

Sol. The sub-shells present in an atom are s, p, d, f .

126. Which elements are used in Atomic Reactors to control the speed of neutrons?

- (1) Boron and Cadmium
 (2) Cadmium and Aluminium
 (3) Boron and Iron
 (4) Sodium and Potassium

Answer (1)

127. How many atoms are present in 1 kg of silver? (Atomic mass of silver = 108)

- (1) 2.03×10^{23} atoms (2) 5.57×10^{24} atoms
 (3) 4.27×10^{-23} atoms (4) 6.23×10^{23} atoms

Answer (2)

$$\text{Sol. No. of moles} = \frac{\text{Mass of substance (g)}}{\text{Molar mass}}$$

$$= \frac{1000 \text{ g}}{108 \text{ g}}$$

$$\text{Moles} = 9.259$$

$$\text{No. of atoms} = 9.259 \times 6.022 \times 10^{23} \text{ atoms}$$

$$\boxed{\text{No. of atoms} = 5.57 \times 10^{24} \text{ atoms}}$$

128. Which of the following carry hereditary characters to the off spring in the organism?

- (1) Ribosome (2) Chromosome
 (3) Plasma (4) Lysosome

Answer (2)

Sol. Chromosomes are rod shaped structures which contain information in the form of genes for inheritance of features from parents to next generation.

129. Which organelle of the cell is called the power house of the cell?

- (1) Cell-wall (2) Nucleus
 (3) Mitochondria (4) Complete cell

Answer (3)

Sol. Mitochondria synthesize energy rich molecules that is ATP, therefore they are known as the power house of the cell.

130. Plasma membrane is made up of

- (1) Protein (2) Lipid
 (3) Carbohydrate (4) Both (1) and (2)

Answer (4)

Sol. Plasma membrane is the outermost covering of the cell which is made up of phospholipids bilayer and proteins.

131. Which of the following is the site of fertilisation in humans?

- (1) Uterus (2) Oviduct
 (3) Ovary (4) Vagina

Answer (2)

Sol. Oviduct or fallopian tube is the site of fertilisation in human females.

132. What is the time of rest in the heart?

- (1) Never (2) While sleeping
 (3) Between two beats (4) While doing yogasan

Answer (1)

133. Lacteal present in the villi of the small intestine :

- (1) Help to absorb fatty acids and glycerol
- (2) Secrete enzymes for digestion
- (3) Secrete hormones
- (4) Help to absorb proteins

Answer (1)

Sol. The villi and microvilli greatly increase the surface area of the small intestine and are supplied with a network of capillaries and a large lymph vessel called lacteal. This lacteal absorbs fatty acids and glycerol.

134. How primitive life might have originated on earth was experimentally shown by

- (1) Urey and Miller
- (2) Watson and Crick
- (3) Oparin and Haldane
- (4) Hershey and Chase

Answer (1)

Sol. With the help of spark-discharge apparatus, Harold C. Urey and Stanley L. Miller experimentally proved that life originated from inorganic matter and then from pre-existing life.

135. Bicuspid valve is present in the human heart in between which of the following?

- (1) Right atrium and right ventricle
- (2) Left atrium and left ventricle
- (3) Right and left atria
- (4) Left atrium and systemic aorta

Answer (2)

Sol. In human heart, bicuspid valve [mitral valve] is present between left atrium and left ventricle.

136. Which of the following product of light dependent phase are used during the light independent phase of photosynthesis?

- (1) RUBP and ATP
- (2) H₂O and O₂
- (3) NADPH and ATP
- (4) ATP and O₂

Answer (3)

Sol. Light energy which is absorbed in light dependent phase of photosynthesis is converted into chemical energy in the form of NADPH and ATP. This chemical energy is used in light independent phase to synthesize glucose.

137. Grafting in monocot plants is not possible because they have :

- (1) Parallel venation
- (2) Have only one cotyledon
- (3) Have cambium
- (4) Have scattered vascular bundles

Answer (4)

Sol. Monocots do not have a vascular cambium but have scattered vascular bundles.

138. Haemophilia disease is linked with :-

- (1) Sex chromosome
- (2) Autosome
- (3) Bacteria
- (4) Virus

Answer (1)

Sol. Haemophilia is sex linked [X-linked] recessive disease.

139. The primary building blocks of DNA are

- (1) Nitrogenous base, phosphorus and ribose
- (2) Nitrogenous base, sulphur and deoxyribose
- (3) Nitrogenous base, Phosphorus deoxyribose
- (4) Nitrogenous base, sulphur and ribose

Answer (3)

Sol. DNA is made up of a five carbon sugar called deoxyribose, a phosphate molecule and four different nitrogenous bases – adenine, thymine, cytosine and guanine.

140. Which of the following helps in formation of insulin?

- (1) Islets of Langerhans
- (2) Pituitary gland
- (3) Thyroid gland
- (4) Adrenal gland

Answer (1)

Sol. Islets of Langerhans consist of different kinds of cells i.e. alpha cells, beta cells and delta cells, in which beta cells produce the hormone insulin.

141. The value of n for which the expression $x^4 + 4x^3 + nx^2 + 4x + 1$ becomes a perfect square is

- (1) 3
- (2) 4
- (3) 5
- (4) 6

Answer (4)

Sol. $(x + 1)^4 = x^4 + 4x^3 + 6x^2 + 4x + 1$

∴ The value of n is 6

142. Deepak's salary is reduced by 10% in order to have his salary back to the original amount, it must be raised by how much percent?

- (1) 8%
- (2) 10%
- (3) $11\frac{1}{9}\%$
- (4) $12\frac{3}{7}\%$

Answer (3)

Sol. Let the salary be ₹ 100

After reducing 10% = ₹ 90

Now required percentage = $\left(\frac{100 - 90}{90}\right) \times 100$

$ar(\triangle ABC) = 25$ sq. units
 \Rightarrow Area of $ABCD = 50$ sq. units
 $ar(ADE) + ar(\triangle CEF) = 16 + 9 = 25$ sq. units
 $\therefore ar(AEFB) = 25$ sq. units
 Hence, $ar(AEF)$ must be less than 25 sq. units.
 Hence, **no option** is correct.

153. The edge of a cube is doubled then the percentage increase in the volume of cube is
- (1) 100% (2) 500%
 (3) 300% (4) 700%

Answer (4)

Sol. Let a be the edge of cube.

Volume = a^3

Volume of new cube = $(2a)^3 = 8a^3$

$$\text{Percentage increase} = \frac{\text{Increased}}{\text{Original}} \times 100$$

$$= \frac{7a^3}{a^3} \times 100 = 700\%$$

154. The radii of two cylinders are in the ratio 2:3 and their heights are in the ratio 5:3. The ratio of their volumes is
- (1) 10:17 (2) 20:27
 (3) 10:27 (4) 20:37

Answer (2)

Sol. $\frac{V_1}{V_2} = \frac{\pi(2x)^2 \times 5y}{\pi(3x)^2 \times 3y} = \frac{20}{27}$

155. A cone, a right circular cylinder and a hemisphere standing on equal base and have same height. The ratio of their volumes is
- (1) 1 : 2 : 3 (2) 1 : 3 : 2
 (3) 2 : 3 : 1 (4) 2 : 1 : 3

Answer (2)

Sol. Radius and height of cone, cylinder and hemisphere are same.

Volume of cone : Volume of cylinder : Volume of hemisphere

$$\frac{1}{3}\pi r^2 r \quad : \quad \pi r^2 r \quad : \quad \frac{2}{3}\pi r^3$$

$$1 \quad : \quad 3 \quad : \quad 2$$

156. A shopkeeper sold two bicycle for ₹15000 each, on first he gains 50% and on the other a loss of 25%. His profit or loss is
- (1) 0 (2) 162
 (3) 125 (4) 632

Answer (1)

Sol. Let x and y be the CP of 1st bicycle and 2nd bicycle respectively

Profit % on 1st bicycle = 50%

$\therefore 150\%$ of $x = 15,000$

$x = 10000$

$CP_1 = ₹10000$... (i)

Loss % on 2nd bicycle = 25%

75% of $y = 15000$

$y = 20000$

$CP_2 = ₹20000$

Total CP = ₹(20000 + 10000) = ₹30000

SP = ₹15000 × 2 = ₹30,000

\therefore CP = SP (No profit, No Loss)

157. Average of 8 numbers is 20, that of the first two is 15.5 and that of the next three is $21\frac{1}{3}$, the 6th is less than the 7th by 4 and 7 less than the 8th. The last number is
- (1) 25 (2) 28
 (3) 35 (4) 32

Answer (1)

Sol. Sum of 8 numbers = $20 \times 8 = 160$

Sum of first 5 numbers = $15.5 \times 2 + \frac{64}{3} \times 3$

$$= 31 + 64$$

$$= 95$$

Sum of last 3 numbers = $(160 - 95) = 65$

Let 6th, 7th and 8th number be x, y, z respectively.

$y - x = 4$... (1)

$z - x = 7$... (2)

$z - y = 3$... (3) [From (1) and (2)]

$x + y + z = 65$... (4)

From (3) and (4),

$z - x = 7$

$\Rightarrow z = 25$

158. An equilateral triangle has its side of $3\sqrt{3}$ cm, then radius of its circum-circle is
- (1) 3 cm
 (2) 4 cm
 (3) $2\sqrt{3}$ cm
 (4) 2 cm

Answer (1)

Sol. Circumradius of equilateral triangle

$$= \frac{a}{\sqrt{3}} \text{ where, } a \text{ is the side of equilateral triangle}$$

$$= \frac{3\sqrt{3}}{3} = 3 \text{ cm}$$

159. If $\sqrt[3]{\frac{x}{729}} + \sqrt[3]{\frac{8x}{729}} + \sqrt[3]{\frac{27x}{5832}} = 1$, then find the value of x.

- (1) 1 (2) 8
(3) 3 (4) 4

Answer (2)

Sol. $\sqrt[3]{\frac{x}{729}} + \sqrt[3]{\frac{8x}{729}} + \sqrt[3]{\frac{27x}{5832}} = 1$

$$\Rightarrow \frac{x^{\frac{1}{3}}}{9} + \frac{2x^{\frac{1}{3}}}{9} + \frac{3x^{\frac{1}{3}}}{18} = 1$$

$$\Rightarrow 2x^{\frac{1}{3}} + 4x^{\frac{1}{3}} + 3x^{\frac{1}{3}} = 18$$

$$\Rightarrow x = (2)^3$$

$$\Rightarrow x = 8$$

160. When 10 is subtracted from each of the given observation, the mean is reduced by 60%. If 5 is added to all the given observation, the mean will be

- (1) 25 (2) 30
(3) 60 (4) 65

Answer (2)

Sol. Let the mean be \bar{x} .

According to the question,

$$\bar{x} - 10 = 60\% \text{ of } \bar{x}$$

$$\bar{x} = 25$$

Now, each observation is increased by 5.

$$\therefore \text{New mean} = \bar{x} + 5$$

$$= 25 + 5 = 30$$

161. Kheda Satyagrah was related to

- (1) Against the oppressive plantation system
(2) Movement of cotton mill workers
(3) Relaxation in revenue collection
(4) None of the above

Answer (3)

162. The first Iron and steel plant was set up in India at

- (1) Bhilai (2) Kolkata
(3) Chennai (4) Jamshedpur

Answer (4)

163. Architect of national unification of Prussia was

- (1) Otto Von Bismark
(2) William I
(3) Mazzini
(4) Emmanuel II

Answer (1)

164. What do you mean by "Hind Swaraj"?

- (1) Political Party of Tilak
(2) Book of Mahatma Gandhi
(3) Symbol of Indian National Congress
(4) Political Party of Mahatma Gandhi

Answer (2)

165. The first Historical novel written in Bengal was

- (1) Chemmin (2) Anguriya Binimoy
(3) Chomna Dudi (4) Anandmath

Answer (2)

166. Gandhi-Irwin Pact was held in

- (1) 5th March 1931 (2) 6th Dec. 1931
(3) 13th March 1931 (4) 14th April 1931

Answer (1)

167. Tax lavied by the church comprising $\frac{1}{10}$ th of agriculture produce was

- (1) Livre (2) Taille
(3) Tithe (4) Suffrage

Answer (3)

168. The writer of 'Declaration of the Right of women and citizen is

- (1) Olympe de Gouges (2) Camille Desmoulins
(3) Napoleon Bonapart (4) Henry Mayhew

Answer (1)

169. During the first world war Russia was ruled by

- (1) Tsar Nicholas I (2) Tsar Nicholas II
(3) Tsar Nicholas III (4) Tsar Nicholas IV

Answer (2)

170. Which of the following were known as Axis Powers?

- (1) UK and USA
(2) USSR and UK
(3) Germany, Italy, Japan
(4) Germany, Japan, USA

Answer (3)

171. Who decided to partition Bengal in 1905?

- (1) Lord Clive (2) Lord Bantick
 (3) Lord Curzon (4) Lord Rippen

Answer (3)

172. Which crop takes almost a year to grow?

- (1) Cotton (2) Jute
 (3) Rice (4) Sugarcane

Answer (4)

173. Who proclaimed dams as the temple of Modern India?

- (1) Jawahar Lal Nehru
 (2) Mahatma Gandhi
 (3) Rabindra Nath Tagore
 (4) Subhash Chander Bose

Answer (1)

174. On which river is Sardar Sarovar Dam built?

- (1) Tapi (2) Narmada
 (3) Krishna (4) Kaveri

Answer (2)

175. Which soil type is made up of Lava Flows?

- (1) Red Soil (2) Yellow Soil
 (3) Black Soil (4) Laterite Soil

Answer (3)

176. In which state Kalpakkam Nuclear Power Plant is situated?

- (1) Kerala (2) Karnataka
 (3) Andhra Pradesh (4) Tamil Nadu

Answer (4)

177. Maruti Udyog Limited is an example of which type of industry?

- (1) Joint sector (2) Public sector
 (3) Private sector (4) Co-operative sector

Answer (1)

178. The coriolis force is caused due to

- (1) Wind movement (2) Earth rotation
 (3) Cyclonic depression (4) Jet stream

Answer (2)

179. Width of two tracks of Broad gauge is

- (1) 0.610 mts (2) 0.762 mts
 (3) 1.000 mts (4) 1.676 mts

Answer (4)

180. Which one of the following causes rainfall during winter in N.W. parts of India?

- (1) Cyclonic depression (2) Retreating monsoons
 (3) Western disturbances (4) South-West monsoon

Answer (3)

181. Roof top rain water harvesting is the most common practice in

- (1) Shillong (2) Guwahati
 (3) Imphal (4) Patna

Answer (1)

182. S.T.P. is the abbreviation of

- (1) System Tech Park
 (2) Software Technology Park
 (3) State Thermal Plant
 (4) Software Tech Picket

Answer (2)

183. 'FEDECOR is an organisation from

- (1) India (2) America
 (3) Japan (4) Bolivia

Answer (4)

184. Why was International Monetary Fund established?

- (1) To maintain peace and security
 (2) Lends money to government of member nation when in need
 (3) To implement trade agreements
 (4) To take decision regarding misery and poverty of western countries

Answer (2)

185. A person who is not a member of parliament is appointed as a minister he has to get elected to the houses of parliament within:

- (1) A month
 (2) Three month
 (3) Six month
 (4) Stipulated time by the president

Answer (3)

186. Finance Bill is introduced only in

- (1) Loksabha
 (2) Rajyasabha
 (3) District Council
 (4) Legislative Council

Answer (1)

187. By whom the "Right to Constitutional Remedies" was considered as the soul and heart of Indian constitution?

- (1) Mahatma Gandhi (2) Dr. Rajendra Prasad
(3) B.R. Ambedkar (4) Jawahar Lal Nehru

Answer (3)

188. The distinguish feature of a federal government is :

- (1) National government gives some powers to the provincial government
(2) Power is distributed among the legislature, executive and judiciary
(3) Elected officials exercise supreme power in the government
(4) Governmental power is divided between different level of government

Answer (4)

189. Following is a minority community in Belgium

- (1) Italian-speaking
(2) French-speaking
(3) Dutch-speaking
(4) English-speaking

Answer (2)

190. Who gives recognition to political parties as National parties or regional parties?

- (1) Parliament
(2) President of India
(3) Election Commission of India
(4) Prime Minister of India

Answer (3)

191. The retirement age of the Supreme Court Judge is

- (1) 60 years (2) 65 years
(3) 68 years (4) 70 years

Answer (2)

192. How many seats as reserved for women under Panchayati Raj Election in India?

- (1) 2/3 seats (2) 1/4 seats
(3) 1/3 seats (4) 1/2 seats

Answer (3)

193. What is the procedure that transfers some of the powers of the centre or state government to the local government called?

- (1) Power sharing (2) Decentralisation
(3) Centralisation (4) Democracy

Answer (2)

194. Which of the following is considered as a component of social infrastructure?

- (1) Transport (2) Education
(3) Communication (4) Energy

Answer (2)

195. The revenue and expenditure policy of government is called

- (1) Monetary Policy (2) Economic Policy
(3) Fiscal Policy (4) Foreign Trade Policy

Answer (3)

196. In which five year plan, Mahalanobis Model was adopted in India?

- (1) Fifth (2) First
(3) Second (4) Third

Answer (3)

197. Which treaty provided for a common currency for member countries of European community?

- (1) Brussels Treaty (2) Geneva Convention
(3) Treaty of Versailles (4) Maastricht Treaty

Answer (4)

198. Which bank first introduced credit card in India?

- (1) Central Bank of India (2) State Bank of India
(3) ICICI Bank (4) HDFC Bank

Answer (1)

199. The Chhota Nagpur Plateau famous for its mineral deposits is in which state?

- (1) Uttar Pradesh (2) Jharkhand
(3) Madhya Pradesh (4) Orissa

Answer (2)

200. What is the name given to an economy which has no relation with rest of the world?

- (1) Capitalist Economy (2) Mixed Economy
(3) Socialist Economy (4) Closed Economy

Answer (4)

