

**SAMPLE
PAPERS**



National Admission Test

FOR STUDENTS CURRENTLY IN CLASS

9TH

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Sample Paper - 3 Year Program

Admission & Scholarship Test

Duration : 3.0 Hrs

Maximum Marks: 305

PAPER SCHEME :

- The paper contains **60 Objective Type Questions** divided into three sections: **Section - I, Section – II and Section – III**.
- Section I** contains **10 Multiple Choice Questions (1-10)** based on Mental Aptitude. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE CHOICE is correct**.
- Section II** contains **35 Multiple Choice Questions (11-45)** based on Mathematics. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE CHOICE is correct**.
- Section III** contains **15 Multiple Choice Questions (46-60)** based on Science. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE CHOICE is correct**.

MARKING SCHEME :

- Section I** : For each question, **4 marks** will be awarded for correct answer and **-1 negative marking** for incorrect answer.
- Section II** : For each question, **5 marks** will be awarded for correct answer and **-1 negative marking** for incorrect answer.
- Section III** : For each question, **6 marks** will be awarded for correct answer and **-1 negative marking** for incorrect answer.

GENERAL INSTRUCTIONS :

- For answering a question, an **ANSWER SHEET (OMR SHEET)** is provided separately. Please fill your **Name, Roll Number, Seat ID, Date of Birth** and the **PAPER CODE** properly in the space provided in the **ANSWER SHEET**. IT IS YOUR OWN RESPONSIBILITY TO FILL THE OMR SHEET CORRECTLY.
- A blank space has been provided on each page for rough work. You will not be provided with any supplement or rough sheet.
- The use of log tables, calculator and any other electronic device is strictly prohibited.
- Violating the examination room discipline will immediately lead to the cancellation of your paper and no excuses will be entertained.
- No one will be permitted to leave the examination hall before the end of the test.
- Please submit both the question paper and the answer sheet to the invigilator before leaving the examination hall.

SUGGESTIONS:

- Before starting the paper, spend 2-3 minutes to check whether all the pages are in order and report any issue to the invigilator immediately.
- Try to attempt the Sections in their respective order.
- Do not get stuck on a particular question for more than 3-4 minutes. Move on to a new question as there are 60 questions to solve.

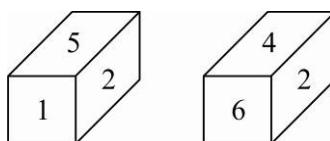
SECTION - I [MENTAL APTITUDE]

- Three out of the four options are same in a certain way and so form a group. Find the odd option that does not belong to the group.
 (A) 3:15 (B) 6:30 (C) 12:42 (D) 9:45
- The 2 groups of letters on the left have some relationship between them. Replace the '?' with a group of letters so that the 2 groups of letters on the right have the same relationship.
 $EJO:GNU :: FLR:?$
 (A) HPY (B) GNX (C) GPU (D) HPX
- What is the next term in the given series ?
 97, 103, 109, 127,
 (A) 131 (B) 150 (C) 156 (D) 137
- Which of the given group of letters will complete the given series ?
 $a_cc_bbc_a_c$
 (A) accb (B) abcb (C) baab (D) abba
- A cube of side 4cm is painted black on the pair of one opposite surfaces, blue on the pair of another opposite surfaces and red on the remaining pair of opposite surfaces. The cube is now divided into smaller cubes of equal side of 1cm each. How many smaller cubes have atleast 2 sides painted ?
 (A) 16 (B) 24 (C) 32 (D) 36
- $$\begin{array}{r}
 & 4 & b & c \\
 & a & 3 & 4 \\
 \hline
 1 & 8 & a & 4 \\
 1 & 3 & c & 8 \\
 9 & 1 & a \\
 \hline
 1 & 0 & c & 7 & 0 & 4
 \end{array}$$

What is b ?

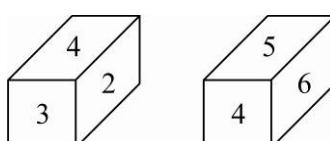
 (A) 3 (B) 4 (C) 5 (D) 6
- What is the next term in the given series 11, 13, 17, 19, ?
 (A) 23 (B) 25 (C) 27 (D) 30
- What is the next term in the given series 27, 64, 125, 216, ?
 (A) 300 (B) 299 (C) 343 (D) 450

9. The figures given below show the 2 different positions of a dice.



Which number will come opposite to 2 ?

- (A) 5 (B) 1 (C) 6 (D) 3
10. The figures given below show the 2 different positions of a dice.

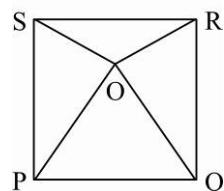


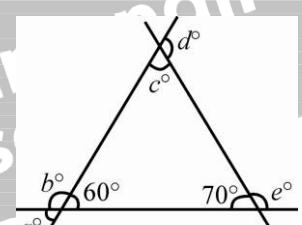
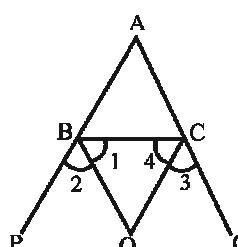
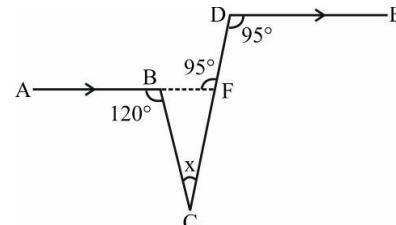
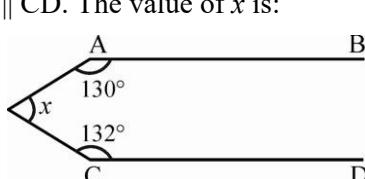
Which number will come opposite to 1 ?

- (A) 5 (B) 2 (C) 4 (D) 6

SECTION - II [MATHEMATICS]

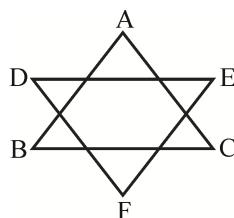
11. The value of $\frac{1}{(216)^{-\frac{2}{3}}} + \frac{1}{(256)^{-\frac{3}{4}}} + \frac{1}{(32)^{-\frac{1}{5}}}$ is:
- (A) 102 (B) 105 (C) 107 (D) 109
12. The LCM of two numbers is x and their HCF is y . The product of two number is:
- (A) $\frac{x}{y}$ (B) $\frac{y}{x}$ (C) $x + y$ (D) xy
13. The value of $\frac{2^{m+3} \times 3^{2m-n} \times 5^{m+n+3} 6^{n+1}}{6^{m+1} \times 10^{n+3} \times 15^m}$ is equal to:
- (A) 0 (B) 1 (C) 2^m (D) None of these
14. An alloy of gold, silver and bronze contains 90% bronze, 7% gold and 3% silver. A second alloy of bronze and silver only is melted with the first and the mixture contains 85% of bronze, 5% of gold and 10% of silver. Find the percentage of bronze in the second alloy.
- (A) 75% (B) 72.5% (C) 70% (D) 67.5%
15. $PQRS$ is square and POQ is an equilateral triangle.
What is the value of angle SOR ?
- (A) 150°
(B) 120°
(C) 125°
(D) 100°
16. Four bells ring at intervals of 6, 7, 8 and 9 seconds respectively. All the bells ring together after _____ seconds.
- (A) 504 (B) 516 (C) 508 (D) 512
17. When the polynomial $x^3 + 3x^2 + 3x + 1$ is divided by $x + 1$, the remainder is:
- (A) 1 (B) 8 (C) 0 (D) -6



18. The value of m for which $x - 2$ is a factor of the polynomial $x^4 - x^3 + 2x^2 - mx + 4$ is:
 (A) 10 (B) -10 (C) 4 (D) 9
19. The expression $(a - b)^3 + (b - c)^3 + (c - a)^3$ is equal to:
 (A) $3abc$ (B) $3a^3b^3c^3$
 (C) $3(a - b)(b - c)(c - a)$ (D) $[a - (b + c)]^3$
20. When $x^3 + 2x^2 + 2x - 4$ and $x^3 + 2x^2 - 3x + 6$ are divided by $x - 2$, the remainder are R_1 and R_2 respectively. Which of the following statements is true for R_1 and R_2 ?
 (A) $R_1 = 2R_2$ (B) $2R_1 = R_2$ (C) $R_1 = R_2$ (D) $R_1 + R_2 = 0$
21. If $(x - a)$ is a factor of $x^3 - 3x^2a + 2a^2x + b$, then the value of b is:
 (A) 0 (B) 2 (C) 1 (D) 3
22. If two lines intersected by a transversal, then each pair of corresponding angles so formed is:
 (A) Equal (B) Complementary (C) Supplementary (D) None of these
23. The angle between the bisectors of two adjacent supplementary angles is:
 (A) acute angle (B) right angle (C) obtuse angle (D) None of these
24. In the given figure, which of the following is the correct inequality?
 (A) $c^\circ < a^\circ < e^\circ < b^\circ < d^\circ$
 (B) $c^\circ < a^\circ < e^\circ < d^\circ < e^\circ$
 (C) $a^\circ < c^\circ < e^\circ < b^\circ < d^\circ$
 (D) $c^\circ < a^\circ < d^\circ < b^\circ < e^\circ$
- 
25. In the adjoining figure BO, CO are angle bisectors of external angles of $\triangle ABC$. Then $\angle BOC$ is:
 (A) $90^\circ - \frac{1}{2} \angle A$ (B) $90^\circ + \frac{1}{2} \angle A$
 (C) $180^\circ - \frac{1}{2} \angle A$ (D) $180^\circ + \frac{1}{2} \angle A$
- 
26. The value of polynomial $5x - 4x^2 + 3$, when $x = -1$ is :
 (A) -6 (B) 6 (C) 2 (D) -2
27. From the adjoining figure $AB \parallel DE$. Then the value of x° is:
 (A) 25°
 (B) 35°
 (C) 45°
 (D) 55°
- 
28. In the adjoining figure, $AB \parallel CD$. The value of x is:
 (A) 80°
 (B) 88°
 (C) 90°
 (D) 98°
- 

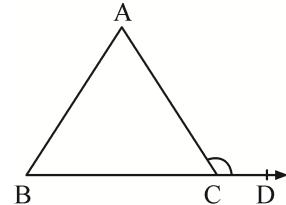
29. In the adjoining figure, the value of $\angle A + \angle B + \angle C + \angle D + \angle E + \angle F$ is:

- (A) 360°
 (B) 270°
 (C) 540°
 (D) 180°



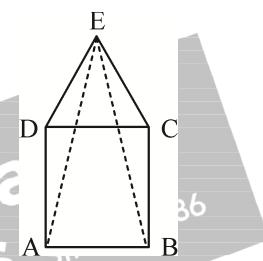
30. ABC is a triangle in which $AB = AC$. The base BC is produced to D and $\angle ACD = 130^\circ$. Then, $\angle A$ equals:

- (A) 80°
 (B) 60°
 (C) 50°
 (D) 40°



31. If $ABCD$ is a square and DCE is an equilateral triangle in the given figure, then $\angle DAE$ is equal to:

- (A) 45°
 (B) 30°
 (C) 15°
 (D) $22\frac{1}{2}^\circ$

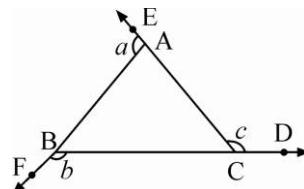


32. The equation of x -axis is of the form:

- (A) $x = 0$ (B) $y = 0$ (C) $x + y = 0$ (D) $x = y$

33. If the sides of a triangle are produced, then the sum of the exterior angles i.e. $\angle a + \angle b + \angle c$ is equal to:

- (A) 180°
 (B) 360°
 (C) 90°
 (D) 270°



34. For a triangle ABC , the true statement is:

- (A) $AC^2 = AB^2 + BC^2$
 (B) $AC = AB + BC$
 (C) $AC > AB + BC$
 (D) $AC < AB + BC$

35. $\sqrt{6 + \sqrt{6 + \sqrt{6 + \dots \infty}}}$ is equal to _____.

- (A) -3 (B) 3 (C) 6 (D) 2

36. If $p = 7 - 4\sqrt{3}$, then $\frac{p^2 + 1}{7p} =$ _____.

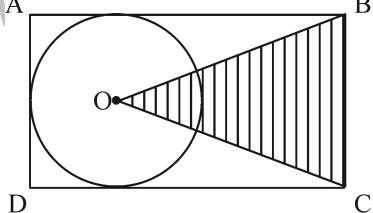
- (A) 2 (B) 1 (C) 7 (D) $\sqrt{3}$

37. The radius of sphere is $2r$, then its volume will be :

- (A) $\frac{4}{3}\pi r^3$ (B) $4\pi r^3$ (C) $\frac{8}{3}\pi r^3$ (D) $\frac{32}{3}\pi r^3$

38. Runs scored by Sachin in a charity match is 10 more than the balls faced by Lara. The number of balls faced by Sachin is 5 less than the runs scored by Lara. Together they have scored 105 runs and Sachin faced 10 balls less than the ball Lara. How many runs were scored by Sachin?

- (A) 45 (B) 60 (C) 50 (D) 55

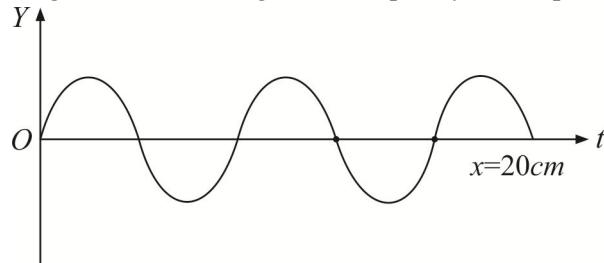
39. Amar and Bhavan have a certain amount with them. If Bhavan gives Rs. 20 to Amar, he will have half the amount with Amar. If Amar gives Rs. 40 to Bhavan, he will have half the amount with Bhavan. Find the amount with Bhavan.
 (A) Rs. 70 (B) Rs. 90 (C) Rs. 60 (D) Rs. 80
40. In an election the supporters of two candidates A and B were taken to polling booth in two different vehicles, capable of carrying 10 and 15 voters respectively. If at least 90 vehicles were required to carry a total of 1200 voters, then find the maximum number of votes by which the election could be won by the Candidate B .
 (A) 900 (B) 600 (C) 300 (D) 500
41. Krishna and Sudheer have some marbles with them. If Sudheer gives 10 marbles to Krishna, then Krishna will have 40 more marbles than Sudheer. If Sudheer gives 40 marbles to Krishna, Krishna will have 5 times as many marbles as Sudheer. Find the number of marbles with Sudheer.
 (A) 65 (B) 55 (C) 70 (D) 50
42. A goat is tied to a corner of a rectangular plot of dimensions $14m \times 7m$ with a rope $21 m$ long. It cannot graze inside the plot but can graze outside it as far as it is permitted by the rope. Find the area it can graze ($\text{in } m^2$). (Take $\pi = \frac{22}{7}$)
 (A) 1104 (B) 1196 (C) 1380 (D) 1288
43. In the figure, $ABCD$ is a rectangle with $AB = 9\text{ cm}$ and $BC = 6\text{ cm}$. O is the centre of the circle. Then the area of the shaded region is equal to ($\text{in } \text{cm}^2$):
 (A) 18 (B) 24 (C) 27 (D) 15
- 
44. Any point on x -axis is of the form :
 (A) (x, y) (B) $(0, y)$ (C) $(x, 0)$ (D) (x, x)
45. The value of $\frac{(55)^3 + (45)^3}{(55)^2 - 55 \times 45 + (45)^2}$ is :
 (A) 100 (B) 105 (C) 125 (D) 75

SECTION - III [SCIENCE]

46. The splash is heard after 4.22 sec after the stone is dropped into a well of depth 78.4 m. The velocity of sound is:
 (A) 342 m/s (B) 372 m/s (C) 392 m/s (D) 356 m/s
47. A man of mass 90 kg is standing in an elevator whose cable broke suddenly. If the elevator falls freely, the force exerted by the floor on the man is:
 (A) 90 N (B) 90 gN (C) Zero (D) any negative value
48. Two pieces of metal immersed in a liquid have equal upthrust on them, then:
 (A) Both pieces must have equal weights (B) Both pieces must have equal densities
 (C) Both pieces must have equal volume (D) Both are floating to the same depth

- 49.** An electric motor creates a tension of 4500 N in hoisting cable and reels it at the rate of 2 m/s. What is the power of electric motor?
(A) 15 kW **(B)** 9 kW **(C)** 225W **(D)** 9000kW

- 50.** For the wave shown in figure, the wavelength and frequency, if its speed is 320 m/sec, are:



- (A) 8 cm, 400 Hz (B) 80 cm, 40 Hz (C) 8 cm, 4000 Hz (D) 40 cm, 8000 Hz

51. Three gases A, B and C have the following boiling points respectively -120° , -110°C and -80°C on cooling the gases. Which gas will liquefy first?

- 52.** Which of the following will decrease the rate of evaporation of water?

- (A) Increase in temperature of water (B) Increase in surface area of water
(C) Adding common salt to water (D) Increase in wind speed

53. Which of the following formula is/are incorrectly matched with the compound?

- (I) Magnesium phosphate: $Mg_3(PO_4)_2$
(II) Ammonium chloride: NH_4Cl
(III) Sodium nitrate: $NaNO_3$

(A) I & II (B) I & III (C) II & III (D) I, II & III

- 54** Which of the following has the maximum number of atoms? (Molecular weight of N = 14, H = 1)

- Which of the following has the maximum number of atoms? (Molecular weight of N = 14g, H = 1g, O = 16g)

- ⁵⁵ Which is fully consistent with the original text of the manuscript.

- Which of the following statements is/are incorrect?

(I) Tincture of iodine is a solution of iodine in alcohol
(II) Burning of wood is a chemical change
(III) Mercury and iodine are liquid at room temperature

(A) I (B) III (C) II (D) None of these

- 56** Protein is synthesized by:

- (A) Ribosomes (B) Golgi Apparatus (C) Plastids (D) Mitochondria

- 57** Genes are located on the:

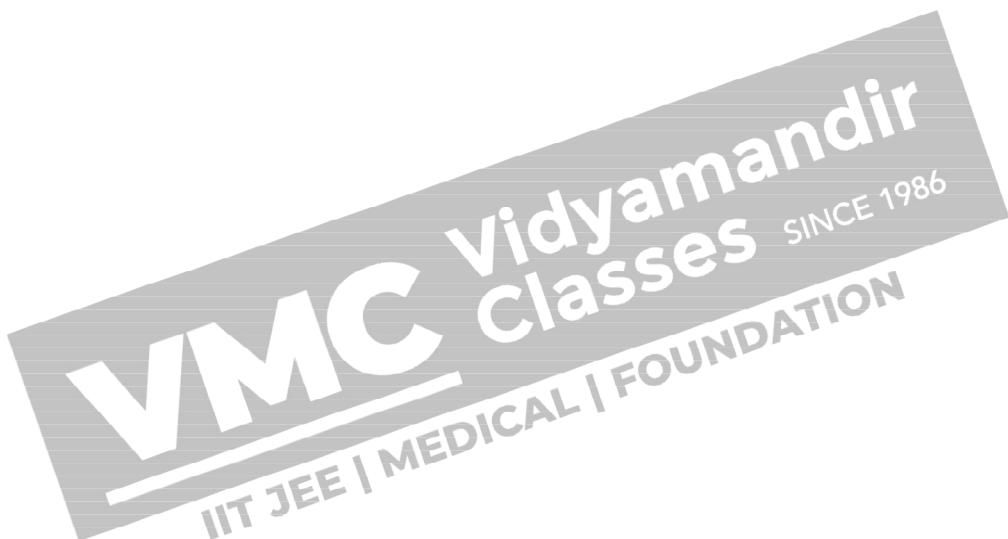
- 58** Phloem in the plants perform the function of:

59. Simple tissues are:

- (A) Parenchyma, Xylem and Collenchyma
- (B) Parenchyma, Collenchyma and Sclerenchyma
- (C) Xylem, Phloem
- (D) Parenchyma, Xylem, Sclerenchyma

60. Bacteria are placed under which kingdom?

- (A) Protista
- (B) Fungi
- (C) Monera
- (D) Plantae



❀ ❀ ❀ End of Sample Paper | 3 Year ❀ ❀ ❀



Answers to Sample Paper | 3 Year

SECTION - I									
1	2	3	4	5	6	7	8	9	10
C	D	D	C	C	C	A	C	D	C
SECTION - II									
11	12	13	14	15	16	17	18	19	20
A	D	B	B	A	A	C	A	C	C
21	22	23	24	25	26	27	28	29	30
A	D	B	A	A	A	B	D	A	A
31	32	33	34	35	36	37	38	39	40
C	B	B	D	B	A	D	B	D	B
		41	42	43	44	45			
		A	D	A	C	A			
SECTION - III									
46	47	48	49	50	51	52	53	54	55
D	C	C	B	C	C	C	D	C	B
		56	57	58	59	60			
		A	C	A	B	C			

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