

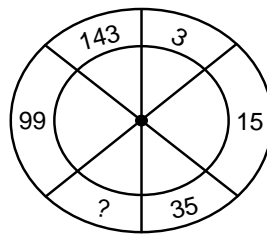
PART I : MAT**(Only One Option Correct Type) (+2, -1)**

This section contains 5 multiple choice questions. Each question has four choices (a), (b), (c) and (d) out of which **ONLY ONE** Option is correct.

1. In a certain code language TIMES is written as 79548. How will INDIA be written in that code language?

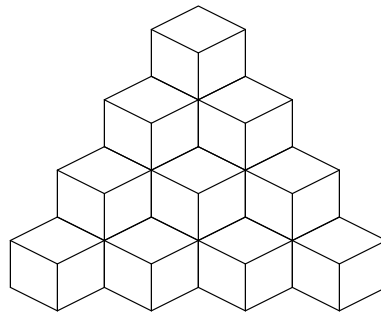
(a) 18132 (b) 45989 (c) 94598 (d) 49589

2. Find the missing number:



(a) 63 (b) 56 (c) 60 (d) 65

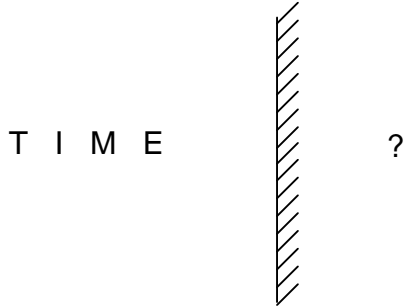
3. Count the number of cubes in the given figure.



(a) 16 (b) 18 (c) 19 (d) 20

Space for Rough Work

4. Rotate the mirror image 90° clockwise.



(a) E
I
M
T

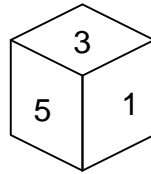
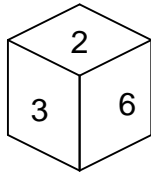
(b) E T I M

(c) E
M
I
T

(d) T
I
M
E

5. See carefully the following question and choose the correct alternatives.

Which number is opposite to 6?



(a) 2

(b) 3

(c) 4

(d) 5

END OF MAT PORTION

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PART II : MATHEMATICS

(Only One Option Correct Type) (+4, -1)

This section contains 5 multiple choice questions. Each question has five choices (a), (b), (c), (d) and (e) out of which ONLY ONE Option is correct.

6. If $2x - y = 4$ then $6x - 3y = ?$
 (a) 15 (b) 12 (c) 18 (d) 10
7. A goat is tied to one corner of a square plot of side 12m by a rope 7m long. Find the area it can graze?
 (a) 38.5 sq.m (b) 155 sq.m (c) 144 sq.m (d) 19.25 sq.m
8. If the fractions are arranged from lowest to highest then the middle fraction is:
 13, 31%, 310, 0.1, 313, 0, 303
 (a) 13 (b) 0.313 (c) 310 (d) 31%
9. Find the smallest number, if the sum of three numbers in G.P. is 38 and their product is 1728.
 (a) 12 (b) 20 (c) 8 (d) None of these
10. If $x = 2 + \sqrt{3}$, find the value of $x^2 + \frac{1}{x^2}$.
 (a) 18 (b) 12 (c) 14 (d) 16

END OF MATHEMATICS PORTION

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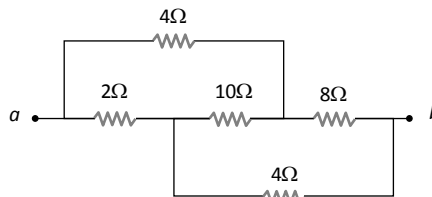
PART III : PHYSICS

Section # 1 (Only One Option Correct Type) (+4, -1)

This section contains 5 multiple choice questions. Each question has four choices (a), (b), (c) and (d) out of which **ONLY ONE** Option is correct.

11. Colour of light is determined by its :
 (a) Wavelength (b) Frequency (c) Velocity in air (d) Amplitude

12. Find the equivalent resistance between the points *a* and *b*



- (a) $2\ \Omega$ (b) $4\ \Omega$ (c) $8\ \Omega$ (d) $16\ \Omega$
13. Two particles of equal mass m and charge q are placed at a distance of 16 cm . They do not experience any force. The value of $\frac{q}{m}$ is
 (a) 1 (b) $\sqrt{\frac{\pi\epsilon_0}{G}}$ (c) $\sqrt{\frac{G}{4\pi\epsilon_0}}$ (d) $\sqrt{4\pi\epsilon_0 G}$
14. $+2C$ and $+6C$ two charges are repelling each other with a force of 12 N . If each charge is given $-2C$ of charge, then the force will be
 (a) Attractive (b) Repulsive (c) Zero (d) Cannot say

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15. Field inside a solenoid is
- (a) Directly proportional to its length
 - (b) Directly proportional to current
 - (c) Inversely proportional to total number of turns
 - (d) Inversely proportional to current

END OF PHYSICS PORTION

Space for Rough Work

PART IV : CHEMISTRY**(Only One Option Correct Type) (+2, -1)**

This section contains 5 multiple choice questions. Each question has four choices (a), (b), (c) and (d) out of which **ONLY ONE** option is correct.

16. Which type of oxide would Eka-aluminium form?
(a) EO_3 (b) E_3O_2 (c) E_2O_3 (d) EO
17. Name an alloy that is used in powerful magnets:
(a) Magnalium (b) Alnico (c) Duralium (d) Stainless steel
18. Which of the following is both an acid and base according to Bronsted concept?
(a) CN^- (b) CH_3COOH (c) HCl (d) HSO_4^-
19. Calamine is an ore of -
(a) Copper (b) Mercury (c) Zinc (d) Iron
20. Which among the following are present in a dilute aqueous solution of HCl ?
(a) $\text{H}_3\text{O}^+ + \text{Cl}^-$ (b) $\text{H}_3\text{O}^+ + \text{OH}^-$ (c) $\text{Cl}^- + \text{OH}^-$ (d) Unionized HCl

END OF CHEMISTRY PORTION

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PART V : BIOLOGY**(Only One Option Correct Type) (+2, -1)**

This section contains 5 multiple choice questions. Each question has four choices (a), (b), (c) and (d) out of which **ONLY ONE** option is correct.

21. The milk proteins are digested by which enzyme.
(a) Salivary amylase (b) Pepsinogen
(c) Rennin (d) None of these
22. In which cell organelle cellular respiration take place
(a) Endoplasmic reticulum (b) Lysosomes
(c) Mitochondria (d) Ribosome
23. In the process of oogenesis the number of ovum formed is
(a) 1 (b) 2 (c) 4 (d) 3
24. What will be the genotypic ratio of monohybrid cross in F_2 generation
(a) 3 : 1 (b) 1 : 2 : 1 (c) 9 : 3 : 3 : 1 (d) 1 : 3 : 1
25. The theory of inheritance of acquired characters was disproved by-
(a) A Weismann (b) JB Lamarck (c) Charles Darwin (d) Louis Pasteur

END OF TEST PAPER

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**IIT-JEE (Adv)
BHOPAL
TOPPER** (Dropper)

A proud CatalyseRian...