

Entrance Test: 9th

MM : 180

Time: 1.5 Hours

PLEASE FILL IT IN CAPITAL LETTERS

Enrollment No.

Students Name :

Father's Name :

School :

Previous institute (if any) :

CGPA/% in 8th :

Achievements : (NTSE/OLYMPIAD etc if any)

I hereby admit that all the information given here is true and in case of any discrepancy I shall be liable for any action.

(Invigilator)

(Student's Signature)

PART – I : MATHS

SECTION – I (Single Correct Choice Type)

This Section contains **30 Single choice questions**. Each question has four choices (A), (B), (C) and (D) out of which **ONLY ONE** is correct.

Marking Scheme:

You will be awarded **3 marks** for correct answer, **0** for wrong answer and zero if Question is left un-attempted.

1. If the square root of a number is between 6 to 7, then the cube root of the number will be between

(1) 1 & 2 (2) 2 & 3 (3) 3 & 4 (4) 4 & 5

Answer :

2. Every point on the number line represents

(1) A natural no. (2) A real number (3) A rational no. (4) An irrational number

Answer :

3. Which of the following expressions represents the number one million in scientific notation?

(1) 1000000 (2) 1.0×10^6 (3) 10×10^5 (4) 100×10^4

Answer :

4. Factorise :

$$8 - 4l - 4m - 2lm - 4n + 2ln + 2mn - lmn$$

(1) $(2 - l)(2 + m)(2 + n)$ (2) $(2 - l)(2 - m)(2 - n)$
 (3) $(2 + m)(2 + n)(2 + l)$ (4) $(2 - l)(4 - m)(1 - n)$

Answer :

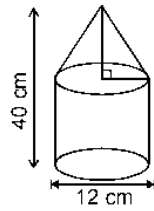
5. The value of $(2020)^2 - (2019)^2$ is

(1) 4040 (2) 4038 (3) 4000 (4) 4039

Answer :

Rough Work

6. The container pictured below is made up of a cone and a cylinder. The cone and the cylinder have the same height.



Which of the following is closest to the volume of the container?

- (1) 2261 cm² (2) 3016 cm² (3) 3393 cm² (4) 4524 cm²

Answer :

7. If $(x + 1)$ and $(x - 2)$ are factors of $x^3 + ax^2 - bx - 6$, then find the values of a and b respectively.

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

Answer :

8. ABCD is a rhombus whose diagonals intersect at O. If $\angle ADC = 120^\circ$ and $OD = 6$ cm. Then perimeter of rhombus is

- (1) 24 cm (2) 40 cm (3) 32 cm (4) 48 cm

Answer :

9. The sum of three distinct numbers is 10. If a number is $\frac{3}{2}$ more than the smallest number and $\frac{5}{2}$ less than the largest number, then the largest number is:

- (1) $\frac{11}{2}$ (2) $\frac{3}{2}$ (3) $\frac{7}{2}$ (4) 4

Answer :

10. 15% of 400 students are not good in mathematics. How many are good in mathematics?

- (1) 85 (2) 60 (3) 185 (4) 340

Answer :

11. Simplify: $(3x - 8y)(3x + 8y + 6) - 9x + 24y$

- (1) $9x^2 - 9x - 64y^2 - 24y$ (2) $9x^2 + 9x + 64y^2 - 24y$
 (3) $9x^2 - 9x - 64y^2 + 24y$ (4) $9x^2 + 9x - 64y^2 - 24y$

Answer :

Rough Work

12. Evaluate $\frac{15}{\sqrt{10} + \sqrt{20} + \sqrt{40} - \sqrt{5} - \sqrt{80}}$, if $\sqrt{5} \cong 2.236$, and $\sqrt{10} \cong 3.162$
- (1) 3.598 (2) 5.398 (3) 4.398 (4) 5.938
- Answer :

13. The one's digit of the cube of 43 is
- (1) 9 (2) 7 (3) 3 (4) 1
- Answer :

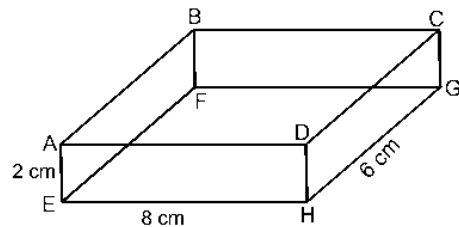
14. What is the value of $6.\bar{6} - 9.\bar{9}$?
- (1) $3.\bar{3}$ (2) $0.\bar{3}$ (3) $-3.\bar{3}$ (4) 3.33
- Answer :

15. Multiplicative inverse of 3^{-4} is
- (1) 3^{-4} (2) 2^2 (3) 1 (4) 3^{+4}
- Answer :

16. If $\frac{x^2}{y^2} + \frac{y^2}{x^2} = 6$, ($x, y \neq 0$), then the value of $(x - y)(x + y) + 2xy = m$ and the value of $(x - y)(x + y) - 2xy = n$. Find the value of mn .
- (1) 4 (2) 36 (3) 0 (4) 8
- Answer :

17. What is the value of $\frac{1010^2 + 2020^2 + 3030^2}{2020}$
- (1) 2020 (2) 3030 (3) 7070 (4) 6060
- Answer :

18. The rectangle box has dimensions as shown what is the length \overline{AG} ?



- (1) $2\sqrt{26}$ cm (2) $4\sqrt{6}$ cm (3) $2\sqrt{3}$ cm (4) $\sqrt{16}$ cm
- Answer :

Rough Work

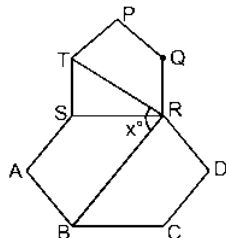
19. If $a + b = 19$ and $ab = 88$, $a > 0$ and $b > 0$, $a > b$ then

	Column-I		Column-II
(i)	$a^3 - b^3$	(p)	57
(ii)	$a^2 + b^2$	(q)	819
(iii)	$a^2 - b^2$	(r)	185

- (1) (i) \rightarrow r, (ii) \rightarrow p, (iii) \rightarrow q (2) (i) \rightarrow q, (ii) \rightarrow r, (iii) \rightarrow p
 (3) (i) \rightarrow r, (ii) \rightarrow q, (iii) \rightarrow p (4) (i) \rightarrow q, (ii) \rightarrow p, (iii) \rightarrow r

Answer :

20. Polygon PQRST is a regular pentagon and polygon ABCDRS is a regular hexagon. Find x.



- (1) 108 (2) 132 (3) 124 (4) 96

Answer :

21. The art competition organisers decided that a winner in the competition gets a prize of Rs. 100 and a participant who does not win gets a prize of Rs. 25. The total prize money distributed is Rs. 3000. Find the number of winners, if the total number of participants is 63.

- (1) 17 (2) 19 (3) 21 (4) 24

Answer :

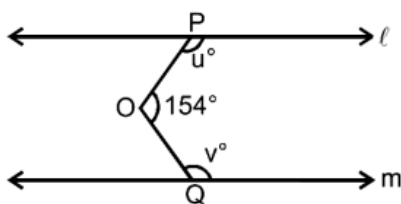
22. The list price of a frock is Rs. 800. A discount of 35% is announced on sales. What is the amount of discount on it & its sales price respectively?

- (1) Rs. 250, Rs. 550 (2) Rs. 200, Rs. 600
 (3) Rs. 280, Rs. 520 (4) None of these

Answer :

Rough Work

23. In the figure, $\ell \parallel m$, $\angle POQ = 154^\circ$, then the value of $\left(\frac{u+v}{2}\right)$ is:



- (1) 77 (2) 154 (3) 103 (4) 206

Answer :

24. P takes the same time to complete a revolution round a circular field as Q takes to complete a revolution round a square field. If P and Q move with same speed, then the ratio of the area of circular field to the area of square field is:

- (1) $\frac{\pi}{8}$ (2) $\frac{3\pi}{8}$ (3) $\frac{3}{2\pi}$ (4) $\frac{4}{\pi}$

Answer :

25. A car covers 432 km in 36 litres of petrol. How much distance it would cover in 25 litres of petrol

- (1) 300 km (2) 250 km (3) 200 km (4) None

Answer :

26. Find the value of $300[0.09]^{1/2} \times [0.027]^{1/3}$

- (1) 25 (2) 9 (3) 27 (4) 3

Answer :

27. If $x = \sqrt[3]{2\frac{93}{125}}$ then the value of x is

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

Answer :

Rough Work

28.

If $x = \sqrt{2} + 1$ then find the value of $\left(x - \frac{1}{x}\right)^2$

(1) 1

(2) 3

(3) 2

(4) 4

Answer :

29.

A cube with a side 1 m long has been cut into cubes of a side 1 dm each. All small cubes have been put one on top of the other, to form a vertical structure. What is the height of this structure?

(1) 100 m

(2) 1 km

(3) 10 km

(4) 1000 km

Answer :

30.

The ratio of marks obtained by Vinod and Basu is 6:5. If the combined average of their percentage is 68.75 and their sum of the marks is 275, find the total marks for which exam was conducted.

(1) 150

(2) 200

(3) 400

(4) none

Answer :

Rough Work

35. A cube painted red on two adjacent faces and pink on the faces opposite to the orange faces and violet on the remaining faces is cut into sixty-four smaller cubes of equal size. How many cubes have less than three but atleast one face painted ?

(1) 8 (2) 24 (3) 28 (4) 48

Answer :

36. How many circles are there in the adjoining figure ?



(1) 13 (2) 16 (3) 15 (4) 10

Answer :

37. We've assigned different whole numbers to letters and then multiplied their values together to make the values of words.

Given that TEEN = 52, TILT = 77, TALL = 363

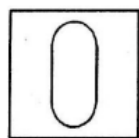
What's the value of TATTLE?

(1) 20 (2) 34 (3) 56 (4) 66

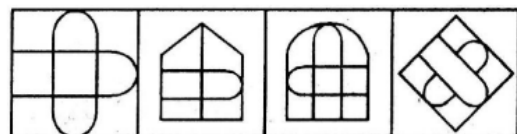
Answer :

Rough Work

38. Choose the alternative figure in which the question figure (X) is embedded.



(X)



(1) (2) (3) (4)

Answer :

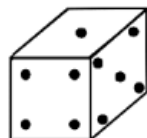
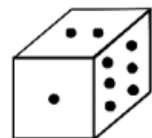
39. Choose the missing terms out of the given alternatives.

Z, Y, X, U, T, S, P, O, N, K, ?, ?

- (1) HG (2) GF (3) IH (4) JI

Answer :

40. All the surface of the dice contain different numbers in the form of dots. Consider both the figures of dice and tell how many dots are contained on the face opposite to the face that contains four dots ?



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

Answer :

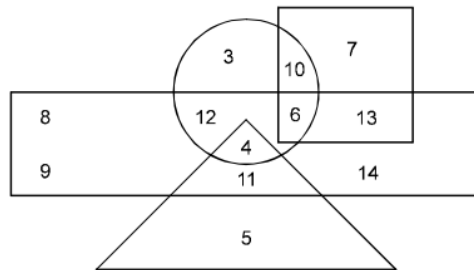
41. Which of the following will be the value of the expression : $\frac{(6+6+6+6) \div 6}{4+4+4+4 \div 4}$

- (1) 1 (2) $\frac{3}{2}$ (3) $\frac{4}{13}$ (4) $3\frac{6}{13}$

Rough Work

Answer :

42. The given question is based on the following diagram in which rectangle represents males, triangle represents educated, circle represents urban, square represents civil servants. Numbers are shown in the different sections of the diagram. On the basis of these number, answer the question.

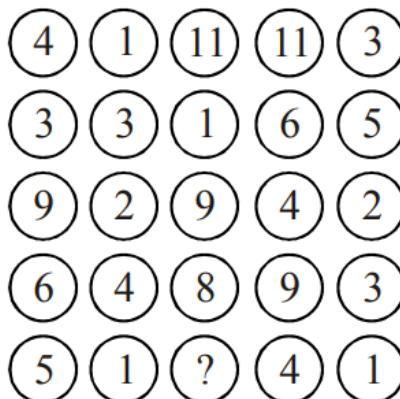


How many uneducated male are there who are neither a civil servant nor from urban area ?

- (1) 13 (2) 8
 (3) 31 (4) 14

Answer :

43. Find the missing character (?)

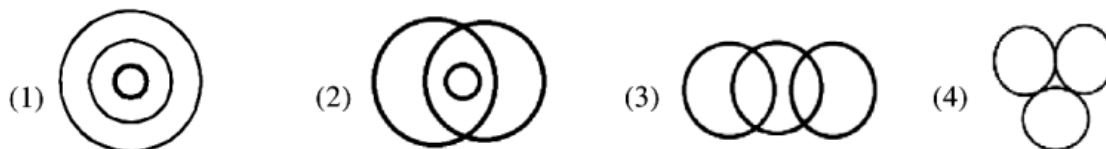


- (1) 6 (2) 7 (3) 8 (4) 9

Answer :

Rough Work

44. Which diagram represents the best relation between Newspaper, Paper and Times of India ?



Answer :

45. 'L % M' means that M is brother of L 'L × M' means that L is mother of M
 'L ÷ M' means that L is the sister of M 'L = M' means that M is father of L

Which of the following means " I is the nephew of Q" ?

(i) Q % J = I

(ii) Q ÷ M × B % I

(iii) C ÷ I = B % Q

(1) Only (iii)

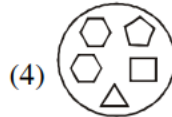
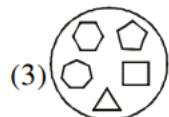
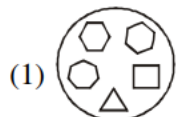
(2) Only (i)

(3) Only (ii)

(4) None of these

Answer :

46. Complete the series, choosing the correct figure from the given alternatives.



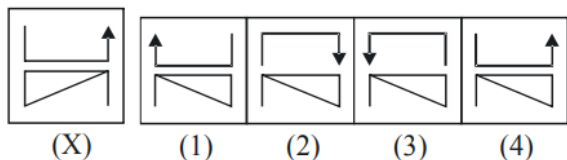
Rough Work

Answer :

47. In a family of 8 persons viz. A, B, C, D, E, F, G and H, there are 3 couples and 4 females. All couples except one particular, have 1 child each. G and F are cousins. B is the grandmother of G and C is the son of A. If couple C - H has a daughter F then how is G related to E ?
- (1) Grandson (2) Granddaughter
 (3) Son (4) Daughter-in-law

Answer :

48. Choose the correct mirror image of fig.(X) from alternative (1), (2), (3) & (4).



Answer :

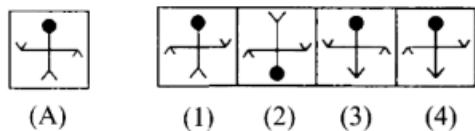
49. Find the missing term (?)

10,47,232,1157,5782, ?

- (1) 27641 (2) 28907
 (3) 28903 (4) 27689

Answer :

50. Find the water image of the object given in the question figure denoted by (A), out of the figure given in the answer choices, (1), (2), (3) and (4).



Answer :

Rough Work

51. X and Y is a married couple. A and B are the brothers. A is the brother of X. How B related to Y ?

- (1) Brother-in-law (2) Father-in-law (3) Son-in-law (4) Brother

Answer :

52. Which is correct water image from the given four images ?

U4P157

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

Answer :

53. In the following question, choose the correct mirror image from alternatives.

VINAYAKA

- (1) INVAYAKA (2) AXIAYANIV (3) AKAYANIV (4) AXIAYANIV

Answer :

54. Praveen is facing North - East. He turn 90° degree in the clockwise direction and then 135° in the anticlockwise direction . In which direction is he facing Now?

- (1) North (2) South (3) East (4) West

Answer :

55. What is the value of :

$$16 \times 12 - 6 \div 2 + 17 = ?$$

- (1) 172 (2) 192 (3) 206 (4) 209

Answer :

56. Find the missing term in the given number series :

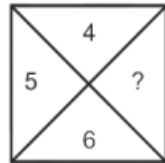
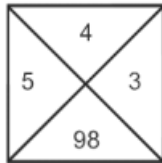
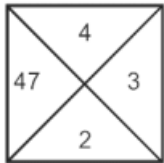
163, 167, 142, 147, 111, 117, ?, 75

- (1) 96 (2) 68 (3) 78 (4) 92

Answer :

Rough Work

57. Which number replaces the question mark?



(1) 125

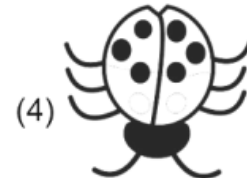
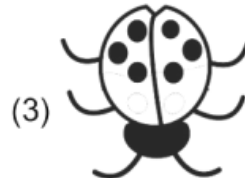
(2) 141

(3) 177

(4) 156

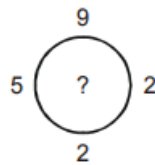
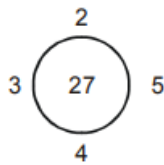
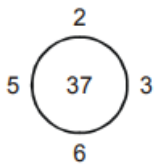
Answer :

58. Find the water image of the given figure.



Answer :

59. Which number replaces the question mark?



(1) 27

(2) 37

(3) 47

(4) 57

Answer :

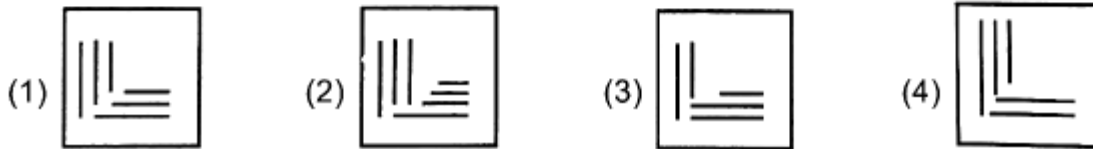
Rough Work

60. In the following question a set of figures related in some manner is given. Find the figure that comes in place of '?' and follows/continuous the same relationship.

Question figure:



Answer figure :



Answer :

Rough Work
