

# GLOBAL TALENT SEARCH EXAMINATION

## MATHEMATICS

Class : VIII

Max Marks : 80

Time : 9:00 to 10:30 a.m.

### Instructions to Candidates :

01. This question paper has 40 objective questions. In addition to this question paper, you are also given an answer-sheet.
02. Read the instructions carefully for each section before attempting it.
03. For each correct answer **2 marks** will be awarded and there is no negative marking.
04. On the answer-sheet, fill up all the entries carefully in the space provided, **ONLY IN BLOCK CAPITAL LETTERS.**
05. Incomplete / incorrect / carelessly filled information may disqualify your candidature.
06. On the answer-sheet, use **PENCIL / BLUE or BLACK BALL PEN.**
07. No extra sheet will be provided for rough-work. Use the space available in the paper for your rough- work.
08. Use of calculator is not permitted.
09. No student is permitted to leave the examination hall before time is complete.
10. Use of unfair means shall invite cancellation of the test.

Roll No.

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Centre No.

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Male / Female \_\_\_\_\_

Name of the candidate : (In English only, as you would like it to be printed on the certificate).

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Signature of the  
invigilator

Signature of  
the candidate

## AMITY INSTITUTE FOR COMPETITIVE EXAMINATIONS

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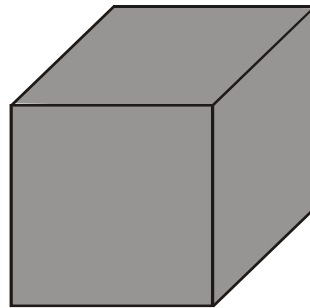
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Each question has four alternatives marked (A), (B), (C) and (D), but only one of these alternatives is the correct answer.

1.  $\frac{1\frac{8}{11} \times 2\frac{2}{19} \times 1\frac{3}{8}}{1\frac{8}{17} \times 1\frac{8}{9} \times 3\frac{3}{5}}$  of  $\left[ 3\frac{8}{9} \times 1\frac{2}{7} \times 3\frac{1}{5} \right]$  equals

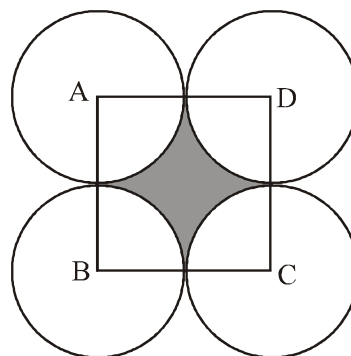
- (A) 8 (B) 4  
(C) 2 (D) 1

2. Surface area of a cube is  $2646 \text{ cm}^2$ . The cube is shown as below. The minimum length of a thin ribbon to be pasted along its edges is



- (A) 441.0 cm  
(B) 330.75 cm  
(C) 252.0 cm  
(D) 220.5 cm

3. Four very thin circular sheets are so closely placed that their centres form a square  $ABCD$ . If radius of each circular sheet is  $\pi \text{ m}$ , then the ratio of areas of whole square  $ABCD$  and the shaded part inside this square is



- (A)  $2 : (\pi - 2)$   
(B)  $2 : (4 - \pi)$   
(C)  $4 : (\pi - 2)$   
(D)  $4 : (4 - \pi)$

4. At 8 % rate of interest, if the compound interest is more than simple interest by Rs. 160 for 2 years, then the amount deposited would be

- (A) Rs. 30,000 (B) Rs. 25,000  
(C) Rs. 24,000 (D) Rs. 20,000

## Rough Work

In the following *three* questions, numbers in the cells of each square follow some rule. Find the number, which when replaced by the symbol *..?..*, maintains the same rule.

5. (A) 12  
(B) 10  
(C) 8  
(D) 6

6	10	8
7	9	8
..?..	6	8

6. (A) 22  
(B) 24  
(C) 26  
(D) 28

2	8	12
3	9	18
4	10	..?..

7. (A) 24  
(B) 22  
(C) 20  
(D) 16

55	32	46
32	14	36
46	36	..?..

8. The paint in a certain container is sufficient to paint area equal to  $15 \text{ m}^2$ . How many bricks of dimensions  $22.5 \text{ cm} \times 10 \text{ cm} \times 7.5 \text{ cm}$  can be painted with this paint, assuming no wastage ?

- (A) 150 bricks                      (B) 160 bricks  
(C) 180 bricks                      (D) 200 bricks

9. If  $a = 4$ ,  $b = 3$  and  $(a + b + c)^2 = 25$ , then the value of  $(a + b - c)$  is equal to

- (A) 11                                      (B) 9  
(C) 7                                        (D) 5

## Rough Work

10. Find the square root of  $56\frac{44}{1225}$ .

(A)  $7\frac{17}{35}$

(B)  $7\frac{27}{35}$

(C)  $7\frac{19}{35}$

(D)  $7\frac{29}{35}$

11. What smallest number should be subtracted from 974489 so that the result is a perfect square of a whole number ?

(A) 300

(B) 320

(C) 340

(D) 360

12. A motor-boat covers a certain distance down stream in a river in five hours, and the same distance upstream in five and a half hours. If speed of water in the river is 1.5 km/hr, then the distance travelled by the motor boat in each direction is

(A) 150 km

(B) 160 km

(C) 165 km

(D) 175 km

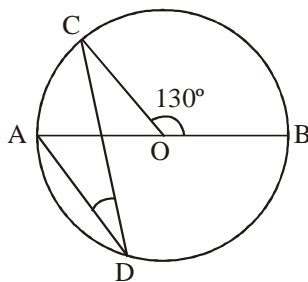
13. In the given figure,  $AB$  is the diameter of a circle with  $O$  as its centre. If  $\angle COB = 130^\circ$ , then  $\angle ADC$  is

(A)  $25^\circ$

(B)  $30^\circ$

(C)  $35^\circ$

(D)  $50^\circ$



14. On simplification,  $\sqrt[3]{8\sqrt{8\left(\sqrt{8\sqrt[3]{8}} + \sqrt{8\sqrt[3]{8}}\right)}}$  can be written as

(A)  $2^{5/3}$

(B)  $2^{4/3}$

(C)  $2^{5/2}$

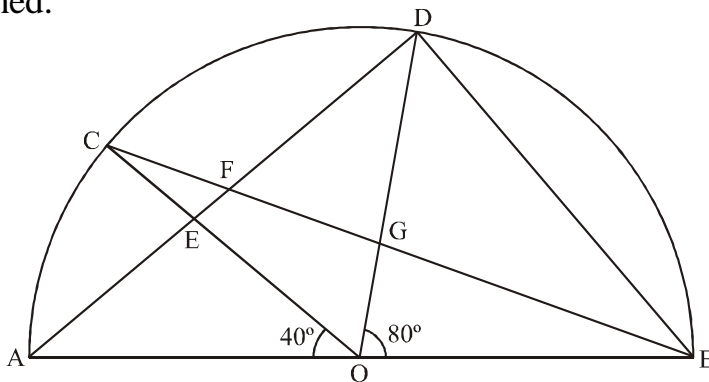
(D)  $2^{4/2}$

## Rough Work

15. In the equation  $8\frac{1}{B} \times A\frac{5}{7} = 39\frac{2}{7}$ , the values of A and B are, respectively

- (A) 4, 7                      (B) 4, 3  
(C) 4, 5                      (D) 4, 4

16. In the given semicircle,  $AOB$  is the diameter and  $O$  is the centre of the circle of which this semicircle is a part.  $\angle AOC = 40^\circ$ ,  $\angle DOB = 80^\circ$  and  $AD$ ,  $BD$  and  $CB$  are joined.



The magnitudes of  $\angle AEO$  and  $\angle OGB$  are, respectively,

- (A)  $80^\circ$  and  $100^\circ$       (B)  $100^\circ$  and  $80^\circ$   
(C)  $100^\circ$  and  $60^\circ$       (D)  $80^\circ$  and  $80^\circ$

17. In the above problem, the magnitudes of  $\angle ODB$  and  $\angle OCB$  are, respectively,

- (A)  $40^\circ$  and  $20^\circ$               (B)  $50^\circ$  and  $30^\circ$   
(C)  $40^\circ$  and  $30^\circ$               (D)  $50^\circ$  and  $20^\circ$

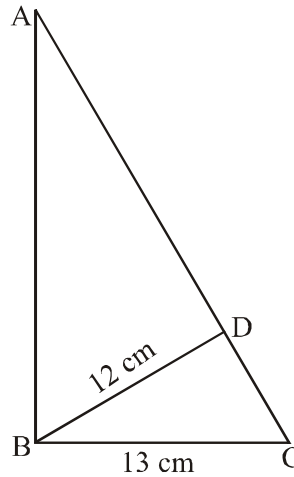
18. By giving a discount of 10 % on the marked price, a shopkeeper makes a profit of 12.5 %. If he gives a discount of 8 % on the marked price, his profit would become

- (A) 18 %                      (B) 17.5 %  
(C) 15 %                      (D) 14.5 %

19.  $\sqrt{4 \frac{89}{484} \times 1 \frac{57}{64} \times \frac{0.0256}{0.0081} \times 1 \frac{11}{25}}$  simplifies to

- (A) 6 (B) 9  
(C) 12 (D) 15

20.  $ABC$  is a right-angled  $\Delta$ , right-angled at  $B$ .  $BD$  is drawn  $\perp AC$ . If  $BC = 13$  cm and  $BD = 12$  cm, then  $AB$  would be equal to



- (A) 33.4 cm  
(B) 32.5 cm  
(C) 31.2 cm  
(D) 30.8 cm

21.  $\frac{1}{1 + \frac{1}{2 + \frac{2}{3 + \frac{3}{4}}}}$  can be simplified as

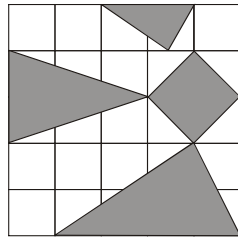
- (A)  $\frac{38}{63}$  (B)  $\frac{28}{63}$   
(C)  $\frac{38}{53}$  (D)  $\frac{28}{53}$

22. A fruit-seller makes a profit of 20% by selling quality mangoes at a certain price. If he sells for Rs. 1 more per piece, his profit becomes 25%. The cost price per mango should be

- (A) Rs. 16 (B) Rs. 20  
(C) Rs. 25 (D) Rs. 32

23. What percent of the total area of the grid is shaded ?

- (A) 44%
- (B) 40%
- (C) 38%
- (D) 36%



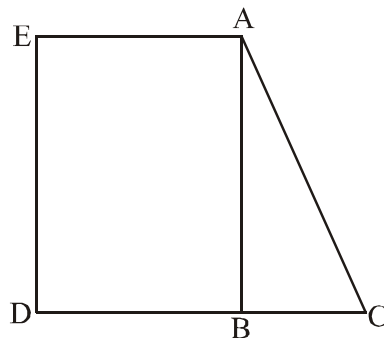
24. You are given the following 8 numbers and no number is to be repeated for addition in the problem :

4, 7, 15, 28, 34, 39, 47, 56

How many numbers can be added to get a sum of 100?

- (A) 3 numbers, involving number 47
  - (B) 5 numbers, involving number 47
  - (C) 4 numbers, involving number 34
  - (D) 4 numbers, involving number 39
25.  $ABC$  is a right-angled triangle such that  $\angle ABC = 90^\circ$ . The ratio of the sides  $AC$  and  $BC$  is  $13 : 5$ .  $ABDE$  is rectangle of perimeter 210 cm and  $AB : DB$  is  $4 : 3$ . Find the area of the triangle  $ABC$ .

- (A)  $680 \text{ cm}^2$
- (B)  $750 \text{ cm}^2$
- (C)  $812.5 \text{ cm}^2$
- (D)  $960 \text{ cm}^2$



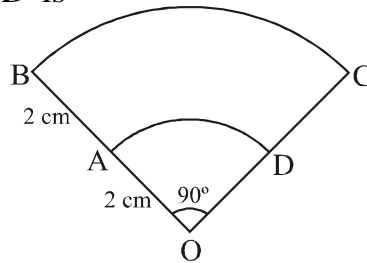
26. Marked price of an article is Rs. 2250. By allowing a discount of 10 %, the trader makes a profit of 12.5 %. Had he sold the article at the marked price, his profit would have been

- (A) 22.5 %
- (B) 25 %
- (C) 27.5 %
- (D) 30 %

## Rough Work

27. The area of the figure  $ABCD$  is

- (A)  $4 \pi \text{ cm}^2$
- (B)  $3.5 \pi \text{ cm}^2$
- (C)  $3 \pi \text{ cm}^2$
- (D)  $2 \pi \text{ cm}^2$



28. If  $A = 1$ ,  $B = 2$ ,  $\dots\dots O = 15$ ,  $\dots\dots\dots Z = 26$ , then

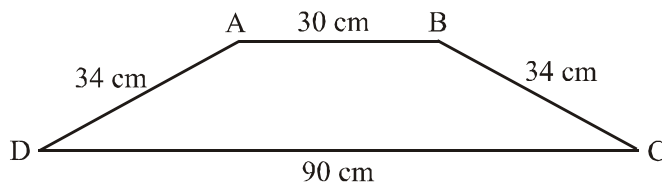
$\sqrt{\sqrt{Y^2 - X^2} + C^2}$  is equal to

- (A)  $E^2 - T$
- (B)  $B^2 + A$
- (C)  $D + S - U$
- (D)  $\sqrt{E^2 - C^2}$

29. The perimeter of a rectangle  $R$  is 240 cm. If its length is decreased by 10 % and its breadth is increased by 20 %, its perimeter remains same. The area of the rectangle  $R$  is

- (A) 3600 sq. cm.
- (B) 3200 sq. cm.
- (C) 3000 sq. cm.
- (D) 2400 sq. cm.

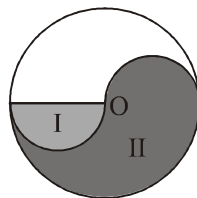
30. The parallel sides  $AB$  and  $DC$  of a symmetrical trapezium are 30 cm and 90 cm, respectively. Each of its non-parallel sides is 34 cm. Find the area of the trapezium.



- (A)  $960 \text{ cm}^2$
- (B)  $1080 \text{ cm}^2$
- (C)  $1120 \text{ cm}^2$
- (D)  $1240 \text{ cm}^2$

31.  $O$  is the centre of the circle. The ratio of areas of shaded regions I and II is

- (A) 1 : 3
- (B) 1 : 4
- (C) 1 : 6
- (D) 2 : 7





## Rough Work

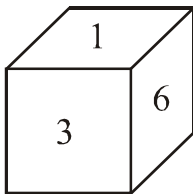
32. If  $a + b = c$  and  $a = b$  then the value of  $\frac{a}{a-c} - \frac{c}{b-c}$  is equal to

- (A)  $\frac{c}{c-a}$                       (B)  $\frac{c}{a-c}$   
(C) 0                                (D) 1

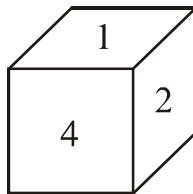
33. Due to lack of medical facilities and proper diet, the death rate of persons on account of a dreaded disease in a town was more than birth rate. On the average, the population decreased by 10 %, 8 % and 4 % in successive 3 years, respectively. If population recorded after these 3 years was 675648, then the population before the spread of the dreaded disease was

- (A) 900,000                      (B) 850,000  
(C) 800,000                      (D) 750,000

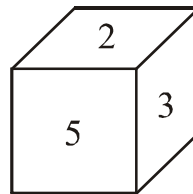
Three views of a cube are given below. Study each view of the cube and answer the following *two* questions.



1



2



3

34. In figure 1, the symbol opposite to 6 is

- (A) 2                                (B) 4  
(C) 5                                (D) difficult to find

35. In figure 2, the symbol opposite to 1 is

- (A) 3                                (B) 5  
(C) 6                                (D) difficult to find

## Rough Work

36. Find the unknown numbers  $x$  and  $y$  such that the sum of the numbers along each row, along each column and along each diagonal of the grid is 81

(A)  $x = 26, y = 25$

(B)  $x = 25, y = 29$

(C)  $x = 29, y = 25$

(D)  $x = 29, y = 24$

28	$x$	
		31
30	$y$	

37. Complete the following division and then find the values of A, B, C, D and E

$$\begin{array}{r}
 \phantom{A} 9 \overline{) 4 C 8 E} \\
 \underline{1 3 * B 6 5} \\
 \phantom{1} 1 6 \\
 \phantom{1} \underline{2 2 B} \\
 \phantom{1} \phantom{2} 0 3 \\
 \phantom{1} \phantom{2} \underline{2 * 6} \\
 \phantom{1} \phantom{2} \phantom{2} D 2 \\
 \phantom{1} \phantom{2} \phantom{2} \underline{2 4 5} \\
 \phantom{1} \phantom{2} \phantom{2} \phantom{2} * * * \\
 \phantom{1} \phantom{2} \phantom{2} \phantom{2} \underline{1 3}
 \end{array}$$

	A	B	C	D	E
(A)	2	6	7	3	8
(B)	2	8	7	3	8
(C)	2	7	8	3	8
(D)	2	8	6	3	8

38. Which one of the following digits should be in all the three empty boxes of a five-digit number, shown below, such that the number becomes individual by 9 as well as 11 ?

		9		6
--	--	---	--	---

(A) 1

(B) 4

(C) 7

(D) No digit is possible

**Rough Work**

39.  $\frac{1}{8} - \frac{1}{7} \left[ \frac{1}{6} - \frac{1}{5} \left\{ \frac{1}{4} - \frac{1}{3} \left( \frac{1}{2} + 1 \right) \right\} \right]$

The expression, after simplification, can be written as

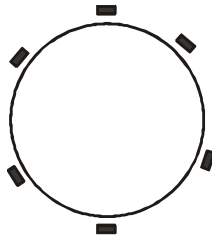
- (A)  $\frac{83}{840}$                       (B)  $\frac{81}{840}$   
(C)  $\frac{77}{840}$                       (D)  $\frac{79}{840}$

40. Six friends are sitting on a circular table, in a restaurant, as under :

- (i) *C* is on right side of *F* and are sitting together
- (ii) *C* and *B* are sitting opposite to each other
- (iii) *E* is sitting on left side of *A*

Who is sitting on right side of *D* ?

- (A) *B*  
(B) *E*  
(C) *F*  
(D) *A*



## ANSWERS : CLASS VIII MATHS

1	A	2	C	3	D	4	B	5	B
6	C	7	C	8	B	9	B	10	A
11	B	12	C	13	A	14	D	15	B
16	B	17	D	18	C	19	A	20	C
21	C	22	B	23	B	24	C	25	B
26	B	27	C	28	D	29	B	30	A
31	B	32	D	33	B	34	A	35	B
36	C	37	B	38	B	39	D	40	C