GLOBAL TALENT SEARCH EXAMINATION

MATHEMATICS

Class : VII

Max Marks : 80

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

Roll No.

Centre No.

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

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

1. The value of $\dfrac{4^{x+4} - 8 \times 4^{x+1}}{4^{x+2}}$ is

   (A) 4

   (B) 4^x

   (C) 24

   (D) 14

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

2.   (A) 68

      (B) 70

      (C) 72

      (D) 75

7	10	15
22	31	42
55	..?..	87

3.   (A) 10

      (B) 8

      (C) 12

      (D) 6

13	17	..?..
18	24	12
31	41	20

4.   (A) 14

      (B) 15

      (C) 17

      (D) 18

12	5	19
19	12	26
24	..?..	31

5. (A) 12

(B) 14

3	9	4
10	17	9
21	27	..?..

(C) 15

(D) 16

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

The expression, after simplification, can be written as

(A) $\dfrac{27}{280}$ (B) $\dfrac{29}{280}$

(C) $\dfrac{31}{280}$ (D) $\dfrac{33}{280}$

7. A fancy article is sold at a profit of 40 %. If the cost price as well as the selling price were Rs.50 less, then the profit would have been 50 %. Find the cost price of the fancy article.

(A) Rs. 250 (B) Rs. 300

(C) Rs. 400 (D) Rs. 500

8. The length and the breadth of a plot of land are in the ratio 4 : 3. If the length were 10 % more and the breadth were 10 % less, then area would have decreased by 4800 sq. m. Find the length of the plot of land.

   (A) 1200 m   (B) 800 m

   (C) 600 m   (D) 400 m

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

   $$2, \ 9, \ 17, \ 29, \ 36, \ 45, \ 56, \ 61$$

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

   (A) 6   (B) 5

   (C) 4   (D) 3

10. Which one of the following equations is *not correct* ?
    (L stands for litre)

    (A) $1 \ m^3 = 10^6 \ cm^3$ (B) $1 \ m^2 = 10^6 \ mm^2$

    (C) $1 \ m^2 = 10^3 \ L$ (D) $1 \ L = 10^3 \ mm^3$

11. One of the angles of an acute-angled isosceles triangle is 80°. Which one of the following angles is not possible in this triangle ?

    (A) 20°   (B) 50°

    (C) 80°   (D) 60°

12. The paint in a certain container is sufficient to paint area equal to 18.75 m². How many bricks of dimensions 22.5 cm × 10 cm × 7.5 cm can be painted with this paint, assuming no wastage ?

(A) 150 bricks   (B) 100 bricks

(C) 250 bricks   (D) 200 bricks

13. The rate of interest for first two years is 6 % per annum, for the next three years is 8 % per annum and for a period beyond five years 12 % per annum. If a person received Rs. 23400 as interest after 8 years, find the money deposited by him.

(A) Rs. 35,000   (B) Rs. 32,500

(C) Rs. 32,000   (D) Rs. 30,500

14. Triangles *ABC* and *ABD* are inscribed in a circle. If *AC* bisects ∠ *DAB* then ∠*CBD* is equal to

(A) 40°

(B) 35°

(C) 30°

(D) 25°

15. What should be added to the following expression such that the result becomes 10 ?

$$\left[1\frac{8}{25}\times 7\frac{1}{7}\times 3\frac{1}{11}\times 1\frac{8}{17}\times\frac{7}{75}\right]-\left[\frac{3}{20}\times 1\frac{2}{3}\times 3\frac{1}{5}\times 2\frac{1}{2}\right]$$

(A) 0   (B) 1

(C) 2   (D) 3

16. In the equation $2\dfrac{3}{A}\times B\dfrac{1}{3}=13\dfrac{2}{3}$, the values of A and B are, respectively

(A) 19, 6   (B) 19, 5

(C) 17, 6   (D) 17, 5

17. If $a = 2\ b = 4\ c$ then the value of $\dfrac{(a+b+c)^2}{a^2+b^2+c^2}$ is equal to

(A) $3\dfrac{1}{2}$ (B) $2\dfrac{1}{3}$

(C) $1\dfrac{3}{4}$ (D) $1\dfrac{2}{5}$

18. Expression [4913 + 2197 + 3×289×13 + 3×169×17] can be simplified as

(A) 28000   (B) 27850

(C) 27000   (D) 26850

19. In a certain code 'SEVEN' is written as 52624 and 'TWELVE' is written 872362. In the same code 'ELEVEN' will be written as

(A) 232625   (B) 232624

(C) 232524   (D) 232724

20. 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) $x = 25,\ y = 29$

(B) $x = 28,\ y = 25$

(C) $x = 29,\ y = 23$

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

30	y	
		x
26		24

21. Difference between two numbers is 30. If larger number is increased by 20%, it becomes double the smaller number. The smaller number is

(A) 30   (B) 45

(C) 50   (D) 60

22. ($ap^2 + bq^2 - bp^2 - aq^2$) can be factorised as

(A) $(p - q)(p + q)(b - a)$

(B) $(q + p)(q - p)(a - b)$

(C) $(a + b)(p - q)(p + q)$

(D) $(a - b)(p - q)(p + q)$

23. Find 25 per cent of $\left[2\dfrac{8}{11} \times 4\dfrac{8}{15} \times \dfrac{4}{17} \times 1\dfrac{3}{8} \times 4 \right]$.

(A) 8   (B) 2

(C) 1   (D) none of these

24. In which one of the following cases fractions have been arranged in proper ascending order of their magnitudes ?

(A) $\dfrac{7}{15} < \dfrac{5}{12} < \dfrac{3}{5} < \dfrac{11}{18}$ (B) $\dfrac{5}{12} < \dfrac{7}{15} < \dfrac{3}{5} < \dfrac{11}{18}$

(C) $\dfrac{7}{15} < \dfrac{5}{12} < \dfrac{11}{18} < \dfrac{3}{5}$ (D) $\dfrac{5}{12} < \dfrac{7}{15} < \dfrac{11}{18} < \dfrac{3}{5}$

25. Which same digit should be written in all the empty boxes of the following grid so that the five-digit number so formed becomes divisible by 9 as well as 11 ?

9			3	

(A) 6   (B) 8

(C) 2   (D) 5

26. A train running at a speed of 72 km/hr crosses an electric pole in 6 seconds and the platform of an unimportant railway station in 33 seconds. The length of the platform would be

(A) 480 m   (B) 660 m

(C) 540 m   (D) 440 m

27. If $\dfrac{75}{175} = \dfrac{165}{325 + x} = \dfrac{x}{y}$, then the value of y is

(A) 120   (B) 140

(C) 165   (D) 175

28. A trader marks selling price of his goods at 35 % higher than their cost price. To attract the customers, he announces a discount of 20 %. Find his profit.

(A) 8 %   (B) 12 %

(C) 15 %   (D) 7.5 %

29. Starting from his house in village *A*, a person has to reach another village *B* to attend a function just in time. If he plans to cycle at the speed of 8 km/hr, he would reach late by 15 minutes. But if he plans to cycle at a speed of 10 km/hr, he would reach earlier by 15 minutes. The distance between the two villages is

(A) 30 km   (B) 25 km

(C) 20 km   (D) 15 km

30. Two persons *P* and *Q* walk between two positions *A* and *B*, 4.2 km apart, starting from position *A* towards position *B*. Speed of *P* is 3 km/hr and that of *Q* is 4 km/hr. Person *Q* after reaching position *B* starts walking towards position *A* and meets *P* at *C*.

$$A \quad\quad\quad\quad\quad C \quad\quad B$$
4.2 km

The distance between positions *A* and *C*

(A) is 3.6 km   (B) is 3.5 km

(C) is 3.2 km   (D) cannot be calculated

31. The simple interest on a sum of money is 48% of its principal, and the rate of interest is 75% of the number of years for which the money is deposited. The rate of interest is

(A) 9 %   (B) 8 %

(C) 7.5 %   (D) 6 %

32. *A* sells a new article to *B* at a profit of 20 %. *B* used the article for one year and sold it to *C* at a loss of 20 %. If *C* paid Rs. 3600 to *B*, then the cost price of the article for *A* was

(A) Rs. 3600   (B) Rs. 3750

(C) Rs. 3850   (D) Rs. 4000

33. A contractor employed 30 labourers to finish a work in 25 days. After 4 days, 6 labourers left the job. In order to finish the work in time, he raised the wages of labourers and increased their working hours from 8 to 10.5. Assuming all labourers work equally, the contractor will be able to finish the work

(A) earlier by one day   (B) late by one day

(C) late by 2 days   (D) just in time

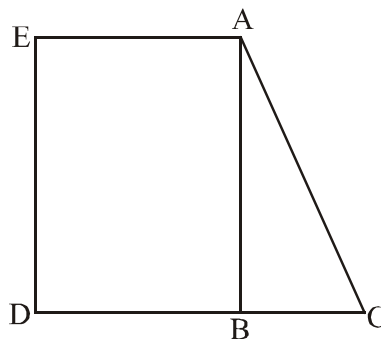**34.** Complete the following division and then find the values of A, B, C, D and E

```
            4 C 8 E
    A 9 ) 1 3 * B 6 5
          1 1 6
            2 2 B
            2 0 3
              2 * 6
              2 D 2
                2 4 5
                * * *
                  1 3
```

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

35. *ABC* is a right-angled triangle such that $\angle ABC = 90º$. The ratio of the sides *AC* and *BC* is 13 : 5. *ABDE* is rectangle of perimeter 504 m and *AB* : *DB* is 4 : 3. Find the length *BC* of the triangle.

(A) 90 m

(B) 75 m

(C) 60 m

(D) 50 m

36. If the magnitude of the volume of a solid cube is 50% more than the magnitude of its surface area then the length of all the edges of such a cube is

(A) 120 units   (B) 108 units

(C) 96 units   (D) 72 units

37. The value of $\sqrt[3]{8\sqrt{8\sqrt[3]{8}}}$ is also equal to

(A) $2^{4/3}$ (B) $2^{7/3}$

(C) $2^{5/3}$ (D) $2^{5/9}$

**38.** Find the smallest number of 6 digits such that when it is divided by 5, 6, 7 and 8, it leaves a remainder of 3, 4, 5 and 6, respectively.

(A) 100038   (B) 100398

(C) 1000758   (D) 100798

39. Forty per cent of total number of students in a class got 80% or more than 80% marks. Three-fourths of the remaining students got marks between 60% and 79% and the remaining students got less than 60% but above 50%. If the number of students securing less than 60% marks is 18, then the total number of students in the class is

(A) 120   (B) 112

(C) 100   (D) 96

40. Which one of the following figures (drawn by rotation) is different from the other three.

(A)

(B)

(C)

(D)
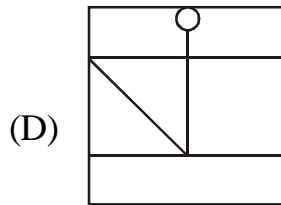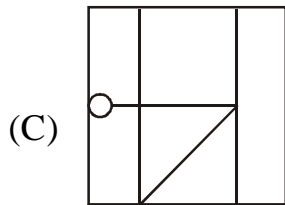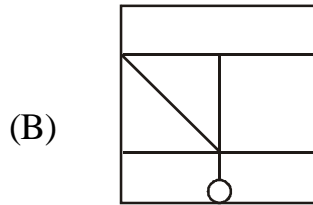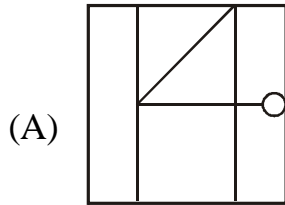
ANSWERS : CLASS VII MATHS

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