

22-09-2023

**Standard 8**  
**MATHEMATICS**

Time: 2.30 Hrs.

Marks: 100

## PART - A

## I. Choose the correct answer:

5×1=5

- 1)  $\frac{3}{4} \times \left(\frac{5}{8} + \frac{1}{2}\right) =$  \_\_\_\_\_.
- a)  $\frac{5}{8}$                       b)  $\frac{2}{3}$                       c)  $\frac{15}{32}$                       d)  $\frac{15}{16}$
- 2) The product of  $7p^3$  and  $(2p^2)^2$  is \_\_\_\_\_.
- a)  $14p^{12}$                       b)  $28p^7$                       c)  $9p^7$                       d)  $11p^{12}$
- 3) When 60 is subtracted from 60% of a number to give 60, the number is \_\_\_\_\_.
- a) 60                      b) 100                      c) 150                      d) 200
- 4) If in triangles PQR and XYZ,  $\frac{PQ}{XY} = \frac{QR}{YZ}$  then they will be similar if \_\_\_\_\_.
- a)  $\angle Q = \angle Y$                       b)  $\angle P = \angle Y$                       c)  $\angle Q = \angle X$                       d)  $\angle P = \angle Z$
- 5) In how many ways can you answer 3 multiple choice questions, with the choices A, B, C and D?
- a) 4                      b) 3                      c) 12                      d) 64

## II. Fill in the blanks:

5×1=5

- 6) The maximum number of digits in the cube of a two digit number is \_\_\_\_\_.
- 7) For  $a \neq 0$ ,  $a^0 =$  \_\_\_\_\_.
- 8) x axis and y axis intersect at \_\_\_\_\_.
- 9) A mobile phone is sold for ₹8,400 at a gain of 20%. The cost price of the mobile phone is \_\_\_\_\_.
- 10) The symbol  $\sim$  is used to represent \_\_\_\_\_ triangles.

## III. Write True or False:

5×1=5

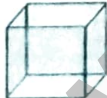

- 11) The average of two rational numbers lies between them.
- 12) The longest chord of a circle is diameter.
- 13)  $(-9, 0)$  lies on the x-axis.
- 14) If the present population of a city is P and it increases at the rate of r% p.a.

then the population n years ago would be  $P \left(1 + \frac{r}{100}\right)^n$ .

- 15) 8, 15, 17 is a Pythagorean triplet.

## IV. Match the following:

5×1=5

- 16)  -  $x = \frac{8}{3}$
- 17)  -  $x = 4$
- 18)  $\frac{x}{2} = 10$  - cylinder
- 19)  $20 = 6x - 4$  - cube
- 20)  $2x - 5 = 3 - x$  -  $x = 20$

## PART - B

## V. Answer the following questions: [any 12]

12×2=24

- 21) Reduce to the standard form  $\frac{-18}{-42}$ .
- 22) Add:  $\frac{-6}{11}, \frac{8}{11}, \frac{-12}{11}$
- 23) Simplify:  $\sqrt{12} \times \sqrt{3}$
- 24) Find the square of 17.
- 25) If the length of the arc is 48m and radius is 10m then find the area of the sector.

Tsi8M

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26) Which 3-D shape do the following net represent? Draw it.



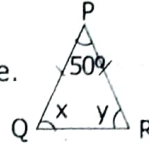
27) Find the product of the terms:  $-2mn$ ,  $(2m)^2$ ,  $-3mn$

28) Simplify:  $\frac{3m^2}{m} + \frac{2m^4}{m^3}$

29) If a car is sold for ₹2,00,000 from its original price of ₹3,00,000, then find the percentage of decrease in the value of the car.

30) The price of a rain coat was slashed from ₹1,060 to ₹901 by a shopkeeper in the rainy season to boost the sales. Find the rate of discount given by him.

31) Find the value of  $x$  and  $y$  in the following figure.



32) State Pythagorean theorem.

33) In class VIII, a math club has four members M, A, T and H. Find the number of different ways the club can elect a leader.

34) Define map colouring.

### PART - C

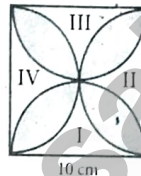
#### VI. Answer the following: (any 8)

8×5=40

35) Simplify:  $\left[ \frac{11}{8} \times \left( \frac{-6}{33} \right) \right] + \left[ \frac{1}{3} + \left( \frac{3}{5} \div \frac{9}{20} \right) \right] - \left[ \frac{4}{7} \times \frac{-7}{5} \right]$

36) Find the square root by prime factorisation method: (i) 784 (ii) 1156

37) Find the area of the shaded region in the square of side 10 cm



as given in the figure.  $\left( \pi = \frac{22}{7} \right)$

38) Verify Euler's formula for the table given below:

S.No.	Faces	Vertices	Edges
1	4	4	6
2	10	6	12
3	12	20	30
4	20	13	30

SIVAKUMAR-M,  
Sri Ram Mathric HSS,  
Vallam-622809,  
Tenkasi Dist.

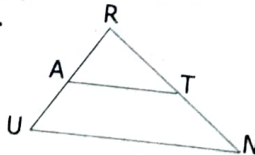
39) Find the product of (i)  $(2x+5y)(3x-4y)$  (ii)  $(2x+3)(2x-4)$

40) Divide: (i)  $(5y^3-25y^2+8y)$  by  $5y$  (ii)  $(4m^2n^3+16m^4n^2-mn)$  by  $2mn$

41) Ranjith bought a washing machine for ₹16,150 and paid ₹1,350 for its transportation. Then he sold it for ₹19,250. Find his gain (or) loss percentage.

42) The value of a motor cycle 2 years ago was ₹70,000. It depreciates at rate of 4% p.a. Find its present value.

43) If A is the mid point of RU and T is the mid point of RN. Prove that  $\Delta RAT \sim \Delta RUN$ .



44) Roll numbers are created with a letter followed by 3 digits in it. From the letters A, B, C, D and E and any 3 digits from 0 to 9. In how many possible ways can the roll numbers be generated? (except A000, B000, C000, D000 and E000)

### PART - D

#### VII. Answer all the questions:

2×8=16

- 45) a) Construct a quadrilateral DEAR with  $DE = 6$  cm,  $EA = 5$  cm,  $AR = 5.5$  cm,  $RD = 5.2$  cm and  $DA = 10$  cm. Also find its area. (OR)
- b) Construct a Trapezium CUTE with  $\overline{CU} \parallel \overline{ET}$ ,  $CU = 7$  cm,  $\angle UCE = 80^\circ$ ,  $CE = 6$  cm and  $TE = 5$  cm and find its area.
- 46) a) Draw straight lines by joining the points  $A(2, 5)$ ,  $B(-5, -2)$  and  $M(-5, 4)$ ,  $N(1, -2)$ . Also find the point of intersection. (OR)
- b) Draw the graph of  $y = 6$ .