

## 2nd Term Examination 2022-23

### SUBJECT : MATHEMATICS

Full Marks : 90

CLASS - VIII

Time : 2 hrs.

#### SECTION - A (10×4=40)

Answer all questions

1. A and B can do a piece of work in 12 days B and C in 15 days, C and A in 20 days. In how many days will they finish it, working together?
2. Find the least number of four digits which is a perfect square.
3. Find the product :  $(9x + 4)(9x - 2)$
4. Factorize :  $(2a + 3b)^2 - 4a(2a + 3b) + 5b(2a + 3b)$
5. Construct a quadrilateral PQRS in which  $PQ = 4.5\text{cm}$ ,  $QR = 5.6\text{cm}$ ,  $RS = 4.1\text{cm}$ ,  $\angle Q = 60^\circ$  and  $\angle R = 120^\circ$
6. If the length, breadth and height of a cuboid are in the ratio 6 : 5 : 4 and the total surface area of the cuboid is  $33300\text{cm}^2$ . Find the breadth of the cuboid
7. On a certain day, the temperature in a city was recorded as under

Time	5am	8am	11am	3pm	6pm
Temperature	16	20	24	22	18

Draw a bar graph representing the above information.

8. Factorize :  $9(x + y)^2 - 16(x - 2y)^2$
9. A can do a piece of work in 80 days. He works at it for 10 days and then B alone finishes the work in 42 days. In how many days will they complete the work together.
10. Find the weight of the solid cylinder of radius 10.5 cm, and height 60cm, if the material of the cylinder weights 5 grams per  $\text{cm}^3$ .

P.T.O.

**Section - B (5×10=50)**

**Answer any five**

- 1 a) Find the square root of 18 1475 (4)  
 b) Factorize  $x^2 - x^2 - xy + x + y - 1$  (2)  
 c) Construct a parallelogram ABCD in which BC = 6cm, CD = 4cm, and  $\angle C = 60^\circ$  (4)

- 2 a) If  $Z = \frac{1}{z} = 8$ , find the value of  
 i)  $Z + \frac{1}{Z}$       ii)  $Z^2 + \frac{1}{Z^2}$  (2+2)

b) Evaluate  $\left(7\frac{3}{4}\right)^2 - \left(2\frac{1}{4}\right)^2$

(2)

- c) Find the volume of the cylinder in which height = 42cm; base radius = 10cm. (4)

- 3 a) The result declared by a school was as under :

Passed in first division	Passed in second division	Passed in 3rd division	Failed
25%	45%	20%	10%

Represent the above data by a pie chart (4)

b) Expand : i)  $\left(\frac{x}{2} + \frac{y}{3}\right)^2$

ii)  $\left(3x - \frac{1}{3x}\right)^2$  (2+2)

- c) Factorize :  $27a^3b^3 - 45a^4b^2$  (2)

- 4 a) Find the least square number which is exactly divisible by each of the numbers 8, 9, 10 and 15 (4)

b) If  $a^2 + b^2 = 52$  and  $ab = 24$  Find the value of  $a-b$  (2)

c) Pipe A can fill a cistern in 4 hours while pipe B can empty it in 6 hours. If both of them are opened at the same time when the cistern is empty. How many hours will it take to fill the cistern (4)

5 a) A swimming pool  $70m \times 44m \times 3m$  is filled by water issuing from a pipe of diameter 35 cm at 6 m per second. How many hours does it take to fill the pool. (4)

b) Draw a histogram to represent the following data (4)

Weight (in kg)	No. of teachers
45-50	2
50-55	8
55-60	11
60-65	7
65-70	3

c) Evaluate :  $88 \times 92$  (2)

F a) A can dig a trench in 6 days while B can dig it in 8 days. They dig the trench working together and received Rs. 1120 for it. Find the share of each of it. (4)

b) The volume of a cube is  $343cm^3$  Find its surface area. (4)

c) Factorize :  $a^2 - 14a + 49$  (2)

---