

Chaitali Roy.
12.04.19.



ST. LAWRENCE HIGH SCHOOL
First Term Examination



Sub: Arithmetic

Class: VII

FM: 90

Duration: 2 hrs 30 mins

Date: 11.04.19

Model answers

Group – A

(I) Choose the correct option:- (1 X 5 = 5)

- 1) c 2) c 3) c 4) b 5) b

(II) Write True or False:- (1 X 5 = 5)

- a) True b) True c) False d) False e) True

(III) Fill in the blanks :- (1 X 5 = 5)

- a) Negative b) Standard form c) ₹ 135 d) 94 e) Range

(IV) Match the following:- (1 X 5 = 5)

Column A

Column B

- | | |
|----|----|
| 1) | 2) |
| 2) | 1) |
| 3) | 5) |
| 4) | 4) |
| 5) | 3) |

(V) Answer in one word:- (1 X 5 = 5)

- 1) Frequency 2) Vulgar fraction 3) Area 4) Direct 5) Rational

Group – B

(VI) Answer the following questions:- (2 X 5 = 10)

1) Find the value of $a + b + (-10)$ when $a = 5$, $b = -4$
 $= 5 - 4 - 10 = -9$

2) Simplify: $27 \div (-9) + 3 \times (-2)$
 $27 \times \frac{1}{-9} - 6 = -3 - 6 = -9$

3) Hema had $\frac{5}{8}$ Kg of tea. She repacked the tea into bags of $\frac{5}{32}$ Kg each. How many bags of tea did Hema get?

Let the no. of bags of tea be x

$$\therefore \frac{5x}{32} = \frac{5}{8}$$

$$\text{or, } x = \frac{5 \times 32}{5 \times 8} = 4 \text{ bags}$$

4) Simplify:- $3^8 \div 3^{-2}$
 $\frac{3^8}{3^{-2}} = 3^{8-(-2)} = 3^{8+2} = 3^{10} = 59049$

5) Find the perimeter of a square whose area is 441 m^2 .

$$a = \sqrt{441} = 21 \text{ m}$$

$$\therefore \text{Perimeter} = 4 \times 21 = 84 \text{ m}$$

(VII) Answer the following questions:- ANY FIVE

(3 X 5 = 15)

- 1) Find the product of $(-5) \times (-4) \times (-3) \times (-2) \times (-1)$
 $= -120$
- 2) Soham has ₹ 60 in his wallet. Each day he takes out ₹ 5. What integer represents the change in the number of rupees in his wallet over 6 days?
Total money = ₹ 60
After 6 days , required money = ₹ $(60 - 6 \times 5) = ₹ (60 - 30) = ₹ 30$
 \therefore It is represented by the integer as (30)
- 3) Calculate the total cost of 6 pens priced at ₹ 25.35 and 3 books priced at ₹ 156.80
Total cost of 6 pens = ₹ $(25.35 \times 6) = ₹ 152.10$
Total cost of 3 books = ₹ $(156.80 \times 3) = ₹ 470.40$
 \therefore Total cost = ₹ $(152.10 + 470.40) = ₹ 622.50$
- 4) Simplify: $[(\frac{5}{9} \times \frac{3}{7}) \div \frac{8}{21}] \times (\frac{-3}{5})$
 $\frac{5}{9} \times \frac{3}{7} \times \frac{21}{8} \times \frac{-3}{5} = \frac{-3}{8}$
- 5) Simplify: $(5^{-1} \times 3^{-1})^{-1} \div 6^{-1}$
 $(\frac{1}{5} \times \frac{1}{3})^{-1} \div \frac{1}{6} = (\frac{1}{15})^{-1} \div \frac{1}{6} = 15 \times 6 = 90$
- 6) If 20 workers consume a certain quantity of flour in 14 days, in how many days will 8 workers consume the same quantity of flour?

Workers	Days
20	14
8	x

\therefore By the problem,

$$\frac{20}{8} = \frac{x}{14}$$
$$\text{or, } x = \frac{20 \times 14}{8} = 35 \text{ days}$$

- 7) The perimeter of a rectangle is 72 cm. The length is 3 times its width. Find the area of the rectangle.

Let the width be x cm \therefore Length = 3x cm

\therefore By the problem ,

$$2(3x + x) = 72$$

$$\text{or, } x = \frac{72}{8} = 9$$

\therefore Length = 27 cm and Width = 9 cm

\therefore Area of the rectangle = $27 \times 9 = 243 \text{ cm}^2$

Group - C

(VII) Answer the following questions:- ANY EIGHT

(5 X 8 = 40)

- 1) Sourav got a baby rabbit and a pup. The rabbit weighs $\frac{7}{16}$ Kg and the pup weighs $\frac{3}{4}$ Kg.
How many times is the pup heavier than the baby rabbit?
Required times = $\frac{3}{4} \div \frac{7}{16} = \frac{3 \times 16}{4 \times 7} = \frac{12}{7} = 1\frac{5}{7}$ times
- 2) Divide: 9.729 by 2.3
 $\frac{9.729}{2.3} = \frac{9729}{2300} = 4.23$
- 3) 28 pumps can empty a reservoir in 18 hours. In how many hours can 42 such pumps do the same work?

No. of pumps

↓ 28
42

No. of hours

18 ↑
x

∴ By the problem,

$$\frac{28}{42} = \frac{x}{18}$$

$$\text{or, } x = \frac{28 \times 18}{42} = 12 \text{ hours}$$

- 4) A and B together can do a piece of work in 5 days, but A alone can do it in 10 days. How many days would B alone take to do the same work?

$$\text{In 1 day part of the work done by B} = \frac{1}{5} - \frac{1}{10} = \frac{2-1}{10} = \frac{1}{10}$$

∴ No. of days required by B alone to complete the work = 10 days

- 5) A cistern can be filled by one tap in 6 hours and another tap in 8 hours. How long will it take to fill the cistern, if both the taps are opened together?

$$\text{Part of the cistern filled when two taps are opened together} = \frac{1}{6} + \frac{1}{8} = \frac{4+3}{24} = \frac{7}{24}$$

$$\therefore \text{Required time} = \frac{24}{7} \text{ hours} = 3\frac{3}{7} \text{ hours}$$

- 6) The area of a rectangular field is 120 m^2 . Its length is 40 m. Find the cost of fencing the boundary of the field at the rate of ₹ 3.20 per metre.

$$\text{Breadth of the field} = \frac{120}{40} \text{ m} = 3 \text{ m}$$

$$\therefore \text{Perimeter of the field} = 2(40+3) \text{ m} = 86 \text{ m}$$

$$\therefore \text{Total cost} = ₹ 86 \times 3.20 = ₹ 275.20$$

- 7) A room measures 12 m x 9 m. The floor of the room is to be covered by marble tiles measuring 45 cm by 30 cm. How many tiles are needed?

$$\text{Required no. of tiles} = \frac{\text{Area of the floor}}{\text{Area of each tile}} = \frac{1200 \times 900}{45 \times 30} = 800 \text{ tiles}$$

- 8) A path 2 m wide is built along the border inside a square park of side 100 m. Find the cost of covering the remaining portion of park by grass at the rate of ₹15 per sq. m.

Area of the portion of the park to be covered by grass

$$\therefore \text{Required cost} = ₹ (96 \times 96 \times 15) = ₹ 138240$$

- 9) Find the mean of the first ten natural numbers

$$\text{Mean} = \frac{1+2+3+4+5+6+7+8+9+10}{10} = \frac{55}{10} = 5.5$$

- 10) If the mean of 16, 14, x, 23, 20 is 18, find the value of x.

$$\frac{14+16+x+20+23}{5} = 18$$

$$\text{or, } x = 90 - 73 = 17$$