No. of printed pages:7

CLASS – VII

ANNUAL EXAM – 2023-24

SUBJECT – MATHEMATICS

SET – C1

TIME : $2\frac{1}{2}$ hrs **Max.Marks: 60**

GENERAL INSTRUCTIONS: Read the following instructions carefully and follow them:

(i) This question paper contains 16 questions. All questions are compulsory.

(ii) Question paper is divided into FIVE sections – Section A, B, C, D and E.

(iii) In section A – question number 1 have multiple choice questions (MCQs) of 1 mark each.

(iv) In section B – question number 2 to 7 are Objective type questions of 2 marks each.

(v) In section C – question number 8 to 10 are Short Answer (SA) type questions carrying 3 marks each.

(vi) In section D – question number 11 to 13 are Long Answer (LA) type questions carrying 5 marks each.

(vii) In section E – question number 14 to 16 are source based/case study questions carrying 4 marks each. Internal choice is provided in 2 marks question in each source based/case study question.

(viii) There is no overall choice. However, an internal choice has been provided in 1 question in Section B, 2 question in Section C and 2 questions in Section D.

(ix) Draw neat figures wherever required. Take $\pi = 22/7$ wherever required if not stated.

SECTION - A

Question 1 consists of Multiple Choice questions (i-xii) of 1 mark each.

Q1. (i) 0.09 is equal to

(a) 90% (b) 9% (c) 0.9% (d) 0.09

(ii) (- 1) × (- 1) × (- 1) × ……. 10 times is equal to

(a) 1 (b) – 1 (c) 10 (d) none of these

(iii) What is $\frac{3}{4}$ of 12 :

(a) 9 (b)16 (iii)18 (iv)32

(iv) The observation that occurs most often is called

(a) Mean (b) Median (c) Mode (d) Frequency

(v) What is the value of y in 10y – 20 = 50

a) 9 b) 8 c) 7 d) 6

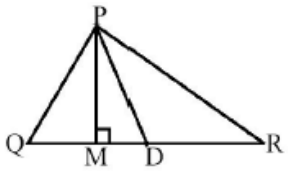
(vi) Additive inverse of $\frac{2}{3} - \frac{5}{6}$ is

(a) $\frac{3}{2}$ (b) $\frac{-3}{2}$ (c) $\frac{1}{6}$ (d) $\frac{-1}{6}$

(vii) In a die, the number of faces with odd number of dots is

(a) 3 (b) 6 (c) 5 (d) 4

(viii) In Δ PQR , PM is



(a) Median (b) altitude (c) bisector (d) side

(ix) The standard form of the approximate distance of moon from the earth 121117000 m is

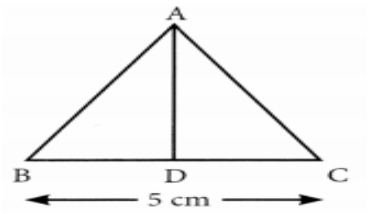
(a) 121117×10^3 (b) 1.21117×10^3

(c) 1.21117×10^8 (d) 1.21117×10^{10}

(x) Which of the following is the numerical coefficient of - 5xy?

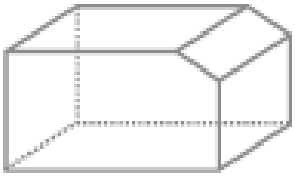
a) - 5 b) -x c) 5 d) -y

(xi) Find AD in the following figure, if area of ΔABC is 6 cm^2.



(a) 2.4 cm (b) 4 cm (c) 5 cm (d) 3 cm

(xii) The number of vertices and faces in the given shape are



a) 10 and 9 b) 8 and 7 c) 10 and 7 d) 7and 10

SECTION – B

Q 2 to 7 are Objective type questions of 2 marks each.

Q2. Solve : $3(2x - 1) + 5 = 14$

Q3. The population of a city is 500000 and 30% are females, 40% are males and remaining are children. Find the number of children?

Q4. Arrange the rational numbers $\frac{-6}{5}, \frac{5}{6}, \frac{-8}{15}, \frac{8}{3}$ in descending order.

Q5. Simplify by combining like terms and find the value for m = 5 and n = 1.

2m – (m – 3n) – n

OR

Get the algebraic expressions in the following cases using variables, constants and arithmetic operations.

(i) Subtraction of 2p from q.

(ii) One- fourth of the sum of numbers m and n.

Q6. What is the order of rotational symmetry of a rectangle and How many lines of symmetry are there in an isosceles right triangle?

Q7. The temperature at 12 noon was 10°C above zero. If it decreases at the rate of 2°C per hour until midnight, What would be the temperature at midnight?

SECTION – C

Q 8 to 10 are Short answer type questions of 3 marks each.

Q8. Vidya and Pratap went for a picnic. Their mother gave them a water bottle that contained 5 litres of water. Vidya consumed $\frac{2}{5}$ of the water. Pratap consumed the remaining water.

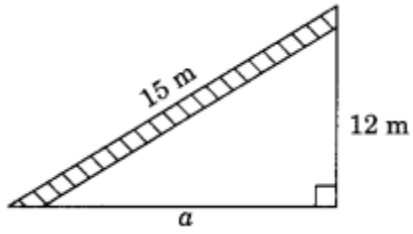
(i) How much water did Vidya drink?

(ii) What fraction of the total quantity of water did Pratap drink?

OR

A vehicle covers a distance of 43.2 km in 2.4 litres of Petrol. How much distance will it cover in one litre of petrol?

Q9. A 15 m long ladder reached a window 12 m high from the ground on placing it against a wall at a distance a. Find the distance of the foot of the ladder from the wall.



Q10. Using laws of exponents, simplify and write the answer in exponential form:

$(2^{20} \div 2^{15}) \times 2^3$

OR

Simplify and write in exponential form:

$$\frac{5 \times 27 \times 2^3}{25 \times 3^4 \times 8^0}$$

SECTION – D

Q 11 to 13 is Long Answer type questions of 5 marks each.

Q11. In a public library, the following observations were recorded by the librarian in a particular week:

Days	Mon	Tues	Wed	Thurs	Fri	Sat
Newspaper Readers	400	600	350	550	500	350
Magazine Readers	150	100	200	300	250	200

(a) Draw a double bar graph choosing an appropriate scale.

(b) On which day, the number of readers in the library was maximum?

OR

The scores in mathematics test (out of 25) of 15 students is as follows:
19, 25, 23, 20, 9, 20, 15, 10, 5, 16, 25, 20, 24, 12, 20
Find the mean , mode and median of this data. Are they same?

Q12. a) Arun bought a car for ₹ 3,50,000. The next year, the price went upto ₹ 3,70,000. What was the Percentage of price increase?

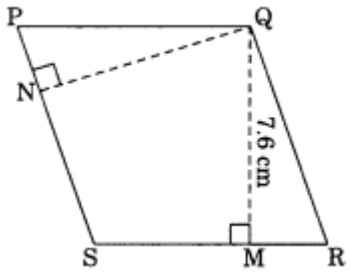
(b) Gardening shears bought for ₹ 250 and sold for ₹ 325 , find the profit % or loss% on this transaction?

OR

What rate gives ₹ 280 as interest on a sum of ₹ 56,000 in 2 years? Also calculate the Amount?

Q13. PQRS is a parallelogram. QM is the height of Q to SR and QN is the height from Q to PS. If SR = 12cm and QM = 7.6cm. Find :

(a) The area of parallelogram PQRS
(b) QN, If PS = 8cm



SECTION – E

Q 14 to 16 are Case study questions of 4 marks each.

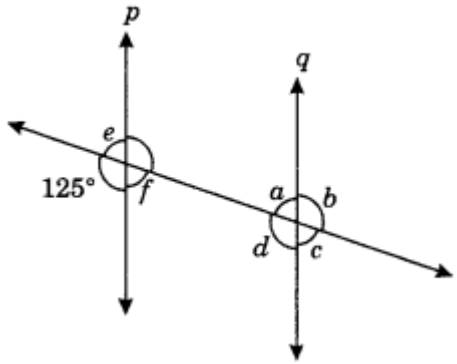
Q14. When two or more parallel lines are intersected by a transversal then

Pair of corresponding angles are equal.

Pairs of alternate interior/exterior angles are equal and

Cointerior angles are supplementary.

In the given figure, p || q.



Based on the above information, answer the following questions:

(a) What kind of ∠e and ∠f are ?
(b) What is the measure of ∠d ?
(c) What is the measure of ∠f and ∠a ? (Give reason)

OR

What is the measure of ∠e and ∠c ? (Give reason)

Q15. There are many situations that involve fractional numbers . You can represent a distance of 750 m above sea level as $\frac{3}{4}$ km. Can we represent 750 m below sea level in km? Can we denote the distance of $\frac{3}{4}$ km below sea level by $\frac{-3}{4}$? We can see that $\frac{-3}{4}$ is neither an integer nor a fractional number as fractions can not be negative .Such number are called rational numbers . A rational number is a number of the form $\frac{p}{q}$, where p and q are integers and q ≠ 0.

So now, we shall introduce the concept of rational numbers.

Based on above situation, answer the following questions.

i) Compare $\frac{-3}{4}$ and $\frac{-13}{2}$.

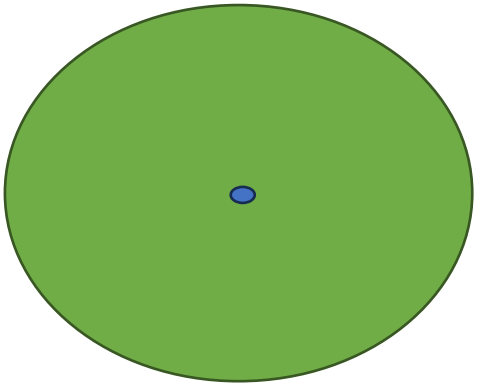
ii) Write $\frac{3}{-24}$ in standard form.

iii) List two rational numbers between – 2 and – 3.

OR

Draw the number line and represent the rational numbers $-\frac{1}{6}$ on it.

Q16. A gardener wants to fence a circular garden of diameter 21 m.



(a) Find the radius of garden
(b) Find the length of the rope he needs to purchase for fencing it ?
(c) Find the area of the garden ?

OR

Find the cost of the rope, if he makes 2 rounds of fence.

if it costs ₹ 4 per metre. (Take π =22/7)