



ANANDALAYA
ANNUAL EXAMINATION
Class: VII

Subject: Mathematics
Date : 05-03-2024

M.M: 80
Time: 3 Hours

General Instructions:

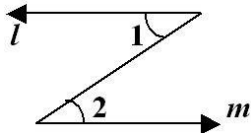
- i) This question paper contains 35 questions.
- ii) Questions 1 – 12 in Section A are multiple choice type questions carrying 1 mark each.
- iii) Questions 13 – 20 in Section B are short-answer type questions carrying 2 marks each.
- iv) Questions 21 – 28 in Section C are short -answer type questions carrying 3 marks each.
- v) Question 29 – 35 in Section D are long-answer type questions carrying 4 marks each.
- vi) Section D has 2 case based question carrying 4 marks each with subparts of values of 2, 1 and 1 mark each respectively.
- vii) All questions are compulsory. However, internal choice of 3 questions of 2 marks, 3 questions of 3 marks and 2 questions of 4 marks have been provided.

SECTION – A

1. The mode of the data 2, 2, 2, 3, 3, 4, 5, 5, 5, 6, 6, 8 is _____ . (1)
(A) 2 (B) 5 (C) 8 (D) 2 & 5 both

2. Write the statement “One third of a number plus 5 is 8” in the form of equations: (1)
(A) $3m + 5 = 8$ (B) $m + 5 = 8$ (C) $\frac{1}{3}m + 5 = 8$ (D) $\frac{1}{3}m + 8 = 5$

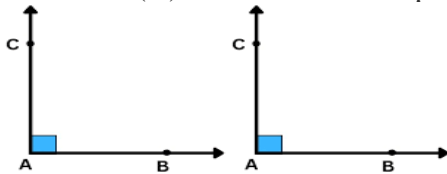
3. If $l \parallel m$, then $\angle 1 = \angle 2$ because they are _____ (1)



- (A) corresponding angles (B) vertically opposite angles
(C) alternate interior angles (D) supplementary angles

4. How many acute angles can a right triangle have? (1)
(A) 1 (B) 2 (C) 3 (D) 0

5. Assertion (A): Given below is a pair of supplementary angles. (1)



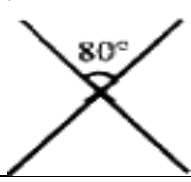

Reason (R): Sum of two right angles is not supplementary

- (A) Both A and R are correct and R is the correct explanation for A.
(B) Both A and R are correct and R is not the correct explanation for A.
(C) A is true but the R is false.
(D) Both A and R are false.

6. Assertion (A): The range of the data 114, 115, 116, 118, 119, 125, 130, 141, 126, 116, 113, 118, 120, and 126 is 100. (1)
Reason (R): The difference between the highest and the lowest value of the data is called range.
- (A) Both A and R are correct and R is the correct explanation for A.
(B) Both A and R are correct and R is not the correct explanation for A.
(C) A is true but R is false.
(D) A is false but R is true.
7. Fill in the box with the correct symbol: $\frac{-4}{5}$ $\frac{-5}{7}$ (1)
(A) > (B) < (C) = (D) none of these
8. The numbers _____ and _____ are their own reciprocals. (1)
(A) 1 and 0 (B) 1 and -1 (C) -1 and 0 (D) none of these
9. When the area and the base of a triangle are given, the height is _____. (1)
(A) $\frac{(2 \times \text{area})}{\text{base}}$ (B) $\frac{(2 \times \text{base})}{\text{area}}$ (C) $\frac{\text{base}}{(2 \times \text{area})}$ (D) $\frac{\text{area}}{(2 \times \text{base})}$
10. π (pi) is _____. (1)
(A) ratio of circumference to diameter (B) 21/17
(C) diameter to circumference (D) 3.41
11. The distance of the Sun from the centre of the Milky Way galaxy is estimated to be 300,000,000,000,000,000 m (1)
(A) 3×10^{10} m (B) 3×10^{20} m
(C) 30×10^{20} m (D) 300×10^{20} m
12. The letter 'E' of the English alphabet has reflectional symmetry (i.e., symmetry related to mirror reflection) about _____. (1)
(A) a vertical mirror (B) a horizontal mirror
(C) both (A) and (B) (D) none of these

SECTION – B

13. Fill in the boxes: (2)

Shape	Order of Rotation	Angle of Rotation
i) 		
ii) 		

14. i) Write the exponential form of $8 \times 8 \times 8 \times 8$ taking base as 2. (2)

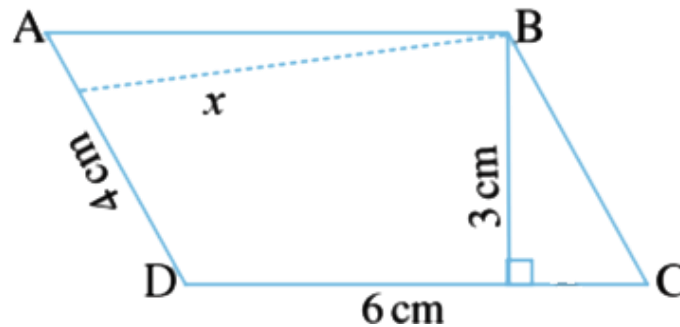
ii) Express 540 as the product of its prime factors.

OR

i) Compare 2.07×10^{12} and 11.5×10^8

ii) Simplify and find the value of $(5^2 + 7^2 + 3^2)^0$

15. Say true or false and justify your answer: (2)
- i) $10 \times 10^{11} = 100^{11}$
- ii) $3^3 \div 3^0 = 3^{30}$
16. What should be the value of p if the value of $2x^2 + x - p$ equals to 15, when $x = -1$? (2)
17. How many times a wheel of radius 35 cm must rotate to go 352 m? (2)
18. The two sides of a parallelogram ABCD are 6 cm and 4 cm. The height corresponding to the base CD is 3 cm. (2)



Find the

- i) area of the parallelogram.
 ii) height corresponding to the base AD.

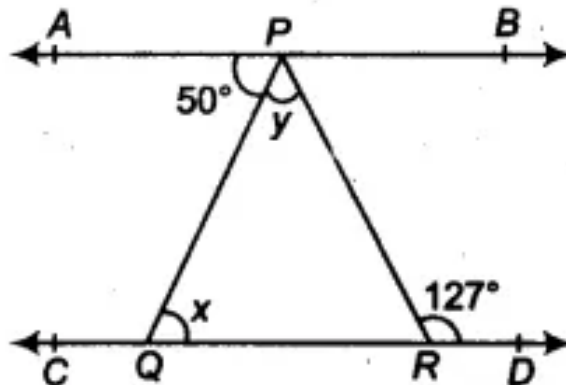
OR

Shreya wants to put a lace on the edge of a circular table cover of diameter 1.5 m. Find the length of the lace required and also find its cost if one meter of the lace costs ₹ 15 (Take $\pi = 3.14$).

19. Manohar pays an interest of ₹ 750 for two years on a sum of ₹ 4,500. Find the rate of interest. (2)
20. Among the two supplementary angles, the measure of the larger angle is 36° more than that of the smaller angle. Find the measures of both the angles. (2)

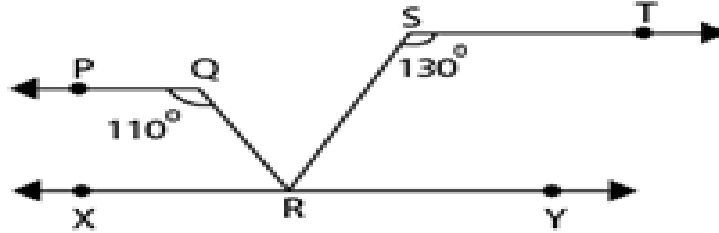
OR

In fig., $AB \parallel CD$, $\angle APQ = 50^\circ$, $\angle PRD = 127^\circ$, find the value of x and y respectively.

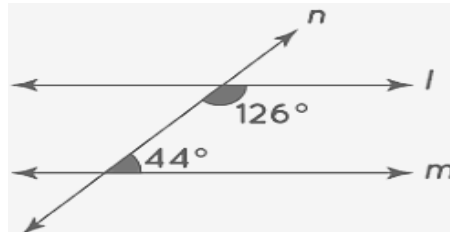


SECTION – C

21. i) In fig, if $PQ \parallel ST \parallel XY$, $\angle PQR = 110^\circ$ and $\angle RST = 130^\circ$, then find the value of $\angle QRS$. (3)



- ii) In the figure given below, decide whether l is parallel to m . Give reason.



22. i) State the number of lines of symmetry for the following figures: (3)
 a) A rhombus
 b) A regular hexagon

- ii) After rotating by 60° about a centre, a figure looks exactly the same as its original position. At what other angles, will this happen for the figure?

- iii) Draw a rough sketch of a quadrilateral with line symmetry but not a rotational symmetry of order more than 1.

23. Identify and show the terms and their factors in the following expression by factor tree method: (3)

i) $1.8xy - 3.2y + 5.5x$

ii) $\frac{3}{4}ab^2 + 7a^2b$

OR

- i) Classify the following polynomials as monomials, binomials or trinomials.
 $-z + 5$; $x + y + z$; $y + z + 100$.

- ii) Collect like terms and simplify the expression: $12m^2 - 9m + 5m - 4m^2 - 7m + 10$

24. i) Anwar thinks of a number. If he is taking away 7 from $\frac{5}{2}$ of the number, the result is 23. (3)
 What is the number?

- ii) Evaan thinks of a number. If he adds 19 to it and divides the sum by 5, he will get 8. What is the number?

25. Shazli took a wire of length 44 cm and bent it into the shape of a circle. (3)
 (a) Find the radius of that circle.

- (b) Find its area.

- (c) If the same wire is bent into the shape of a square, which figure encloses more area, the circle or the square?

OR

From a circular sheet of radius 14 cm, two circles of radius 3.5 cm each and a rectangle of length 3 cm and breadth 1 cm are removed (as shown in the adjoining figure).

Find the area of the remaining sheet.



26. List three rational numbers between $\frac{-1}{5}$ and $\frac{-4}{3}$. Represent the given rational numbers on the number line. (3)

OR

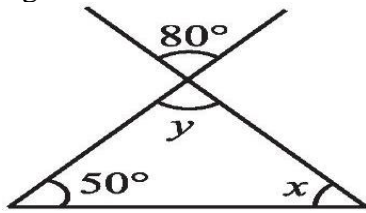
- i) Write the following rational numbers in ascending order:

$$-\frac{3}{7}, \frac{5}{21}, -\frac{13}{7}, \frac{0}{57}.$$

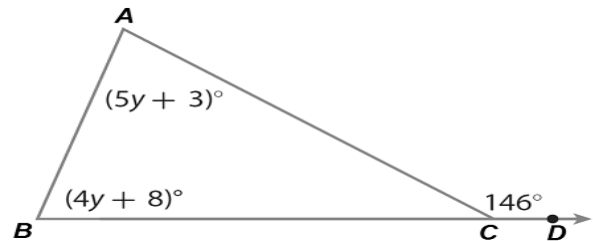
ii) Find: $\frac{7}{9} - \frac{2}{5}$

27. If ₹ 250 is to be divided amongst Ravi, Raju and Roy, so that Ravi gets two parts, Raju gets three parts and Roy gets five parts. How much money will each get? What will be the percentage of the money each one gets? (3)

28. i) Find the value of x and y in the adjoining figure. (3)



- ii) Find the value of y in the adjoining figure. (3)



SECTION - D

29. Simplify: (4)

i) $\frac{3^2 \times 7^8 \times 13^6}{21^2 \times 91^3}$

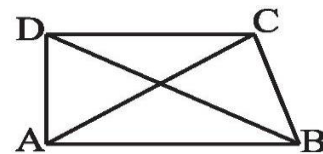
ii) $8^2 \div 2^3$

30. Simplify the expression and find its value when $a = 5$ and $b = -3$. (4)

i) $2(a^2 + ab) + 3 - ab$

ii) $a^2 + 2ab + 3(b^2 + a^2)$

31. ABCD is a quadrilateral.
Is $AB + BC + CD + DA > AC + BD$? (4)



OR

- i) Determine whether the triangle whose sides are 3 cm, 4 cm and 5 cm is a right-angled triangle.
- ii) The lengths of two sides of a triangle are 12 cm and 15 cm. Between what two measures should the length of the third side fall?

32. i) On a certain sum the interest paid after 3 years is ₹ 450 at 5% rate of interest per annum. Find the sum. (4)
- ii) A man got a 10% increase in his salary. His new salary is ₹ 1,54,000. Find his original salary.
33. A Mathematics teacher wants to see, whether the new technique of teaching she applied after quarterly test was effective or not. She takes the scores of the 5 children in the quarterly test (out of 25) and in the half yearly test (out of 25): (4)

Students	Aisha	Krish	Madan	Arun	Ayaan
Quarterly	10	15	12	9	20
Half Yearly	15	18	16	15	21

- i) Draw a double bar graph for the data given above.
- ii) What is the range of the marks of these 5 students in both the tests?

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.

34. Rajendra, a farmer, had a son and a daughter. He decided to divide his property among his children. So, he wrote a “WILL” about distribution of his property. According to his “WILL”, he desired to give $\frac{3}{5}$ of the property to his son, $\frac{1}{3}$ to his daughter and the rest to a charitable trust. After his death his “WILL” was opened and read out by the Advocate in the presence of all villagers. (4)
- i) Whose share was more - the son’s share or the daughter’s share?
- ii) How much was the total money given to the daughter and the son?
- iii) How much of the property did the charitable trust get?
35. The people of a village thought of planting some plants on world environment day in the village garden. They planted a total of 102 plants in the village garden. Some of the plants were fruit plants. The number of non-fruit plants were 2 more than 3 times the number of fruit plants. (4)
- Now answer the following questions:
- i) How many fruit plants were planted?
- ii) Which type of plants were planted more - Fruit plant or non-fruit plants? By how much?
- iii) Form an equation, if number of non-fruit plants were 9 less than two times the number of fruit plants, the total number of plants remaining same.