FIRST TERM EXAMINATION- 2024-2025
CLASS- VIII
SUBJECT-MATHS

TIME: 3 HOURS

MM: 80

PLEASE NOTE-
- This Question paper consists of 4 sections.
- Section A contains 40 questions carrying 1 mark each.
- Section B contains 5 questions carrying 2 marks each.
- Section C contains 6 questions carrying 3 marks each.
- Section D contains 3 questions carrying 4 marks each.
- Show proper steps and working for all questions of Section B , C and D.
- Draw neat and labelled figures wherever necessary.

SECTION-A

MULTIPLE CHOICE QUESTIONS

1. Simplify 3^{-3} :

(a) -27   (b) -9   (c) $-\frac{1}{9}$ (d) $\frac{1}{27}$

2. The value of $(7^{-1} - 8^{-1})^{-1} - (3^{-1} - 4^{-1})^{-1}$ is:

(a) 44   (b) 56   (c) 68   (d) 12

3. Both x and y vary directly with each other and when x is 10, y is 14, which of the following is not a possible pair of corresponding values of x and y?

(a) 25 and 35   (b) 35 and 25   (c) 35 and 49   (d) 15 and 21

4. A car can cover a distance of 522 km on 36 litres of petrol. How far can it travel on 14 litres of petrol?

(a) 230 km   (b) 232 km   (c) 203 km   (d) none of these

5. $-\frac{3}{8} + \frac{1}{7} = \frac{1}{7} + \left(-\frac{3}{8}\right)$ is an example to show that

(a) addition of rational numbers is commutative.

(b) rational numbers are closed under addition.

(c) addition of rational number is associative.

(d) rational numbers are distributive under addition.

6. The multiplicative inverse of $\left(-1\frac{1}{7}\right)$ is:

(a) $\frac{8}{7}$ (b) $\frac{-8}{7}$ (c) $\frac{7}{8}$ (d) $\frac{7}{-8}$

7. The sum of the measures of the external angles of any polygon is:

(a) 180°   (b) 360°   (c) 540°   (d) depends on the number of sides

8. Which of the statement is not correct about square:

(a) Each angle of the square is not a right angle

(b) The diagonals of square are equal.

(c) All the sides are equal.

(d) The diagonals bisect each other at right angle.

9.   **Assertion:** $4x+x = 2$ is a linear equation.

    Reason: Solution of the equation is -2.

(a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion.

(b) Both Assertion and Reason are true, but Reason is not the correct explanation of Assertion.

(c) Assertion is true but Reason is false.

(d) Assertion is false but Reason is true.

10. A graph that displays data that changes continuously over periods of time is:

(a) bar graph   (b) linear graph   (c) histogram   (d) line graph

11. The solution of which of the following equations is neither a fraction nor an integer.

(a) $3x + 2 = 5x + 2$ (b) $4x – 18 = 2$ (c) $4x + 7 = x + 2$ (d) $5x – 8 = x + 4$

12. In a town, 25% of people like coffee, 20% of people like tea, and the rest of the people like juice. If there are 300 people in the town, then how many people like Juice?

(a) 255   (b) 300   (c) 165   (d) 105

13. **Assertion:** If marked price of an article is Rs.1300 and discount is 10%. The selling price of the article is Rs.1180.

Reason: The selling price of an article can be calculated by the formula

S.P = Marked Price – Discount.

(a) Both Assertion and Reason are correct, and Reason is the correct explanation for Assertion

(b) Both Assertion and Reason are correct, and Reason is not the correct explanation for Assertion.

(c) Assertion is true but the reason is false.

(d) Assertion is false but the reason is true.

14. The usual form of 3.52×10^5 is:

(a) 0.000352   (b) 352000   (c)3.52   (d)352

15. Which of these is a solution of the equation $2(a - 9) = -14$?

(a) a=0   (b) a = 1   (c) a = 2   (d) a = 3

FILL UPS

16. The product of a non-zero rational number and its reciprocal is _____.

17. The reciprocal of $\frac{2}{5} \times \left(-\frac{4}{9}\right)$ is _____.

18. If marked price of an article is ₹1,200 and the discount is 12% then the selling price of the article is _____

19. The number of sides of a regular polygon, where each exterior angle has a measure of 36°, is _____.

20. By solving $(6^0 - 7^0) \times (6^0 + 7^0)$ we get _____.

21. The expression for 8^{-2} as a power with the base 2 is _____.

TRUE/FALSE

22. For all rational numbers x and y, $x - y = y - x$.

23. -1 is not the reciprocal of any rational number.

24. ⟩ is a concave hexagon. _____

25. The standard form for 0.000037 is 3.7×10^{-5}.

26. $(-2)^0 = 2$

CASE STUDY BASED QUESTIONS

(I) A four days' scout and guide camp were arranged by the school for class 8 students. The students were so excited to go for the camp. Based on this context, answer the following question:

27. If two quantities x and y vary inversely with each other, then

(a) $\frac{x}{y}$ remains constant   (b) $x - y$ remains constant.

(c) $x + y$ remains constant   (d) $x \times y$ remains constant.

28. Number of students to the camp and numbers of buses required to go to the camp are in:

(a) direct proportion   (b) inverse proportion

(c) neither direct nor inverse   (d) both direct and inverse proportion

29. In the camp, they assigned some jobs to the students. 45 persons complete a job in 20 minutes. How many minutes will 30 persons take to complete the same job?

(a) 15 minutes   (b) 30 minutes   (c) 90 minutes   (d) 45 minutes

30. In the camp activities, there was a competition of writing words. Manvi can write 200 words in 30 minutes. How many words she will write in 12 minutes?

(a) 360 words   (b) 80 words   (c) 240 words   (d) 60 words

(II) Ria loves reading books. While roaming in the market she came across a book shop selling books on sale. The table below shows the total marked price of the books of different sections that Ria bought.

Genre	Marked Price (in ₹)
Science	₹1500
Horror	₹1850
Biography	₹500

31. Discount percentage is always calculated on:

(a) Profit   (b) Marked Price   (c) Discount   (d) Selling Price

32. If there is a discount of 28% on all the sections of books, what is the total amount that she has to pay?

(a) ₹1078   (b) ₹962.50   (c) ₹2772   (d) ₹ 2887.50

33. The store charges a Sales Tax of 5%. Find the amount of tax paid by her if she buys the above mentioned books on sale.

(a) ₹138.60   (b) ₹277   (c) ₹200   (d) ₹192.50

34. A psychology book marked for ₹800 is sold for ₹600. Find discount percent. _____

PICTURE BASED QUESTIONS

(I) The graph below describes a journey of Rohan that has several parts to it, each represented by a different straight line. Study the graph and answer the following questions:
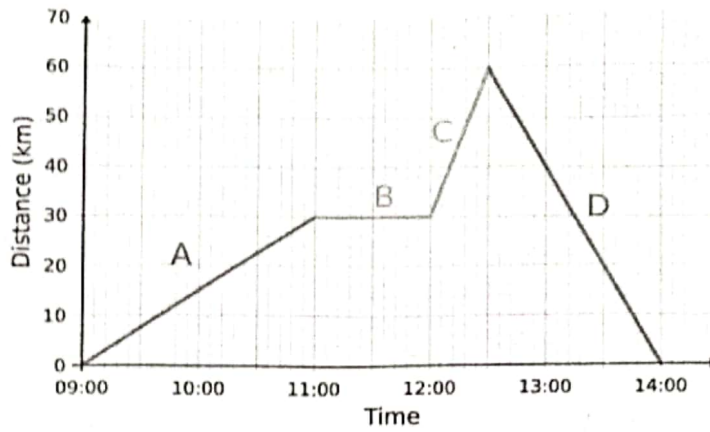
35. The speed between 9:00 to 11:00 is

(a) 10 km/ hour   (b) 15 km/hour   (c) 20 km/hour   (d) 25 km/hour

36. Between which period of time Rohan was not travelling any distance?

(a) 11:00 – 12:00   (b) 12:00 – 13:00   (c) 13:00 – 14:00   (d) None of these

37. What distance did he travel between 12:00 to 12:30?

(a) 10 km   (b) 20 km   (c) 30 km   (d) 40 km

(II) In a 'Rangoli' competition, a 'Rangoli' has been drawn on the floor of school by SCMS students. ABCD and PQRS both are in the shape of rhombus and four semi-circles drawn on each side of rhombus ABCD. The figure is shown below:
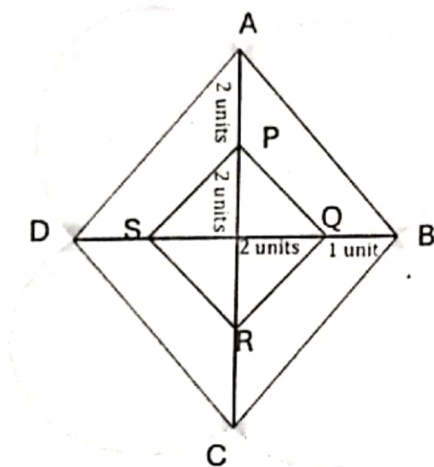
38. Is PQRS a special kind of rhombus? If yes, then write the name of that kind.

(a) Square   (b) Rectangle

(c) Parallelogram   (d) Kite

39. What are the lengths of the diagonals of the rhombus ABCD? _____

40. Find the radius of the semi-circle drawn on each side of the rhombus ABCD. _____

SECTION – B

41. Find: $\dfrac{3}{7} + \left(\dfrac{-6}{11}\right) + \left(-\dfrac{8}{21}\right) + \dfrac{5}{22}$

42. Solve for x:

$$\frac{3x + 5}{2x + 1} = \frac{1}{3}$$

43. Salma bought an article for ₹784 which included GST of 12%. What is the price of the article before GST was added?
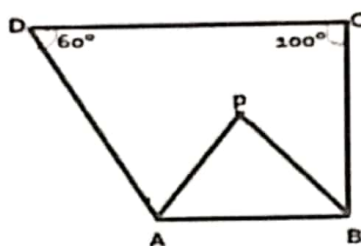
44. If $x = \left(\dfrac{3}{2}\right)^2 \times \left(\dfrac{2}{3}\right)^{-4}$, then find the value of x^{-2}

45. A person has money to buy 25 cycles worth ₹ 500 each. How many cycles he will be able to buy if each cycle is costing ₹125 more?
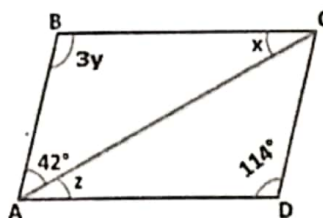
SECTION – C

46. What should be added to twice the rational number $-\dfrac{7}{3}$ to get $-\dfrac{3}{7}$?

47. In the given figure, ABCD is a quadrilateral. The bisectors of ∠A and ∠B meet at point P. If ∠C = 100° and ∠D = 60°, find the measure of ∠APB.

OR

Find the values of x, y and z in a parallelogram ABCD shown in the figure given below:

48. Solve:

$$\frac{x-6}{4} - \frac{x-4}{6} = 1 - \frac{x}{10}$$

49. Find m so that $(-2)^{m-1} \times (-2)^5 = -128$

OR

Simplify using Laws of Exponents

$$\frac{3^{-5} \times 10^{-5} \times 125}{5^{-7} \times 2^{-5} \times 3^{-5}}$$

50. Using appropriate properties find:

$$-\frac{2}{3} \times \frac{3}{5} + \frac{5}{2} - \frac{3}{5} \times \frac{1}{6}$$

51. A badminton academy charges fees on a per-hour basis for their badminton court. They also issue monthly booking passes costing ₹1500. The pass allows a user to play for 2 hours, 5 times a week. Any extra time is charged on an hourly basis. The graph shows the per hour cost of booking a badminton court.

Badminton Court booking cost per hour
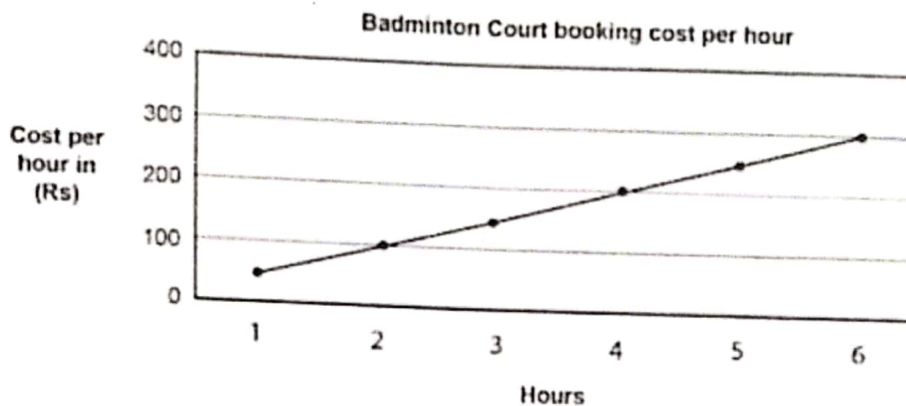
(i) Paul and his friends booked the badminton court for 7 hours. How much did the booking cost?

(1)

(ii) Pulkit plays for 2 hours, 4 times a week. He pays on an hourly basis. Would using a monthly pass be more economical for Pulkit?

(2)

SECTION D

52. A picnic is being planned in a school for Class VIII. Girls are 60% of the total number of students and are 18 in number. The picnic site is 55 km from the school and the transport company is charging at the rate of ₹12 per km. The total cost of refreshments will be ₹4280. Find:

(i) ratio of the number of girls to the number of boys in the class?   (1)

(ii) cost per head if two teachers are also going with the class?   (2)

(iii) If their first stop is at a place 22 km from the school, what per cent of the total distance of 55 km is this?

(1)

OR

Arvind borrows a sum of ₹2,50,000 at 6% p.a. simple interest for 3 years. On the same day, Asif borrows the same sum on the same rate of interest but compounded annually for 3 years. Who pays more interest and by how much?

53. In the parallelogram SAFE given above, angle S =120°, find the value of :
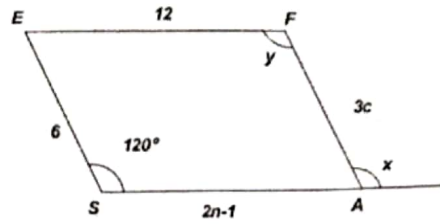
(i) ∠E (2)

(ii) 2n + 3c (2)

(iii) x − y (1)

54. A bus is going on a long journey starting at 4:00 am. The speed of the bus in different hours are given below:

Time in hours	4:00 am	6:00 am	8:00 am	10:00 am	12:00 am	14:00 am
Speed in km/hr	30	50	60	45	80	70

Draw speed – time graph for the above data.

Is the graph linear?