SPECTRA PRACTICE PAPER (2024-25)

SPECTRA CLASSES
CLASS – 7TH
SUBJECT – MATHS

TIME – 3 HR. MM: 80

General Instruction:
1. This question paper consists of 38 questions. All questions are compulsory.
2. This question paper is dived into five Sections - A, B, C, D and E.
3. Section A Question numbers 1 to 18 are multiple choice questions (MCQs) and questions numbers 19 and 20 are Assertion - Reason based questions of 1 mark each.
4. Section B, Question numbers 21 and 25 are very short answer (VSA) type questions. Carrying 2 marks each.
5. Section C,Question numbers 26 and 31 are short answer (SA) type questions. Carrying 3 marks each..
6. Section D,Question numbers 32 and 35 are long answer (LA) type questions. Carrying 5 marks each.
7. Section E,Question numbers 36 and 38 are case-study based integrated question carrying 4 marks each.
9. Draw neat diagrams wherever required. .
10.Use of calculators is NOT allowed.

SECTION - A

1. Find a number that is 100 more than -90.
   (a) -10   (b) 6   (c) 5   (d) 10

2. Write the statements one third of a number plus 5 is 8 in the form of equations :
   (a) $\frac{1}{3}m + 8 = 5$ (b) $\frac{1}{3}m + 5 = 8$ (c) $3m + 5 = 8$ (d) $3m + 8 = 5$

3. If D is the mid-point of the side BC in ΔABC where AB = AC , then ∠ADC is
   (a) 120^0 (b) 60^0 (c) 45^0 (d) 90^0

4. In the figure ABCD is a rectangle. In which AB = 8 cm and BC = 6 cm, at point A,B,C and D a circle is situated, an area of circle (in cm^2) is :
   (a) 25π (b) 5π (c) 15π (d) 10π

5. What annual instalment will discharge a dept of ₹1092 due in 3 years at 12% simple?
   (a) 352   (b) 523   (c) 225   (d) 325

6. The complement of angle 71^0 is ....
   (a) 9^0 (b) 19^0 (c) 10^0 (d) 29^0

7. Which is a solution of the equation 3x-14 = 4?
   (a) X =5   (b) x = 7   (c) x = 8   (d) x = 6

8. The number of trees in different parks of a city are 33, 38, 48, 33, 34, 34, 33 and 24. The mode of this data is
   (a) 34   (b) 33   (c) 24   (d) 48

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9. $\frac{1}{7} \times \frac{1}{5} = \frac{1 \times 1}{7 \times 5} = ?$

   (a) 0   (b) $\frac{1}{14}$ (c) 1   (d) $\frac{1}{35}$

10. Find the area of a triangle whose sides are 15 cm, 9 cm and 2 cm.

   (a) 80 cm^2 (b) 78 cm^2 (c) 48 cm^2 (d) 54 cm^2

11. If x = $\frac{2}{3}$ and y = $\frac{3}{2}$, then find the value of (x+y) ÷ (x-y) .

   (a) $\frac{17}{6}$ (b) $\frac{15}{2}$ (c) $\frac{-13}{5}$ (d) $\frac{-11}{6}$

12. The value of $(-5x^2y) \times (\frac{2}{3}xy^2z) \times (\frac{8}{15}xyz^2) \times (\frac{-1}{4}z)$ is ....

   (a) $\frac{4}{9}x^3y^3z^3$ (b) $\frac{-4}{9}x^4y^4z^4$ (c) $\frac{-4}{9}x^3y^3z^3$ (d) $\frac{4}{9}x^4y^4z^4$

13. How many lines of symmetry are there in an equilateral triangle . Choose the correct option from the options given below ?

   (a) 1   (b) 6   (c) 4   (d) 3

14. The shape of a dice having six faces is a ....

   (a) Triangle   (b) Cylinder   (c) Cube   (d) Cone

15. Evaluate $(1^3 + 2^3 + 3^3 + 4^3)^{-3/2}$

   (a) 10^{-1} (b) 10^{-4} (c) 10^{-2} (d) 10^{-3}

16. Simplify : $\{ 18 + 2\frac{1}{2} + \frac{4}{5} \}$ of $\frac{1}{1000}$

   (a) $\frac{213}{10}$ (b) $\frac{214}{10000}$ (c) $\frac{213}{1000}$ (d) $\frac{213}{10000}$

17. Write down the additive inverse of $\frac{-7}{12}$.

   (a) $\frac{17}{6}$ (b) $\frac{15}{2}$ (c) $\frac{7}{12}$ (d) $\frac{-11}{6}$

18. Simplify : $(2x+\frac{1}{3y})^2 - (2x-\frac{1}{3y})^2$.

   (a) $2(4x^2+\frac{1}{9y^2})^2$ (b) $\frac{8x}{3y}$ (c) $\frac{4x}{3y}$ (d) $\frac{4y}{3x}$

19. Assertion (A) : The ratio of 1:25 is converted into percentage is 4% .

   Reason (R) : A fraction represents a part of a whole or, more generally it represents any number of equal parts.

   (a) Both A and R are true and R is the correct explanation of A.

   (b) Both A and R are true and R is not the correct explanation of A.

   (c) A is true but R is false.

   (d) A is false but R is true.

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20. Assertion (A) : If two numbers have same base and both are multiplying to each other then resulting is same base and their power is added.

Reason (R) : For a number x ; $x^3 \times x^4 = x^{3+4} = x^{7.}$

(a) Both A and R are true and R is the correct explanation of A.
(b) Both A and R are true and R is not the correct explanation of A.
(c) A is true but R is false.
(d) A is false but R is true.

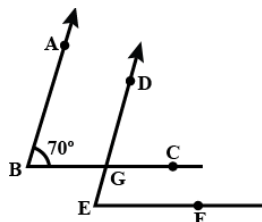## Section -B

This section consists of 5 questions of 2 marks each.

21. Here is a picture of a car wheel.

   What is the order of rotational symmetry for this wheel?

22. Find $(12 \times 20) + (30 \times 12) + 75$ using property .

23. In the given figure, the arms of two angles are parallel. If $\angle ABC = 70^0$, then find $\angle DGC$

24. Fill in the box with the correct symbol out of $>, <,$ and $= \dfrac{-7}{8} \ \square \ \dfrac{14}{-16}$

25. A polyhedron has 25 faces and 12 vertices. How many edges does the polyhedron have?
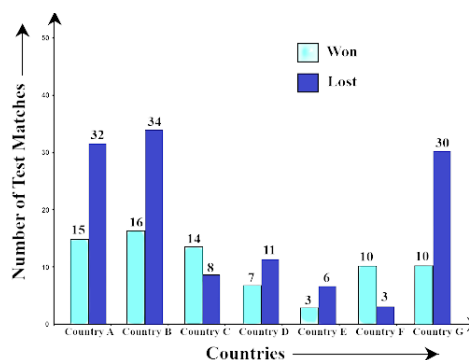
Section - C

This section consists of 6 questions of 3 marks each.

26. A cartoon contains 40 boxes of nails and each box weighs $3\dfrac{3}{4}$ kg. How much would a cartoon of nails weight?

27. The following double bar graph represents test matches results summary for Cricket Team of country X against different countries:

Use the bar graph to answer the following questions:

(a) Which country has managed maximum wins against country X?

(b) The difference between the number of matches won and lost is hightest for which country against country X?

(c) Number of wins of country E is the same as number of losses of which country against country X?

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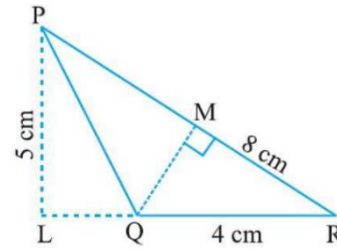**Web:** www.spectraclasses.com, **Email:** info@spectraclasses.com
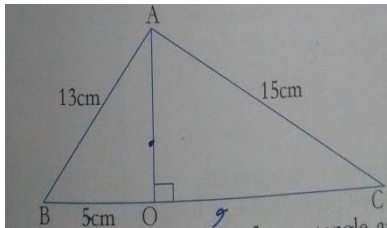
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28 . Solve the following equations : $4 + 5 (p-1) = 34$

29 . Out of 40 students in a class, 32 opted to go for a picnic. What percent of students opted for picnic?

30. In ΔPQR , PR = 8 cm, QR = 4 cm and PL = 5 cm . Find :

(i) The area of the ΔPQR
(ii) QM

31. Find the length of BC in the given figure.

Section - D

This section consists of 4 questions of 5 marks each.

32 . The pieces of tan grams have been rearranged to make the given shape.

By observing the given shape, answer the following questions:
  (a) What percentage of total has been coloured?
    (i) Red (R) = ...
    (ii) Blue (B) = ...
    (iii) Green (G) = ...
  (b) Check that the sum of all the percentages calculated above should be 100.
  (c) If we rearrange the same pieces to form some other shape, will the percentage of colors change?
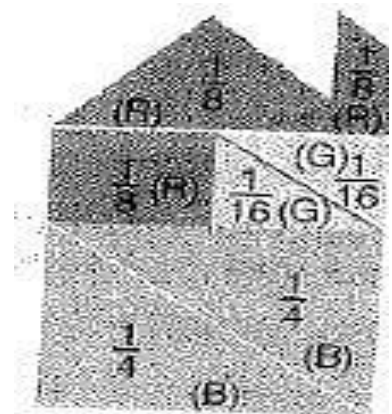
33. In the given figure, PQ, RS, and UT are parallel lines.

(i) If $c = 57^0$ and $a = \frac{c}{3}$, find the value of d.
(ii) If $c = 75^0$ and $a = \frac{2}{5}c$, find b.
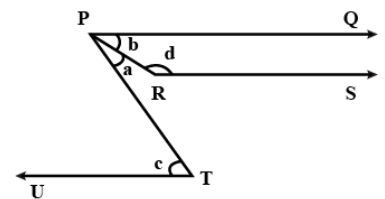
34 . Find the value of (i) $6(p - q - s^2) - 2 (r - s^2)$ if p = -1 , q = 2, r = 3, s = -2.
       (ii) $(a + b)^2 - (a- b)^2$ if a = -2 and b = -5.

35 . (i) Mass of the Uranus is 8.68×10^{25} kg and mass of the Earth is $5. 97 \times 10^{24}$ kg. Find the total mas of both the planets in standard form.
    (iii) Speed of light is 3 lakh km/s. Convert it in standard form.

This section consists of 3 Case - Study Based Questions of 4 marks each.

36. Read the text carefully and answer the questions :

Car A covers a distance of 89.1 km in 2.2 hours and Car B covers a distance of 114.3 km in 1.8 hours.

(a) The average distance covered by Car A in 1 hour is ..... km.

(b) What is the average distance covered by Car B in 1 hour?
   (i) 65. 3 km   (ii) 63.5km   (c) 56.3 km   (d) 65 km

(c) What is time taken by Car A to cover 500 km?
   (i) 12 hrs   (b) 12.35 hrs   (c) 13.25 hrs   (d) 15 hrs

(d) What is time taken by Car B to cover 500 km?
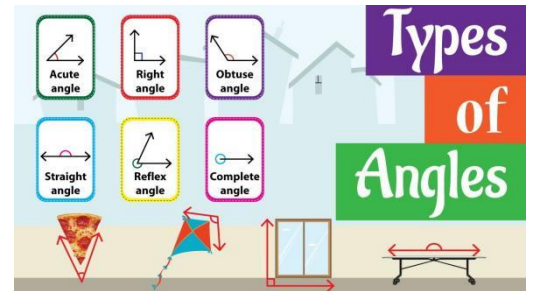   (ii) 17.8 hrs   (b) 7.87 hrs   (c) 9.2 hrs   (d) 8 hrs

37. Read the text carefully and answer the questions :

Maths teacher take her students to Maths lab and ask to note the items in a lab which are triangular in shape. Students not down the following items. Then they distinguish in to acute angle triangle, obtuse angle triangle and right-angle triangle. Teacher then asks some questions based on altitudes if triangle.
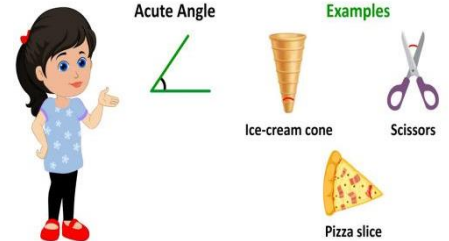
(a) The ...... of a triangle is the perpendicular drawn from the vertex of the triangle to the opposite side.

(b) An altitude for an acute angle triangle lies,
   (a) On the Lines (b) Exterior of triangle   (c) Inside the triangle   (d) On the sides

(c) An altitude for right angle triangle is,
   (a) Inside the triangle   (b) On the sides   (c) All of these (d) The exterior of the triangle

(d) An altitude for an obtuse angle triangle is,
   (i)Altitude cannot be draw for obtuse angle triangle
   (ii)On the sides
   (iii)Exterior of the triangle
   (iv)Inside the triangle

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38. Read the text carefully and answer the questions :

Once a farmer dug a circular flower bed in his field . Now he has to purchase fertilizers for this bed. But the question raised that how much fertilizer to be purchased.

For this he took help from his son Varun. Varun measured the radius of the bed it was found to be 7m. He used formula to calculate the area of the flower bed.

Later Varun found from his father that 1 kg of fertilizer is required for 1 m² area, Also the cost 1 kg fertilizer was ₹ 50.

(a) What is the area of the flower bed?
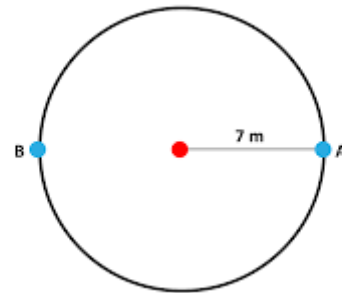(i) 154 m²   (ii) 22 m²   (c) 77 cm²   (d) 44 cm²

(b) How much fertilizers did the farmer bought ?
(i) 77 kgs   (ii) 77kg   (c) 154 kgs
      (d) 44 kgs

(c) what was cost of the fertilizers ?
(i) ₹770   (b) ₹154   (c) ₹ 1540   (d) ₹ 7700

(d) If the radius of flower bed were 14 cm then its area would be ……m².

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