SPECTRA FINAL EXAM. PREPARATORY TEST

SPECTRA CLASSES
CLASS – 7ᵀᴴ
SUBJECT – MATHS

TIME – 3 HR.   **MM: 80**

General Instruction:
1. This question paper consists of 38 questions in 5 sections.
2. All questions are compulsory. However, an internal choice is provided in some questions. A student is expected to attempt only one of these questions.
3. Section A consists of 20 objective type questions carrying 1 mark each.
4. Section B consists of 6 Very Short questions carrying 02 marks each. Answers to these questions should in the range of 30 to 50 words.
5. Section C consists of 7 Short Answer type questions carrying 03 marks each. Answers to these questions should in the range of 50 to 80 words.
6. Section D consists of 3 Long Answer type questions carrying 05 marks each. Answer to these questions should be in the range of 80 to 120 words.
7. Section E consists of 3 source based/case-based units o assessment of 04 marks each with sub-parts.

Section – A

1. Which of the following is true?
(a) $(-8) + (-4) > (-8) - (-4)$
(b) $(-8) + (-4) < (-8) - (-4)$
(c) $(-8) + (-4) = (-8) - (-4)$
(d) none of these

2. $3\frac{3}{4} \div \frac{3}{4}$ is equal to:
(a) 3   (b) 4   (c) 5   (d) $\frac{45}{16}$

3. $\frac{4}{5}$ of 5 kg apples were used on Monday. The next day $\frac{1}{3}$ of s was left was left was used. Weight (in kg) of apples left now is
(a) $\frac{2}{7}$ (b) $\frac{1}{14}$ (c) $\frac{2}{3}$ (d) $\frac{4}{21}$

4. The difference between the highest and the lowest observations in a data is its
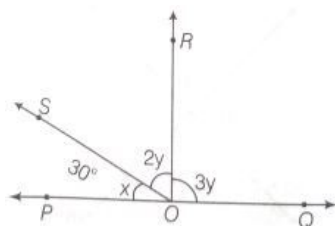(a) frequency   (b) width   (c) range   (d) mode

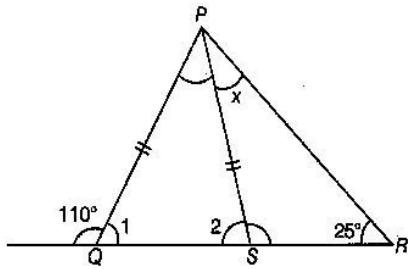5. If $k+7 = 16$, then the value of $8k-72$ is
(a) 0   (b) 1   (c) 112   (d) 56

6. In the given figure, POQ is a line. If x=30∘then∠QOR is

(a) 90∘
(b) 30∘
(c) 150∘
(d) 60∘

7. In the given figure, PQ = PS. The value of x is
(a) 35°   (b) 45°   (c) 55°   (d) 70°

8. On selling an article for Rs 329, a dealer lost 6%. The cost price of the article is
(a) Rs 310.37   (b) Rs 348.74   (c) Rs 335   (d) Rs 335

9. Which of the following rational numbers is in standard form?
(a) $\frac{20}{30}$ (b) $\frac{10}{4}$ (c) $\frac{1}{2}$ (d) $\frac{1}{-3}$

10. Find the product of:
(i) $\frac{-4}{5}$ and $\frac{-5}{12}$ (ii) $\frac{-22}{11}$ and $\frac{-21}{11}$

11. Area of a right-angled triangle is 30 cm^2. If its smallest side is 5cm, then its hypotenuse is
(a) 3.14cm   (b) 31.4cm   (c) 15.7cm   (d) 1.57cm

12. The coefficient of xy in $3x^2zy + 7xyz - 2z^2x$ is
(a) $x \times y \times y$ (b) $-1 \times y \times y$ (c) $-1 \times x \times y$ (d) $-1 \times x \times y \times y$

13. $123x^2y - 138x^2y$ is a like term of:
(a) $10xy$ (b) $-15xy$ (c) $-15xy^2$ (d) $10x^2y$

14. Which of the following is not equal to 1?
(a) $\frac{2^3 \times 3^2}{4 \times 18}$ (b) $\frac{3^0 \times 5^3}{5 \times 25}$ (c) $\frac{2^4}{(7^0 \times 3^0)^3}$ (d) $[(-2)^3 \times (-2)^4] \div (-2)^7$

15. Which of the following is equal to 1?
(a) $2^0 + 3^0 + 4^0$ (b) $2^0 x 3^0 x 4^0$
(d) $(3^0 - 2^0) \times 4^0$ (d) $(3^0 - 2^0) \times (3^0 + 2^0)$

16. Which of these nets is a net of a cube?
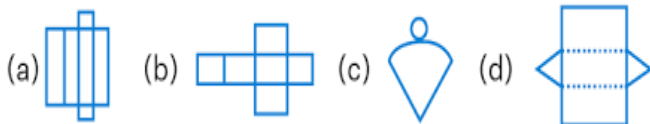
a) Both A and R are true and R is the correct explanation of A
b) Both A and R are true but R is not the correct explanation of A
c) A is true but R is false
d) A is false but R is true

17. **Assertion (A)** –The S.I. of Rs 100 of 1 year at the rate of 3 paise per rupee per month is Rs 24.
Reasons (R) –Simple interest is a quick and easy method of calculating the interest charge on a loan.

18. **Assertion:** A triangle can have two obtuse angles.
Reason: Sum of the three angles in a triangle is always 180^0

19. **Assertion:** if x = 2, y = 1 is a solution of the equation 2x + 3y = k, then the value of k is 7.
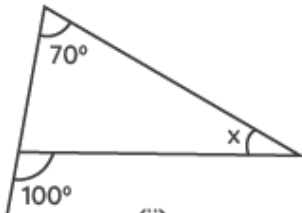**Reason:** the solution of the line will satisfy the equation of the line.

20. **Assertion:** this figure have no line of symmetry.
Reason: The line of symmetry is a line that divides an
object into two identical pieces.

SECTION - B
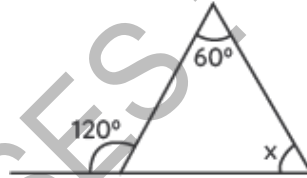
21. Find the value of the unknown interior angle x in the following figures:

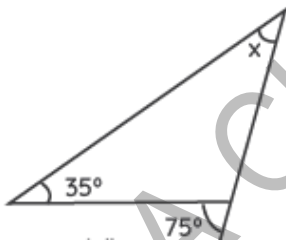(i)   (ii)

(iii)

22. Meeta saves Rs. 4000 from her salary. If this is 10% of her salary. What is her salary?

23. Find the area of a circle of radius 30 cm (use $\pi = 3.14$).
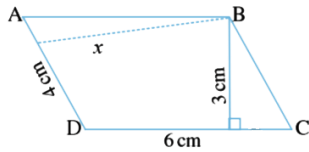
24. Simplify and express each of the following in exponential form:

$$\frac{3 \times 7^2 \times 11^8}{21 \times 11^3}$$

SECTION – C

25. Simplify these expressions and find their values if x = 3, a = −1, b = −2.
   $2a - 2b - 4 - 5 + a$

26. The two sides of the parallelogram ABCD are 6 cm and 4 cm. The height corresponding to the base CD is 3 cm. Find the (i) area of the parallelogram (ii) the height corresponding to the base AD.

27. Simplify: (i) $\dfrac{12^4 \times 9^3 \times 4}{6^3 \times 8^2 \times 27}$ **OR** $\dfrac{2 \times 3^4 \times 2^5}{9 \times 4^2}$

28. Write the following rational numbers in ascending order: $\dfrac{-3}{5}, \dfrac{-2}{5}, \dfrac{-1}{5}$

29. The lengths of two sides of a triangle are 12 cm and 15 cm. Between what two measures should the lengths of the third side fall?

30. Solve: In an isosceles triangle, the base angles are equal. The vertex angle is 40°. What are the base angles of the triangle? (Remember, the sum of three angles of a triangle is 180°).
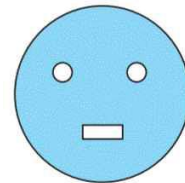
31. In ΔPQR, PR = 8 cm, QR = 4 cm and PL = 5 cm. Find

    (i) the rea of the ΔPQR (ii) QM
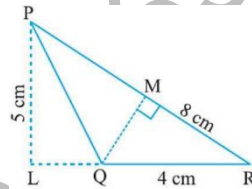
SECTION – D

32. From a circular card sheet of radius 14 cm, two circles of radius 3.5 cm and a rectangle of length 3 cm and breadth 1 cm are removed. Find the area of the remaining sheet. (Take $\pi = \dfrac{22}{7}$)

OR

Shazli took a wire of length 44 cm and bent it into the shape of a circle. Find the radius of that circle. Also find its area. If the same wire is bent into the shape of a square, what will be the length of each of its sides? Which figure encloses more area, the circle or the square? (Take $\pi = \dfrac{22}{7}$)

33. (i) Chalk contains calciu, carbon and oxygen in the ration 10:3:12. Find the percentage of carbon in chalk.
    (ii) If in a stick of chalk, carbon is 3g, what is the weight of the chalk stick?

34. Identify like terms in the following:
    (i) $-xy^2, -4yx^2, 8x^2, 2xy^2, 7y, 11x^2$, -100x, -11yx, $20x^2y, -6x^2$, y, 2xy, 3x
    (ii) 10pq, 7p, 8q, $-p^2 q^2$, -7qp, -100q, -23, 12 q^2p^2, $5p^2$, 41, 2405p, 78qp, 13 p^2q, qp^2, $701p^2$

35. Draw the number line and represent the following rational numbers on its:
    (i) $\dfrac{3}{4}$ (ii) $\dfrac{-5}{8}$ (iii) $\dfrac{-7}{4}$ (iv) $\dfrac{7}{8}$

SECTION – E

36. Write the following statements in the form of equations:
    i   The sum of the three times x and 11 is 32.
    ii If you subtract 5 from 6 times a number, you get 7.
    iii One fourth of m is 3 more than 7.
    iv One third of a number plus 5 is 8.

37. Following table shows the point of each player scored in four games:

Player	Game 1	Game 2	Game 3	Game 4
A	14	16	10	10
B	0	8	6	4
C	8	11	Did not play	13

   Now answer the following questions:
    i   Find the mean to determine A's average number of points scored per game.
    ii   To find the mean number of points per game for C, would you divide the total points by 3 or by 4 ? Why?
    iii B played in all the four games. How would you find the mean?
    iv   Who is the best performer?

38. In the adjoining figure, identify
    i   The pairs of corresponding angles.
    ii   The pairs of alternate interior angles.
    iii The pairs of interior angles on the same
    Side of the transversal.
    iv   the vertically opposite angles.

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