



FULL SYLLABUS TEST - 01

1. This question paper has 5 sections A – E.
2. Section A has 20 MCQs carrying 1 marks each.
3. Section B has 5 questions carrying 02 marks each.
4. Section C has 6 questions carrying 03 marks each.
5. Section D has 4 questions carrying 05 marks each.
6. Section E has 3 case based question 04 marks each.
7. All questions are compulsory.
8. Draw neat figures wherever required. Take $\pi = 22/7$ wherever required if not stated.

- The point which lies on y-axis at a distance of 3 units in the negative direction of y-axis is
A.) (0,3) **C.) (-3,0)**
B.) (0,-3) **D.) (3,0)**
- The base of a right triangle is 8 cm and hypotenuse is 10 cm. Its area will be
A.) 48 cm^2 **C.) 80 cm^2**
B.) 40 cm^2 **D.) 24 cm^2**
- If the length of a chord of a circle is 16 cm and is at a distance of 15 cm from the centre of the circle, then the radius of the circle is
A.) 34 cm **C.) 15 cm**
B.) 17 cm **D.) 16 cm**
- If $\sqrt{2} = 1.41$ then $\frac{1}{\sqrt{2}} = ?$
A.) 34 cm **C.) 15 cm**
B.) 17 cm **D.) 16 cm**



5. In $\triangle ABC$ and $\triangle DEF$ it is given that $AB = DE$ and $BC = EF$ in order that $\triangle ABC \cong \triangle DEF$, we must have

A) $\angle C = \angle F$

C.) $\angle A = \angle D$

B) $\angle B = \angle E$

D.) None of these

6. Which of the following is not a solution of $2x - 3y = 12$?

A) (0,-4)

C.) (2,3)

B) (6,0)

D.) (3,-2)

7. If $p(x) = x^3 - x^2 + x + 1$, then the value of $\frac{p(-1) + p(1)}{2}$ is

A) 2

C.) 3

B) 0

D.) 1

8. $(125)^{1/3} = ?$

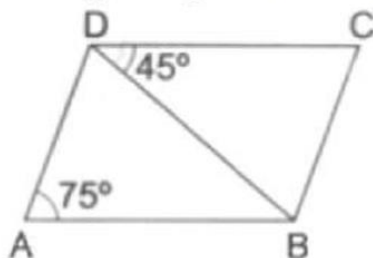
A) $-\frac{1}{5}$

C.) -5

B) $\frac{1}{5}$

D.) 5

9. In the given figure, ABCD is a parallelogram in which $\angle BDC = 45^\circ$ and $\angle BAD = 75^\circ$. Then, $\angle CBD = ?$



a) 60°

b) 45°

c) 75°

d) 55°

10. The value of $64^{-\frac{1}{3}} \left(64^{\frac{1}{3}} - 64^{\frac{2}{3}} \right)$, is

a) -2

b) 1

c) -3

d) $\frac{1}{3}$

P.T.O



11. If $x = \frac{\sqrt{5}+\sqrt{3}}{\sqrt{5}-\sqrt{3}}$ and $y = \frac{\sqrt{5}-\sqrt{3}}{\sqrt{5}+\sqrt{3}}$, then $x + y + xy =$

a) 5

b) 9

c) 17

d) 7

12. If $(x, y) = (y, x)$, then

a) $x - y = 0$

b) $x + y = 0$

c) $x \div y = 0$

d) $xy = 0$

13. The measure of an angle is five times its complement. The angle measures

a) 75°

b) 65°

c) 25°

d) 35°

14. Choose the rational number which does not lie between $-\frac{2}{3}$ and $-\frac{1}{5}$

a) $-\frac{7}{20}$

b) $-\frac{3}{10}$

c) $-\frac{1}{4}$

d) $\frac{3}{10}$

15. The value of $(x - \frac{1}{x})(x + \frac{1}{x})(x^2 + \frac{1}{x^2})$ is

a) $x^4 + \frac{1}{x^4}$

b) $x^3 - \frac{1}{x^3} + 2$

c) $x^2 + \frac{1}{x^2} - 2$

d) $x^4 - \frac{1}{x^4}$

16. A(-6, 3) be a point on the graph. Draw $AL \perp x - axis$. The co-ordinates of L are

a) (-6, 3)

b) (0, 0)

c) (-6, 0)

d) (0, -6)

17. How many linear equations can be satisfied by $x = 2$ and $y = 3$?

a) only one

b) none of these

c) many

d) two

P.T.O



18. If $x + 2$ and $x - 1$ are the factors of $x^3 + 10x^2 + mx + n$, then the values of m and n are respectively.

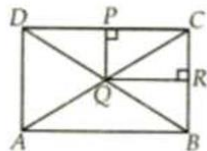
a) 5 and - 3

b) 17 and - 8

c) 23 and -19

d) 7 and - 18

19. **Assertion (A):** ABCD and PQRC are rectangles and Q is a midpoint of AC. Then $DP = PC$.



Reason (R): The line segment joining the midpoint of any two sides of a triangle is parallel to the third side and equal to half of it.

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.

20. **Assertion (A):** If $\sqrt{2} = 1.414$, $\sqrt{3} = 1.732$, then $\sqrt{5} = \sqrt{2} + \sqrt{3}$.

Reason (R): Square root of a positive real number always exists.

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.

Section B

21. Find the area of isosceles triangle, whose equal sides are of length 15 cm each and third side is 12 cm.

22. Factorise : $9x^2 + 4y^2 + 16z^2 + 12xy - 16yz - 24xz$

23. Name the quadrant in which the following points lie:

(a) (2,3) (b) (-3,4) (c) (-3,-10)

24. Rationalise the denominator of: $\frac{3-2\sqrt{2}}{3+2\sqrt{2}}$.

OR

Simplify the following by rationalizing the denominator : $\frac{30}{5\sqrt{3}-3\sqrt{5}}$

P.T.O



25. By Remainder Theorem find the remainder, when $p(x)$ is divided by $g(x)$, where $p(x) = x^3 - 6x^2 + 2x - 4$, $g(x) = 1 - \frac{3}{2}x$

OR

Factorise: $\sqrt{2}x^2 + 9x + 4\sqrt{2}$.

Section C

26. Simplify the following by rationalizing the denominator: $\frac{4+\sqrt{5}}{4-\sqrt{5}} + \frac{4-\sqrt{5}}{4+\sqrt{5}}$
27. Verify: $x^3 + y^3 = (x + y)(x^2 - xy + y^2)$
28. The sides of a triangle are in the ratio of 13 : 14 : 15 and its perimeter is 84 cm. Find the area of the triangle.
- OR
- From a point in the interior of an equilateral triangle, perpendiculars are drawn on the three sides. The lengths of the perpendiculars are 14 cm, 10 cm and 6 cm. Find the area of the triangle.
29. Find four solutions for the following equation: $12x + 5y = 0$
30. Factorise: $(2x - 3y)^3 + (3y - 4z)^3 + (4z - 2x)^3$
31. Write linear equation $3x + 2y = 18$ in the form of $ax + by + c = 0$. Also write the values of a , b and c . Are $(4, 3)$ and $(1, 2)$ solution of this equation?

Section D

32. If x is a positive real number and exponents are rational numbers, simplify $\left(\frac{x^b}{x^c}\right)^{b+c-a} \cdot \left(\frac{x^c}{x^a}\right)^{c+a-b} \cdot \left(\frac{x^a}{x^b}\right)^{a+b-c}$.
- OR
- Represent each of the numbers $\sqrt{2}$, $\sqrt{3}$ and $\sqrt{5}$ on the real line.
33. If two parallel lines are intersected by a transversal, then prove that the bisectors of the interior angles form a rectangle.
- OR
- Prove that if the arms of an angle are respectively perpendicular to the arms of another angle, then the angles are either equal or supplementary.
34. The base of a triangular field is three times its altitude. If the cost of sowing the field at Rs.58 per hectare is Rs.783, find its base and height. [5]
- OR
- Find the area of a triangular field whose sides are 91 m, 98 m and 105 m in length. Find the height corresponding to the longest side.



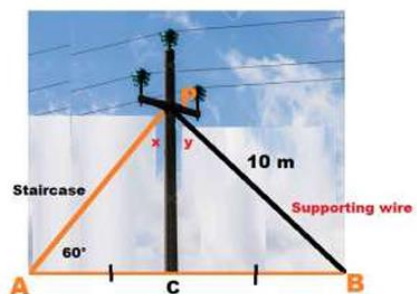
35. Factorize: $x^3 - 2x^2 - x + 2$

Section E

36. Read the text carefully and answer the questions :

As shown, In the village of Surya there was a big Pole PC. This pole was tied with a strong wire of length 10m. Once there was a big spark on this pole, thus wire got damaged very badly. Any small fault was usually repaired with the help of a rope which normal board electricians were carrying on bicycles.

This time electricians need a staircase of 10m so that it can reach at point P on the pole and this should make 60° with line AC.



- (i) Show that $\triangle APC$ and $\triangle BPC$ are congruent.
- (ii) Find the value of $\angle x$.

OR

Find the value of $\angle y$.

- (iii) What is the value of $\angle PBC$?

37. Read the text carefully and answer the questions:

Harish makes a poster in the shape of a parallelogram on the topic SAVE ELECTRICITY for an inter-school competition as shown in the follow figure.





- (i) If $\angle A = (4x + 3)^\circ$ and $\angle D = (5x - 3)^\circ$, then find the measure of $\angle B$.
- (ii) If $\angle B = (2y)^\circ$ and $\angle D = (3y - 6)^\circ$, then find the value of y .

OR

If $AB = (2y - 3)$ and $CD = 5$ cm then what is the value of y ?

- (iii) If $\angle A = (2x - 3)^\circ$ and $\angle C = (4y + 2)^\circ$, then find how x and y relate.

38. Read the text carefully and answer the questions:

Reeta was studying in the class 9th C of St. Surya Public school, Mehrauli, New Delhi-110030

Once Ranjeet and his daughter Reeta were returning after attending teachers' parent meeting at Reeta's school.

As the home of Ranjeet was close to the school so they were coming by walking.

Reeta asked her father, "Daddy how old are you?"

Ranjeet said, "Sum of ages of both of us is 55 years, After 10 years my age will be double of you."



- (i) What is the second equation formed?
- (ii) What is the present age of Reeta in years?
- (iii) What is the present age of Ranjeet in years?

OR

If the ratio of age of Reeta and her mother is $3 : 7$ then what is the age of Reeta's mother in years?

-----**ALL THE BEST**-----