



Practice Sheet -03

Syllabus : Unit 1-Number System Chapter 1

Unit -II -Algebra Chapter 2,3,4,5

Unit -III Coordinate Geometry Chapter 7

SUBJECT: MATHEMATICS Standard

Code : 041

MAX. MARKS : 40

DURATION : 90 mins

1. This Question Paper has 5 Sections A-E.
2. **Section A** has 8 MCQs carrying 1 mark each.
3. **Section B** has 3 questions carrying 02 marks each.
4. **Section C** has 4 questions carrying 03 marks each.
5. **Section D** has 1 questions carrying 04 marks each.
6. **Section E** has 2 questions carrying 05 marks each .

Draw neat figures wherever required. Take $\pi = 22/7$ wherever required if not stated

SECTION – A

Questions 1 to 8 carry 1 mark each.

1. If n is a natural number , then 12^n ends with an even digit except
 (a) 0 (b) 4 (c) 6 (d) 8
2. If 18, a , b , -3 are in A.P then $a + b$
 (a) 19 (b) 7 (c) 11 (d) 15
3. Find HCF of the numbers given below Kx^2 , $2Kx$, $4(xK)^2$ and K^2x
 (a) xK^3 (b) $(Kx)^2$ (c) Kx (d) K^2x
4. The zeroes of the polynomial $x^2 + Kx + K$, $K \neq 0$
 (a) are always positive (b) are always negative
 (c) both cannot be negative (d) both cannot be positive .
5. The distance between the points $(a \cos A, -b \sin A)$ and $(a \sin A, b \cos A)$
 (a) $a^2 + b^2$ (b) $a + b$ (c) $a^2 - b^2$ (d) $\sqrt{a^2 + b^2}$
6. The value of k for which the zeroes of polynomial $Kx^2 + 3x + 5$ are reciprocal of each other .
 (a) 2 (b) 3 (c) 4 (d) 5
7. For what value of P will the following system of equations has no solution :
 $(2p - 1)x + (p - 1)y = 2p + 1$ and $3x + y - 1 = 0$.
 (a) 0 (b) 1 (c) 2 (d) 3
8. Assertion (A): Polynomial $x^2 + 4x$ has two real zeroes.
 Reason (R): Zeroes of the polynomial $x^2 + ax$ ($a \neq 0$) are 0 and $-a$.

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

SECTION – B
Questions 9 to 11 carry 2 mark each.

9. Find the least number which when increased by 4 is completely divisible by 10 , 15 , 20 & 25 .

Or

Find the greatest number that will divide 445 , 572 and 699 leaving remainders 4 , 5 and 6 respectively .

10. Prove that the reciprocal $\sqrt{3} + 2\sqrt{4}$ is an irrational number , given that $\sqrt{3}$ is an irrational number .
 11. Split 207 into three parts such that these are in A.P. and the product of two smaller parts is 4623. Find the parts.

SECTION – C
Questions 12 to 15 carry 3 mark each.

12. A train covered a certain distance at a uniform speed .If the train had been 6 km /hr , faster , it would taken 4 hours less than the scheduled time and if the train had been slower by 6km/hr., it would have taken 6 hours more than the scheduled time .Find the length of the journey .

13. If the point P(x, y) is equidistant from the points A(a +b, b – a) and B(a – b , a + b) ,Prove *that* $bx = ay$
 Or

If the point C (-1, 2) divides internally the line segment joining the points A(2, 5) and B(x, y) in the ratio of 3 : 4, find the value of $x^2 + y^2$

14. The sum of first three terms of an AP is 48. If the product of first and second terms exceeds 4 times the third term by 12. find the AP.

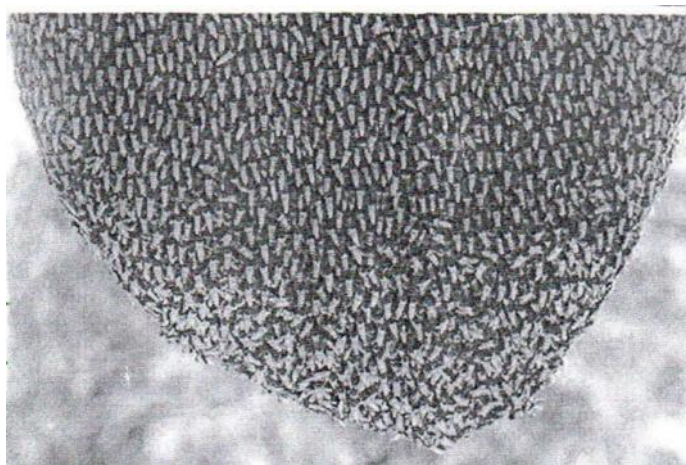
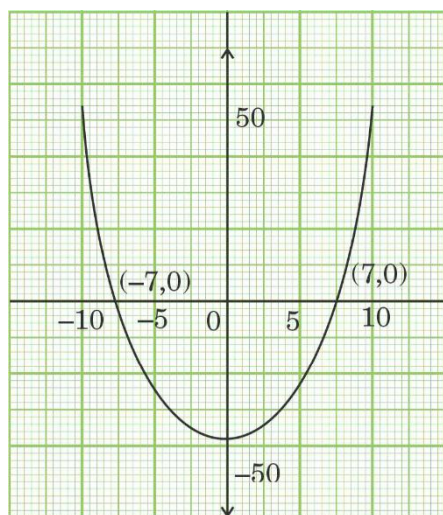
Or

Divide 56 into four parts in A.P. such that the ratio of the product of their extremes to the product of means 5 : 6 .Find the numbers.

15. If A(-2, 1), B(a, 0), C(4, b) and D(1, 2) are the vertices of a parallelogram ABCD, find the values of a and b. Hence, find the lengths of its sides.

SECTION – D
Questions 16 carry 4 mark each.

16. While playing in a garden, Samaira saw a honeycomb and asked her mother what is that. Her mother replied that it's a honeycomb made by honey bees to store honey. Also, she told her that the shape of the honeycomb formed is a mathematical structure. The mathematical representation of the honeycomb is shown in the graph.



Based on the above information, answer the following questions:

- (i) How many zeroes are there for the polynomial represented by the graph given?
- (ii) Write the zeroes of the polynomial.
- (iii) If the zeroes of a polynomial $x^2 + (a + 1)x + b$ are 2 and -3, then determine the values of a and b .

OR

If the square of the difference of the zeroes of the polynomial $x^2 + px + 45$ is 144, then find the value of p .

SECTION – E
Questions 17 to 18 carry 5 mark each.

17. Let α and β are the zeroes of the polynomial $f(x) = 3x^2 + 2x + 1$. Find a quadratic polynomial whose zeroes are $\frac{1-\alpha}{1+\alpha}$ and $\frac{1-\beta}{1+\beta}$.
18. In a rectangular park of dimensions 50m X 40 m , a rectangular pond is constructed so that the area of grass strip of uniform width surrounding the pond would be 1184m^2 . Find the length and breadth of the pond .

Or

A passenger while boarding the plane slipped from the stairs and got hurt. the pilot took the passengers in the emergency clinic at the airport for the treatment due to this, plane got delayed half an hour. To reach the destination 1500km away in time, so that the passengers could catch the connection flight, the speed of the plane was increased by 250km/hr than the usual speed. What is the usual speed of the plane.

End

To get more sample papers , practice papers ,study material for Maths (only for CBSE IX-X) join my whatsapp group at link shared below

<https://chat.whatsapp.com/lCdBeP9GN0d4hOdZxC6C5W>