Dr.K.K.R GOWTHAM (E.M) HIGH SCHOOL :: GUDIVADA

Class : X – State *PRE - FINAL* **Marks : 50**

Sub : Mathematics **PAPER – I** **Time: 2 ½ hrs**

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Instructions:

1. There are four sections and 33 questions in the paper.
2. Answers should be written in a given answer booklet.
3. There is internal choice in Section-IV.
4. Write all the questions visible & legibly.
5. 15 minutes are given for reading the question paper and 2.30 hours given for answering questions.

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SECTION – A (12× ½ = 6M)

Note: 1. Answer all the question's

2. Each Question carries ½ Mark.

1. Write the rational form of 0.375.
2. Find the discriminant of x^2-5x+6.
3. A is the set of factors of 12. Which one of the following is not a member of A

   A) 1 B) 4 C) 5 D) 12
4. Find the HCF of 12, 15.
5. Write the formula for volume of sphere.
6. The equation $x-4y=5$ has

   A) No solution B) Unique solution C) Two solutions D) Infinitely many solutions
7. Define coincident lines.
8. Find the sum of zeroes of $x^2+7x+10$
9. Find the common difference of series 1, 2, 3, 4, 5…..
10. Find the volume of a sphere of radius 7 cm.
11. If $A=\{1,2,3,4\}$ then find $n(A)$
12. Find the product of the roots of ax^2+bx+c

SECTION – B (8× 1 = 8 M)

Note: 1. Answer all the Questions

2. Each Question carries 1 Mark

13. Consider the sets $A=\{p,q,r,s\}$ and $B=\{1,2,3,4\}$. Are they equal.
14. Write the nature of the roots of the equation $x^2-8x+16=0$
15. Write the condition for the pair of linear equations is two variables to be parallel lines.
16. If the surface area of a hemisphere is 's' then express 'r' interms of 's'.
17. The n^{th} term of an AP is 6n+2. Find the common difference.
18. What is the value of $\log_{3/2}^{27/8}$

19. In a GP $t_n = (-1)^n 2019$. Find the common ratio.

20. The curved surface area of a sphere is 616 cm^2. Find its diameter.

SECTION – C (8× 2 = 16 M)

Note: 1. Answer all the Questions

2. Each Question carries 2 Mark.

21. Prove that $2+\sqrt{3}$ is irrational.

22. Find the quadratic polynomial, for the zeroes of α=2. β=-1

23. Find the volume of hemisphere, when radius 3cm.

24. Determine the AP whose 3rd term is 5 and the 7th term is 9.

25. Solve $3x-5y=-1, x-y=-1$ in the substitution method.

26. A sphere, a cylinder and a cone have the same radius. Find the ratio of their curved surface areas.

27. The larger of two supplementary angles exceeds the smaller by 18^0. Find the angles.

28. Illustrate $A \cap B$ in Venn –diagrams where $A=\{1,2,3\}$ and $B=\{3,4,5\}$

SECTION – D (5× 4 = 20 M)

Note: 1. Answer all the Questions

2. Each Question has internal choice.

3. Each Question carries 4 Marks.

29. a) A sphere, a cylinder and a cone are of the same radius and same height. Find the ratio of their curved surface areas?

(or)

b) If the sum of the first 14 terms of an AP is 1050 and its first term is 10, find the 20th term.

30. a) A motor boat heads upstream a distance of 24 km on a river whose current is running at 3 km per hour. The trip up and back takes 6 hours. Assuming that the motor boat maintained a constant speed, what was it speed.

(or)

b) How many spherical balls can be made out of a solid cube of lead whose edge measures 44 cm and each ball being 4 cm. in diameter.

31. a) Write the decimal expansion of the following rational numbers without actual division.

i) $\frac{35}{50}$ ii) $\frac{21}{25}$ iii) $\frac{7}{8}$

(or)

b) Find a quadratic polynomial if the zeroes of it are 2 and $\frac{-1}{3}$ respectively.

32. a) State whether each of the following statement is true or false. Justify you answers.

i) $\{2,3,4,5\}$ and $\{3,6\}$ are disjoint sets.

ii) $\{a,e,i,o,u\}$ and $\{a,b,c,d\}$ are disjoint sets.

iii) $\{2,6,10,14\}$ and $\{3,7,11,15\}$ are disjoint sets.

iv) $\{2,6,10\}$ and $\{3,7,11\}$ are disjoint sets.

(or)

b) Find the dimensions of a rectangle whose perimeter is 28 meters and whose area is 40 square meters.

33. a) Solve the quadratic polynomial x^2-3x-4 graphically.

(or)

b) Solve $3x+4y=2$ and $6x+8y=4$ verify by a graphical representation.