MATHEMATICS: PAPER - 1

Time: 2.45 Hrs. **Marks: 40**

PARTS - A & B

Instructions:

1. **Read All questions**
2. **Part A answer should be written in Separate Answer Book.**
3. **There are three sections in Part A.**
4. **Answer all quesions.**
5. **Every Answer Should be written Vesibility and neatly.**
6. **There is internal choice in section - III.**

PART - A

Time: 2.15 Hrs. **Marks: 30**

SECTION - 1

Note: 1. Answer all questions **4 x 1 = 4M**

2. Each quetions carries 1 Mark.

1. Cheek Whether -3 and 3 are the Zeroes of the polynomial x^2-2x-15.
2. Express the set $A=\left\{1,\frac{1}{2},\frac{1}{3},\frac{1}{4},\frac{1}{5}\right\}$ in set - builder form.
3. If two supplementary angles are in the ration 1:3 then find the angles.
4. Manasa wants to make a joker cap of radius 7cm and of heights 24cm for her younger brother. Find the area of colour sheet to make the cap.

SECITON - II

5 x 2 = 10M

Note: 1. Answer all questions.

2. Each quesion Carries 2 marks.

5. Solve $2^{x+1} = 3^{1-x}$
6. If the roots of the quadratic equation $Kx(x-2)+6=0$ are equal then find the value of K.
7. A 20m deep will with diameter 14m is dug and the earth from digging is spread evenly to form a platform of 22m x 14m. Find the height of the platform.
8. Distinguish the terms Zero polynomial and Zero of a polynomia.
9. Check whether the pair of equation x+y=8 and 3x+3y=14 is consistent or in consistent verify.

SECITON - III

4x4=16M

Note: 1. Answer all questions:

2. Choose any one from each quesion. Each quesion carries 4 Marks.

10.A. Solve the following system of equations using the method of climination $x+y=a+b$, $ax-by=a^2-b^2$.

(OR)

B. How many spherical bullets can be made out of a solid cube of lead whose edge measures 44cm, each bullet being 4cm in diameter.

11.A. If the sum of first 7 terms of an AP is 49 and that of 17 terms is 289, find the sum first n terms.

(OR)

B. The speed of a boat in still water is 15km/hr. It can go 30km upstream and return downstream to the original point in 4 hours 30 mints. Find the speed ofthe stream.

12.A. Use Euclid's division lemma to show that the cube of any positive in teger is of the from 9m, 9m+1 or 9m+8.

(OR)

B. For any tow sets A,B verrify by an example that $A-B$, $A\cap B$, $B-A$ are mutually disjoint.

13.A. Solve the system of euqtions $x-2y=0$, $3x+4y=20$.

(OR)

B. Draw the graph of $(px)=x^2-6x+9$ polynomial and find the Zeroes. Jusitfy your answer.

PARTS - B

Time: 30 Min **Marks:10**

Note:

1. **Answer all the question in Part-B**
2. **Each question has 4 options. Write the capital letter in indicating the answer in the given brackets.**
3. **Marks are not awarded for over writing answer.**
4. **All questions carry equal marks.**

SECTION - IV

Note: 1. Answer all the questions. **20 x 1/2 = 20**
2. Each Question carries 1/2 Mark.

14. The HCF of two coprime numbers is ( )
(a) 0 (b) 1 (c)2 (d) Not defined.

15. A={Prime numbers}, B=(Even Numbers} then $A \cap B$ ( )
(a) ϕ (b) {1} (c)){2} (d) {0,2}

16. $\log \sqrt[x]{x} =$ ( )
a)1/2 (b) -1/2 (c) -2 (d) 2

17. The Discriminat of $2x^2+x-4=0$ is ( )
(a) 33 (b) -31 (c) -33 (d) 31

18. The roots of the quadratic equation $4x^2-9=0$ are... ( )
(a) $\pm\frac{9}{4}$ (b) $\pm\frac{3}{2}$ (c) ± 3 (d) ± 4

19. The common difference of the progression 2a-b, 4a-3b, 6a-5b,....is( )
(a) a-b (b) 2a-b (c) 2a+2b (d) 2a-2b

20. An irrational number between a and b is. ( )
a) $\frac{ab}{2}$ (b) $\frac{a+b}{2}$ (c) $\sqrt{ab}$ (d) $\frac{\sqrt{ab}}{2}$

21. If the degree of the polynomial: $P(x) = ax^5 + 2x^3 - 6x + 7$ is 3 then a=( )
(a) 0 (b) -2 (c) 5 (d)2

22. The pair of lines represneted by 2x-ky+3=0 and 4x+6y-5=0 are parallel if K= ( )
(a)6 (b) 3 (c) -3 (d) -6

23. The number of roots of a quadratic equation is ( )
(a) 0 (b) 1 (c) 2 (d) at most 2

24. The Zero of the polynomial p(x)=ax+b is ( )
(a) $-\frac{a}{b}$ (b) $\frac{b}{a}$ (c) $\frac{a}{b}$ (d) $-\frac{a}{b}$

25. The sum of first n terms of an A.P. is given by S_n= ( )
(a) $n[2a+(n-1)d]$ (b) $\frac{n}{2}[a+(n-1)d]$

(c) $\frac{n}{2}[2a+(n+1)d]$ (d) $\frac{n}{2}[2a+(n-1)d]$

26. A cylinder, a cone and a hemisphere are of equal base and have the same height then the Ration of their volumes ( )

(a) 1:2:3 (b) 2:1:3 (c) 3:2:1 (d) 3:1:2

27. The produt of two members is 20736 and their HCF is 54 then their LCM= ( )

(a) 284 (b) 384 (c) 484 (d) 584

28. If the diameter of a sphere is d, then its volume is ( )

(a) $\frac{1}{3}\Pi d^3$ (b) $\frac{1}{24}\Pi d^3$ (c) $\frac{4}{3}\Pi d^3$ (d) $\frac{1}{6}\Pi d^3$

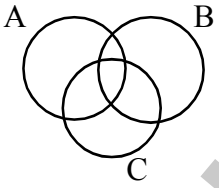
29. A solid sphere of radius 'r' is melted, and recast into the shape of a solid cone of hight 'r'. The radious of base of the cone is. ( )

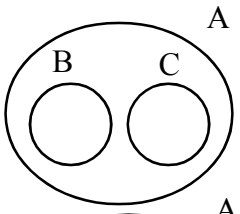
(a) 4r (b) 3r (c) 2r (d) r

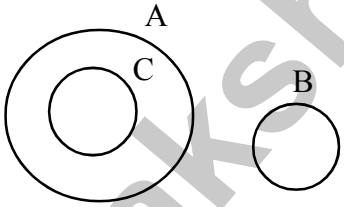
30. The head of rice in the shape of a.... ( )

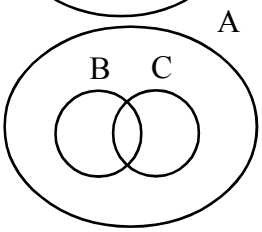
(a) Cone (b) Cylinder (c) hemisphere (d) Frustum

31. If A = {triangles}, B=(right triangles}, C={isosceles triangles} then which of the following figure is correct. ( )

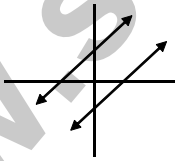
(a) 

(b) 

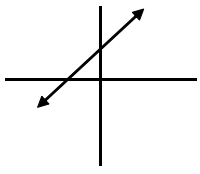
(c) 

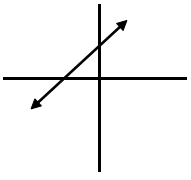
(d) 

32. Which of the following pair of lines represent an inconsistent system of linear equations. ( )

(a) 

(b) 

(c) 

(d) 

33. The solution of the pair of liner equations representing the lines in the figure is. ( )

(a) X=0, Y=30 (b) X=0, Y=-20

(c) X=21, Y=0, (d) X=42,Y=12.