This Question Paper contains 4 printed Pages.

MODEL PAPER -3
MATHEMATICS, Paper – I

(English version)

(Parts A and B)

Time : 2 hrs. 45 min.] ***[Maximum Marks: 40***

Instructions:

1. *In the time duration of 2 hours 45 minutes, 15 minutes of time is allotted to read and understand the Question paper.*
2. *Answer **all** the questions under **Part-A** on a separate answer book.*
3. *Write the answers to the questions under **Part- B** on the Question paper itself and attach it to the answer book of **Part- A***

Part - A

Time : 2 hours ***Marks : 35***

1. Find the distance between A(4,0) and B (8,0) ?
2. In A. P n^{th} term $t_n = a+(n-1)\,d$. Explain each term in it ?
3. The quadratic equation $2x^2 + kx + 3 = 0$ have tow equal roots. There find 'k' value ?
4. If A={1,2,3,4} and B= { 2,4,6,8} Find A U B ?
5. Log 100 rational or irrational ? justify your answer ?
6. Find the value of $\log_{\frac{2}{3}}^{\frac{8}{27}}$
7. Check whether the 3 and -2 are the zeros of the polynomial $p(x) = x^2 - x - 6$

SECTION –II

NOTE : (i) *Answer all the problems.*

(ii) Each question carries 2 Marks.

8. Show that the square of an odd positive interger is in the form of 8m+1, $^{8m+3}$ where 'm' is a whole number.

9. Show that the points A (3,-2) , (-2,8) and (0,4) are collinear ?

10. Solve the given pair of equation using substitution method ?

    2x-y=5
    3x-2y=11

11. Check whether -150 is a term of the AP : 11,8,5,2……..

12. Find the roots of the Quadratic equation

    $\frac{1}{x} - \frac{1}{x-2} = 3$ $x \neq 0,2$

13. If -1 is a zero of the polynomical f(x) = x^2 - 7x-8 , then caluate the other zero ?

SECTION – III

14. Use division algorithm to show that the cube of any positive interger is fo the form 9m, 9m+1 or + 9m + 8

    (or)

    Prove that $3+2\sqrt{5}$ is asn irrational number.

15. Draw the graph for the polynomical p (x) = x^2-3x-4 and find the zeroes form the graph. ?

    (or)

    Draw the graph for the following pair of linear equation in two variable and find their solution from the graph ?

    2x+y-5 = 0

    3x- 2y- 4=0

16. If A ={ x:x is a natural number }, B= { x:x is an even natural number } C= x:x is an odd natural number } D= { x:x is a prime number }

Find 1) A $\cap$ B 2) A $\cap$ B 3) B $\cap$ C 4) B $\cap$ D.

(or)

A train travels 360km at a uniform speed. If the speed had been 5 km/h more , it would have taken 1 hour less for the same journey. Find the speed of the train?

17. If the sum of first 7 terms of an AP is 49 and that of 17 terms in 289, find the sum of first 'n' terms ?

(or)

Find the coordinates of the point which divides the line segment joining the points 4,-3) and (8,5) in the ratio 3:1 internally

PART –B

18. The number of subsets of the null set Ø is _____ ( )

A) 0 B) 1 C) 3 D)4

19. Log $\frac{2}{10}$ = 0 .3010 : Log $\frac{3}{10}$ = 0.4771 Log $\frac{6}{10}$ = _____ ( )

20. Euclid's division lemma can be applicable to all ….. ( )

A) Positive intergers B) Integers C) Real numbers D) Whole numbers ( )

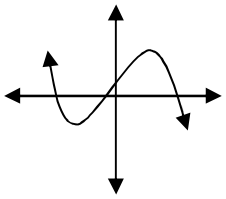
21. The number of Zeros of the polynomial , whose graph is given below ( )

A) 0

B) 1

C) 2

D) 3



22. In a quadratic equation $ax^2 + bx + c = 0$: if $b^2 - 4ac > 0$ ( )
Their roots are _____

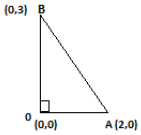
A) Real and distinct B) real and equal

C) Imaginary D) None

23. if a,b,c are in G.P, then b = _____ ( )

A) ac B) $\sqrt{ac}$ C) $\frac{a+c}{2}$ D) a^2 c^2

24. The area of the triangly BOA is _____ sq units. ( )



A) 1 B)2 C)3 D4

25. If $p(x) + x^2 - 4x + 5$ then the value of p (1) is _____ ( )

A) -1 B) 0 C) 1 D)2

26. '*l*' represents _____in the formula $Sn = \frac{n}{2}(a + l)$ ( )

A) First term B) last term C) 'n'th term D) None

27. Which of the following coincides with x-y=6 ( )

A) 10x-60=10y B) 48+8y=8x

C) x-y=6 D) all the above