This Question Paper contains 4 Printed Pages.

15E(B)

MATHEMATICS, Paper – I

(English version)

Parts A and B

Time : 2½ Hours] ***[Maximum Marks : 50***

Part - B

Time : 30 minutes ***Marks : 15***

Note :-

1. Each question carries ½ mark.
2. Answers are to be written in the question paper only.
3. **All** questions are to be answered.
4. Marks will **not** be given for over-written, re-written or erased answers.

I. *Write the CAPITAL LETTER of the correct answer in the brackets provided against each question.* $10 \times ½ = 5$

1. $\sim(p \vee q) =$ ..... [.....]

(A) $\sim p \vee q$ (B) $\sim p \vee \sim q$

(C) $\sim p \wedge q$ (D) $\sim p \wedge \sim q$

2. Two sets A and B are disjoint, then $n(A \cup B)$ = ... [.....]

(A) $n(A) + n(B)$ (B) $n(A) + n(B) - n(A \cap B)$

(C) $n(A \cap B)$ (D) $n(A)$

3. If $f(x) = x^2 - 5x + 6$, then $f(2)$ = ... [.....]

(A) 0 (B) 20

(C) 5 (D) –1

4. If the roots of the equation $px^2 + qx + r = 0$ are equal, then ..... [.....]

(A) $q^2 = pr$

(B) $p^2 = 4pq$

(C) $q^2 = 4pr$

(D) $r^2 = pr$

5. The inequation for $1 < x < 3$ is ..... [.....]

(A) $x^2 + 4x + 3 < 0$

(B) $x^2 - 4x + 3 < 0$

(C) $x^2 - 4x - 3 < 0$

(D) $x^2 + 4x - 3 < 0$

6. The graph of the curve of $x = my^2$ $(m > 0)$ lies in the quadrants ..... [.....]

(A) 1 and 2

(B) 2 and 3

(C) 3 and 4

(D) 1 and 4

7. The point that lies in the half plane $x + y < 3$ is ..... [.....]

(A) (1, 1)

(B) (2, 2)

(C) (3, 3)

(D) (4, 4)

8. $16^{1.25}$ = ... [.....]

(A) 16

(B) 24

(C) 32

(D) 64

9. $1 + 2 + 3 +$ ..... $+ 100 =$ ..... [.....]

(A) 5050

(B) $(5050)^2$

(C) 49225

(D) 505

10. If x, y, z are in A.P., then $2y$ = ... [.....]

(A) $x + z$

(B) $x - z$

(C) $\sqrt{xy}$

(D) xz

II. *Fill in the blanks with suitable answers.* $10 \times ½ = 5$

11. μ' = ...

12. The symbol for existential quantifier is .....

13. If $(x + y, 1) = (3, y - x)$, then y = ...

14. If a function is one-one and on-to, then the function is called .....

15. If the sum of co-efficients of the polynomial $f(x)$ is zero, then ..... is a factor of it.

16. If $x < 0$, $y > 0$, then the point (x, y) lies in ..... quadrant.

17. $\underset{x \to \infty}{Lt} \frac{2x+3}{3x+5}$ = ...

18. The limiting position of secant of a Circle is .....

19. The Geometric Mean of 5 and 125 is .....

20. Sum to n terms of the series

$(a+1) + (a + 2) + (a + 3) +$ ..... is .....

III. *For the following questions under* ***Group-A****, choose the correct answer from the master list* ***Group-B*** *and write the letter of the correct answer in the brackets provided against each item.* $10 \times \frac{1}{2} = 5$

(i) **Group - A**

21. If $A \subset B$, then $A \cap B$ = ... [.....]

22. If $f(x) = x$, then f is ..... [.....]

23. If $|x| \leq a$, then ..... [.....]

24. $p \wedge (q \vee r)$ = ... [.....]

25. If $A \cap B = \phi$, then $B \cap A'$ = ... [.....]

Group - B

(A) $x \geq a$ or $x \leq -a$

(B) $(p \wedge q) \vee (p \wedge r)$

(C) B

(D) Constant function.

(E) A

(F) $-a \leq x \leq a$

(G) Identity function

(H) $(p \wedge q) \vee (p \vee r)$

(ii) **Group - A**

26. If $(\sqrt{x})^a = x^{2/3}$, then a = ... [.....]

27. If $f(x) = 3\sqrt{x}$, then $\underset{x \to 9}{Lt} f(x)$ = ... [.....]

28. $\Sigma n = 66$, then n = ... [.....]

29. $\sum_{i=0}^{3} 4^i$ = ... [.....]

30. If $a^x = b$; $b^y = c$; $c^z = a$, then xyz = ... [.....]

Group - B

(A) 85

(B) 1

(C) $\frac{4}{3}$

(D) 6

(E) 9

(F) 0

(G) 11

(H) 2/