P-234

MRD-11th 120623 (A)

Time: 3:00 Hours

Mathematics (Part-I)

Total Marks: 100

Note: There are three sections in this paper i.e A, B & C

VERSION: C

Instructions:
- Please attempt Section-A on the MCQs Answer Sheet only.
- Only black ball point or market may be used for shading the relevant circle.
- Please make sure that there is no cutting, over writing, erasing, or multiple circles shading.

Time Allowed: 20 Minutes

"Section – A"

Marks: 20

Q.1. Choose the correct option i.e A, B, C or D.

1. $Tan2\alpha =$ _____

● $\frac{2tan\alpha}{1-tan^2\alpha}$ ◉ $\frac{1-tan^2\alpha}{2tan\alpha}$ ◎ $\frac{2tan\alpha}{1+tan^2\alpha}$ ◎ $\frac{1+tan^2\alpha}{2tan\alpha}$

2. $Sin(\frac{\pi}{2}-\alpha)=$ _____

Ⓐ $Sin\alpha$ ● $Cos\alpha$ ◎ $-Sin\alpha$ ◎ $Cos\alpha$

3. *A triangle which has no right angle is called* _____.

● Oblique triangle ◉ Right angled triangle ◎ Both A and B ◎ *None of these*

4. $\sqrt{\frac{s(s-a)}{bc}} =$ _____

Ⓐ $Sin\alpha/_2$ ● $Cos\beta/_2$ ◎ $Cos\alpha/_2$ ◎ $tan\alpha/_2$

5. Period of tan3x is _____.

Ⓐ π ◉ $\frac{2\pi}{3}$ ◎ 2π ● $\pi/_3$

6. $^{20}C_{18}$ =_____.

Ⓐ 360 ● 190 ◎ 40 ◎ 10

7. 1 + oi is called _____.

● Multiplicative identity ◉ Multiplicative inverse ◎ Additive inverse ◎ Additive identity

8. *If* $z = x + iy$ *and* $\frac{z+5i}{z+5i} = 1$ *then z lies on:*

● x-axis ◉ y-axis ◎ Line y=5 ◎ None of these

9. A system of linear equation has a unique solution, then the system is _____.

Ⓐ Inconsistent ● Consistent ◎ Both A and B ◎ None of these

10. If A and B are non-singular matrices. Then $(AB)^{-1}$= _____.

Ⓐ $A^{-1}B^{-1}$ ● $B^{-1}A^{-1}$ ◎ $(BA)^{-1}$ ◎ All of these

11. $\vec{A} = 2i + j - k$ then $|\vec{A}|$ = ____.

Ⓐ 2 ◉ 4 ◎ 6 ● $\sqrt{6}$

12. The general term of a geometric sequence is_____.

Ⓐ a_1r^n ● ar^{n-1} ◎ a_1r^{n+1} ◎ $a_1+(n-1)d$

13. Relation between geometric and Harmonic mean is: _____.

● $G > H$ ◉ $G < H$ ◎ $G = H$ ◎ $G = AH$

14. What is the nth term of the series $1+\frac{(1+2)}{2}+\frac{(1+2+3)}{3}+\cdots\cdots\cdots\cdots$?

● $\frac{n+1}{2}$ ◉ $\frac{n(n+1)}{2}$ ◎ $n^2(n^2+1)$ ◎ $\frac{(n+1)(2n+3)}{2}$

15. If $A = \begin{bmatrix} 1 & 3 & 1 \\ -1 & 2 & 0 \\ 2 & 0 & -2 \end{bmatrix}$ then A_{23}= _____.

● 0 ◉ −6 ◎ 6 ◎ 1

16. If $t_n = 6n+5$ then t_{n+1}= _____.

Ⓐ $6n-1$ ● $6n+11$ ◎ $6n+6$ ◎ $6n-5$

17. $\frac{(n+1)!}{(n-1)!}$ = _____

● n^2+n ◉ $(n+1)(n+2)$ ◎ $\frac{1}{n(n+1)}$ ◎ $\frac{(n+2)!}{n}$

18. *For any natural number n,* $1+2+3+4+\ldots$_____$+n =$_____

Ⓐ $\{\frac{n(n+1)^2}{2}\}^2$ ● $\frac{n(n+1)}{2}$ ◎ $\frac{n(n+1)(n+2)}{2}$ ◎ n^2

19. The domain of $y=\frac{x}{\sqrt{x^2-3x+2}}$ is _____.

Ⓐ $(\infty, 1)$ ◉ $(2, \infty)$ ◎ $(\infty, 1)U(2, \infty)$ ● $(-\infty, 1)U(2, \infty)$

20. Which of the following point is a solution of inequality $2x-y \geq 0$

Ⓐ (-1,0) ● (-1,-1) ◎ (1,-1) ◎ All of these