Complex Numbers.

1) The points z_1, z_2, z_3, z_4 in complex plane are the vertices of ▱m taken in order iff.

a) $z_1 + z_4 = z_2 + z_3$ b) $z_1 + z_3 = z_2 + z_4$

c) $z_1 + z_2 = z_3 + z_4$ d) $z_1 - z_2 = z_3 - z_4$.

2) Area enclosed between curves $x^2 = 4y$, the line $x = 2$ & x-axis (in sq. units) is.

a) 1 b) $\frac{2}{3}$ c) $\frac{4}{3}$ d) $\frac{8}{3}$.

3) The area bounded by the circle $x^2 + y^2 = 4$, the line $x = \sqrt{3}y$, x-axis lying in first quadrant is [in sq units].

a) $\frac{\pi}{2}$ b) $\frac{\pi}{4}$ c) $\frac{\pi}{3}$ d) π.

4) The parabola's $y^2 = 4x$ & $x^2 = 4y$ divide the square region bounded by the lines $x = +4$, $y = 4$ & co-ordinate axis. If S_1, S_2, S_3 are respectively the area's of the parts numbered from bottom then $S_1 : S_2 : S_3$ is

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

5) Area of the square formed by $|x| + |y| = 1$ is

a) 0 b) 1 c) 2 d) 4.

6) Find the area of the figure bounded by $y = (x-1)$ & $y = 3 - |x|$.

a) 8 b) 4 c) $2\sqrt{2}$ d) 2.

7) 'S' is the area enclosed b/w $\sin^{-1}[x]$ & x-axis 'C' is the area enclosed b/w $\cos^{-1}[x]$ & x-axis then S/C is

a) 1 b) $\frac{\pi - 2}{\pi}$ c) $\frac{\pi}{\pi - 2}$ d) $(\pi - 2)\pi$.

8) $\int_{-1}^{4} f(x)\,dx = 4$, $\int_{2}^{4} (3-f(x))\,dx = 7$,

$\int_{-1}^{2} f(x)\,dx = A$.

a) 1 b) 3 c) 5 d) 7.

9) The value of $(z+3)(\bar{z}+3)$ is equivalent to.

a) $|z+3|^2$ b) $|z+3|$ c) $|z-3|$ d) $|z-3|^2$.

10) $Amp(|z|) = z_1$, $|Amp(z)| = z_2$
$z = x+iy$, $z \neq 0$ then the relation b/w z_1 & z_2 is.

a) $z_2 > z_1$ b) $z_2 < z_1$ c) $z_2 = z_1$ d) No Comparision

11) For any Complex Number 'z' minimum value of $|z| + |z-1|$ is.

a) 1 b) $\frac{1}{2}$ c) 0 d) $\frac{3}{2}$.

12) If $(a_1+ib_1)(a_2+ib_2)(a_3+ib_3)\ldots\ldots$ $(a_n+ib_n) = A+iB$, then $\sum_{i=1}^{n} \tan^{-1}\left(\frac{b_i}{a_i}\right)$

a) $\frac{B}{A}$ b) $\tan^{-1}\left(\frac{B}{A}\right)$ c) $\tan\left(\frac{B}{A}\right)$ d) $\tan^{-1}\left(\frac{A}{B}\right)$

Key Answers.

1) b, 2) b 3) c 4) b

5) c 6) b 7) c 8) c

9) a 10) a 11) a 12) b