

OBJECTIVE (1st YEAR)

Chapter : (1)

Choose the Correct Answer:

- 1) \sqrt{n} is _____ number where n is not a perfect square integer.
a- Whole b- Natural c- Rational d- Irrational
- 2) The number of the form $\frac{p}{q}$ where $p, q \in \mathbb{Z}$, $q \neq 0$ is called _____.
a- Whole b- Integer c- Rational d- Irrational
- 3) $\{0\}$ is closed under _____.
a- Subtraction b- Addition c- Multiplication d- a, b, c all.
- 4) $\forall x, y \in \mathbb{R}$ $xy = yx$ is called _____ Law under multiplication.
a- Closure b- Transitive c- Commutative d- Trichotomy
- 5) $\forall x, y, z \in \mathbb{R}$ $x < y \Rightarrow xz$ _____ yz for $z < 0$.
a- = b- < c- > d- \leq
- 6) $\forall x, y \in \mathbb{R}$ $x = y \Leftrightarrow y = x$ is _____ property.
a- Transitive b- Symmetric c- Reflexive d- Additive
- 7) $\forall a \in \mathbb{R}$ $(a^{-1})^{-1} =$ _____.
a- \bar{a} b- a c- 0 d- 1
- 8) $\forall a, b \in \mathbb{R}$ $(-a)(-b) =$ _____.
a- \bar{ab} b- (-a)b c- $a(-b)$ d- $-(ab)$
- 9) π is _____ number.
a- Whole b- Natural c- Complex d- Irrational
- 10) \sqrt{p} where p is prime is _____ number.
a- Irrational b- Rational c- Whole d- Natural
- 11) $\forall a \in \mathbb{R}$ $a = a$ is _____ property.
a- Reflexive b- Symmetric c- Transitive d- Trichotomy
- 12) 1.343434... is _____ number.
a- Whole b- Rational c- Irrational d- Natural
- 13) $\forall a, b \in \mathbb{R}$ (a, b) is called _____ number.
a- Real b- Rational c- Irrational d- Complex
- 14) Conjugate of $-3+4i$ is _____.
a- $-3-4i$ b- $3+4i$ c- $3-4i$ d- $-3+4i$
- 15) Modulus of $a+ib$ is _____.
a- $\sqrt{a+b}$ b- $\sqrt{a-b}$ c- $\sqrt{a^2-b^2}$ d- $\sqrt{a^2+b^2}$

16) $i^{101} =$ _____

- a- i b- -1 c- $-i$ d- 1

17) Modulus of a Complex number is distance from _____

- a- $(0,0)$ b- $(1,0)$ c- $(0,1)$ d- $(1,1)$

18) Modulus of $3-4i$ is _____

- a- 3 b- 4 c- 5 d- -4

19) $(-1)^{-\frac{2}{2}} =$ _____

- a- -1 b- 1 c- i d- $-i$

20) $\forall z \in \mathbb{C} \quad z\bar{z} =$ _____

- a- $|z|$ b- \bar{z} c- $|z|^2$ d- $|\bar{z}|$

21) Multiplicative identity in Complex numbers is _____

- a- $(0,1)$ b- $(0,-1)$ c- $(1,0)$ d- $(-1,0)$

22) In Complex numbers, $(0,1)(0,1) =$ _____

- a- $(0,1)$ b- $(0,-1)$ c- $(1,0)$ d- $(-1,0)$

23) For $z \in \mathbb{C} \quad \overline{\bar{z}} =$ _____

- a- \bar{z} b- $-z$ c- $-\bar{z}$ d- z

24) If n is prime then \sqrt{n} is _____ number.

- a- Prime b- Composite c- Rational d- Irrational

25) If $z = a+ib$ then $z^{-1} =$ _____

- a- $a-ib$ b- $\left(\frac{a}{a^2+b^2}, \frac{-b}{a^2+b^2}\right)$ c- $\left(\frac{a}{a^2+b^2}, \frac{-b}{a^2+b^2}\right)$ d- $\frac{a-ib}{a}$

26) Factors of x^2+y^2 are _____

- a- $(x+iy)(x+iy)$ b- $(x-iy)(x-iy)$ c- $(x+iy)(x-iy)$ d- None of them

27) $\forall z_1, z_2 \in \mathbb{C} \quad \overline{z_1+z_2} =$ _____

- a- $\bar{z}_1+\bar{z}_2$ b- \bar{z}_1+z_2 c- \bar{z}_1+z_2 d- $\bar{z}_1+\bar{z}_2$

28) $\forall z_1, z_2 \in \mathbb{C} \quad \overline{z_1 \cdot z_2} =$ _____

- a- $\bar{z}_1 \cdot \bar{z}_2$ b- $\bar{z}_1 \cdot z_2$ c- $\bar{z}_1 \cdot \bar{z}_2$ d- $\bar{z}_1 \cdot \bar{z}_2$

29) $\forall z_1, z_2 \in \mathbb{C} \quad |\overline{z_1 \cdot z_2}| =$ _____

- a- $z_1 \cdot z_2$ b- $\bar{z}_1 \cdot \bar{z}_2$ c- $|z_1| |z_2|$ d- $|z_1| \cdot \bar{z}_2$

30) Which set is closed under multiplication?

- a- $\{0, -1\}$ b- $\{0, 1\}$ c- $\{0, -2\}$ d- $\{0, 2\}$

31) If $z = (-1, 7)$ then $\bar{z} =$ _____

- a- $(-1, 7)$ b- $(1, 7)$ c- $(-1, -7)$ d- $(1, -7)$

32) If $ab=0 \Rightarrow$ _____

- a- $a=0$ b- $b=0$ c- $a=0$ or $b=0$ d- $a=0$ and $b=0$

33) $1000 \times 1 = 1000$ is _____ property under multiplication.

- ✓ a- Identity b- Inverse c- Commutative d- Associative.

34) Additive identity is _____.

- a- 1 ✓ b- 0 c- -1 d- ∞

35) Real part of $a+ib$ is _____.

- a- a, b both ✓ b- a c- b d- None

36) $a+ib = c+id$ iff _____.

- a- $a=b$ b- $c=d$ c- $a=b, c=d$ ✓ d- $a=c, b=d$

37) $K(a, b) =$ _____.

- a- (Ka, b) b- (a, Kb) c- (a, b) ✓ d- (Ka, Kb)

38) Conjugate of $(2, 0)$ is _____.

- ✓ a- $(2, 0)$ b- $(-2, 0)$ c- $(\pm 2, 0)$ d- $(0, -2)$

39) Additive identity in Complex numbers is _____.

- ✓ a- $(0, 0)$ b- $(0, 1)$ c- $(1, 0)$ d- $(0, -1)$

40) Inverse of $(a, 0)$ is _____.

- a- $(-a, 0)$ ✓ b- $(\frac{1}{a}, 0)$ c- $(0, a)$ d- $(0, -\frac{1}{a})$

41) _____ is real number.

- a- z b- \bar{z} ✓ c- $z + \bar{z}$ d- $z - \bar{z}$

42) Modulus of $-5i$ is _____.

- ✓ a- 5 b- $\sqrt{5}$ c- 25 d- $-\sqrt{5}$

43) Argument of $z = x+iy$ is defined by $\theta =$ _____.

- a- $\sin^{-1}(y/x)$ b- $\cos^{-1}(y/x)$ c- $\tan^{-1}(x/y)$ ✓ d- $\tan^{-1}(y/x)$

44) Polar form of Complex Number is _____.

- a- $r(\sin\theta + i\cos\theta)$ ✓ b- $r(\cos\theta + i\sin\theta)$ c- $r\cos\theta$ d- $r\sin\theta$

45) z is real if _____.

- ✓ a- $z = \bar{z}$ b- $z = -\bar{z}$ c- $z = 2z$ d- $z = 2\bar{z}$

46) $i^{-3} =$ _____.

- ✓ a- i b- $-i$ c- 1 d- -1

47) $5+2\sqrt{-4}$ in $a+ib$ form is _____.

- a- $5+2i$ b- $5-2i$ ✓ c- $5+4i$ d- $5-4i$

48) Conjugate of $z = -3i$ is $\bar{z} =$ _____.

- a- 3 ✓ b- $3i$ c- -3 d- $-3i$

49) $\forall x, y \in \mathbb{R} - \{0\}$ $x < y \Rightarrow$ _____.

- ✓ a- $\frac{1}{x} > \frac{1}{y}$ b- $\frac{1}{x} < \frac{1}{y}$ c- $\frac{1}{x} > y$ d- $x > \frac{1}{y}$