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MCQs – Ch # 1: F.Sc Part 1
TEXT BOOK OF ALGEBRA AND TRIGONOMETRY CLASS XI
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Chapter 1: NUMBER SYSTEMS

1) $\sqrt{3}$ is
A) Rational
B) Irrational
C) Integer
D) Prime

2) Product $\sqrt{-2}\times\sqrt{-2}$ is equal to

A) – 2
B) 2
C) 0
D) 4

3) $|Z_1 Z_2| =$

A) $|Z_1||Z_2|$
B) $|Z_1|+|Z_2|$
C) $|Z_1|-|Z_2|$
D) $\frac{|Z_1|}{|Z_2|}$

4) If x < y, y < z then

A) x > z
B) x < z
C) x = z
D) none of these

5) $|Z_1 + Z_2|$ is

A) $=|Z_1|+|Z_2|$
B) $>|Z_1|+|Z_2|$
C) $\leq|Z_1|+|Z_2|$
D) $=|Z_1|\times|Z_2|$

6) $(- i)^5$ is

A) i
B) – 1
C) 1
D) – i

6) The conjugate of – 6 + 3i
A) – 6 – 3i
B) – 6 + 3i
C) 6 + 3i
D) 6 – 3i

7) The solution set of 5x + 8 = 0 when x ∈ N is

A) non empty set
B) $-\frac{8}{5}$
C) $\frac{8}{5}$
D) empty set

8) For all x, y, z ∈ R, if (x y) z = x (yz) then this property is called

A) Commutative property under multiplication
B) Associative under multiplication
C) Distributive under multiplication
D) Commutative under addition

9) The additive inverse of a complex number x + yi

A) x – iy
B) x + iy
C) – x – iy
D) $\{x/x^2 + y^2, - y /x^2 + y^2\}$

10) The conjugate of a complex number 5i

A) – 5
B) 5i
C) – 5i
D) 5

11) The property used in this equation 3 x 7 = 7 x 3 is called

A) Closure law
B) Commutative law for addition
C) Commutative property w.r.t multiplication
D) Identity

12) The additive inverse of (-x, -y) is

A) (-x, -y)
B) (x, y)
C) (-x, 0)
D) (x, -y)

13) The property used in the equation 8 + 0 = 8 is called

A) Commutative
B) Associative
C) Additive Identity
D) Additive Inverse

14) For all a, b, c ∈ R, if (a + b) + c = a + (b + c) then the property is called

A) Commutative under addition
B) Associative w.r.t addition
C) Distributive under addition
D) None of these

15) The inverse of an element 'a' under addition is

A) $\frac{1}{a}$
B) - a
C) 1
D) 0

16) The additive identity is

A) 0
B) – 1
C) 1
D) none of these

17) The product of two conjugate complex numbers is always a

A) Real number
B) Complex number
C) Irrational number
D) Natural number

18) The sum of two conjugate complex numbers is always a

A) Real number
B) Irrational number
C) Complex number
D) Natural number

19) $\left|\frac{1+2i}{2-i}\right| =$

A) 1
B) 5
C) ¾
D) 5/3

20) If Z_1, Z_2 be complex numbers then $\overline{Z_1 + Z_2} =$

A) $\overline{Z_1} - \overline{Z_2}$
B) $\overline{Z_1} + \overline{Z_2}$
C) $\overline{Z_1} + Z_2$
D) $Z_1 - \overline{Z_2}$

21) If z = (a, b), then z^{-1} =

A) (a, - b)
B) (-a , b)
C) $\left(\frac{a}{a^2+b^2}, \frac{-b}{a^2+b^2}\right)$
D) $\left(\frac{-a}{a^2+b^2}, \frac{b}{a^2+b^2}\right)$

22) If z = a + bi, then $|z| =$

A) $a^2 - b^2$
B) $a^2 + b^2$
C) $\sqrt{a^2 - b^2}$
D) $\sqrt{a^2 + b^2}$

23) If z1 and z2 are any two complex numbers then $|z_1| - |z_2|$

A) $< |z_1 + z_2|$
B) $\leq |z_1 + z_2|$
C) $> |z_1 + z_2|$
D) $\geq |z_1 + z_2|$

24) $(- i)^{15} =$

A) 1
B) – 1
C) i
D) – i

25) If z_1 = (a, b) and z_2 = (c, d) then $z_1 z_2$ =

A) (ac – bd, ad + bc)
B) (ac + bd, cd – bc)
C) (ad + bc, ac – bd)
D) (ad – bd, ac + bd)

26) $2x^2 + 3y^2 =$

A) (2x + 3iy) (2x – 3iy)
B) $(\sqrt{2}x + \sqrt{3}iy)(\sqrt{2}x - \sqrt{3}iy)$
C) (2x – 3y) (2x + 3y)
D) $(\sqrt{2}x + \sqrt{3}y)(\sqrt{2}x - \sqrt{3}yi)$

27) $p \in$ _____

A) N
B) Q
C) $Q^{/}$
D) none

28) $\forall x \in R, x = x$ is called _____ property.

A) symmetric
B) reflexive
C) transitive
D) none

29) Every recurring $\in'$ terminating decimal represents

A) Q
B) $Q^{/}$
C) R
D) none

30) The complex No. (a + ib) can be written as _____

A) (a, ib)
B) {a, b}
C) (a, b)
D) [a, b]

31) The imaginary part of the complex Nos. (b, a) is _____

A) ia
B) b
C) a
D) none

32) $If\ \ Z = I\ \ then\ \ \overline{\overline{Z}} =$ _____

A) i
B) – i
C) ±1
D) none

33) $If\ \ Z = -\overline{Z}\ then\ Z\ \ is$ _____

A) real
B) imaginary
C) neither type

34) $If\ \ Z = -1 - i\ \ then\ \overline{Z} =$ _____

A) (-1, -1)
B) (-1, 1)
C) (1, -1)
D) none

35) $|i| =$ _____

A) – 1
B) 1
C) 0
D) i

36) The magnitude of $\frac{1+2i}{2-i}$ is _____

A) 5 + 2i
B) – 1
C) 1
D) none

37) If x = 0, then multiplicative inverse of x is _____

A) $\frac{1}{x}$
B) – x
C) 1
D) 0
E) none

38) The real & imaginary part of $\frac{1}{2+i} + \frac{3}{2-i}$ is _____

A) $\frac{5}{8}, \frac{2}{5}$
B) $\frac{5}{8}, \frac{-2}{5}$
C) $\frac{8}{5}, \frac{2}{5}$
D) none

39) The value of i^n = _____ where n is an odd No.

A) – i
B) + i
C) ± i
D) None

40) If the area f triangle is 16, formed by the points Z, Z+iZ and iZ in a complex plane, then $|Z|$ = _____

A) 16
B) $5\sqrt{3}$
C) $4\sqrt{2}$
D) none

41) if x + iy = 5 – $6i^{2k}$, then imaginary part (y) = _____

A) – 6
B) 6
C) 0
D) None

42) A real number is always

A) A natural no
B) Positive integer
C) Rational number
D) Complex number

43) The property used in the equation 7.8 + (- 7.8) = 0 is

A) Commutative
B) Associative
C) Additive Identity
D) Additive inverse

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