

Episode No – 23

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Topic: Calculus

\* Z is unimodular C N then

- a) Arg (z)
- b) Arg ( $\bar{z}$ )
- c) 2 Arg (z)
- d) -2 Arg (z)

Ans: a)

\*  $2Z_1 - 3Z_2 + Z_3 = 0$ ,  $Z_1, Z_2, Z_3$  are represented by

- a) Straight line
- b) Circle
- c) Right angled  $\Delta^{\text{le}}$
- d) Paralrola

Ans: a)

\*  $\frac{Z_1 Z_2}{Z_1 + Z_2}$  is purely imaginary no then  $\left| \frac{Z_1 - Z_2}{Z_1 + Z_2} \right|$  is equal to . . . .

a)  $\frac{3}{2}$

b) 1

c)  $\frac{2}{3}$

d)  $\frac{4}{3}$

Ans : b)

\*  $Z = \frac{(1+i\sqrt{3})^2}{4i(1-i\sqrt{3})}$  then Arg Z is

a)  $\pi$

b)  $\frac{\pi}{2}$

c)  $\frac{\pi}{4}$

d)  $\frac{-\pi}{4}$

Ans: b)

- \* If  $Z$  does not lie on angular bisector of coordinate axes &  $Z^2 - 24i = 0$  then  $|Z| =$
- Does not exist
  - 12
  - $\sqrt{24}$
  - 24
- Ans : a

- \*  $Z = 2 - Z$  then locus of  $Z$  is a line \_\_\_\_\_
- Passing thro (0,0)
  - Parallel to Y-axis
  - Parallel to X-axis
  - With slope =  $\sqrt{3}$
- Ans: b)

- \*  $\text{Arg } Z = \frac{-5f}{1}$  and then.  $\text{Arg} \left[ \frac{Z+\bar{Z}}{1+Z\bar{Z}} \right]$  is
- 0
  - $\frac{5f}{1}$
  - $\frac{-5f}{1}$
  - $f - \frac{5f}{1}$
- Ans : a)

- \*  $\alpha + i\beta = \tan^{-1}(Z)\alpha$  being constant then  $X^2 + Y^2 + 2x \cot 2\alpha =$
- 0
  - 1
  - 1
  - 2
- Ans : b)

- \* How many terms are there in the expansion of  $(4x+7y)^{10} + (4x-7y)^{10}$
- 5
  - 6
  - 11
  - 22
- Ans : b)

- \* The term independent of  $x$  in  $\left[ 2x + \frac{1}{3x^2} \right]^9$  is
- II
  - III
  - IV
  - V
- Ans : c)

\* The Coefficient of  $x^{-5}$  in the expansion of  $\left[a - \frac{1}{bx^2}\right]^{11}$  is

- a)  $462 a^6 b^{-5}$
- b)  $462 a^5 b^{-6}$
- c)  $-462 a^5 b^{-6}$
- d)  $-462 a^6 b^{-5}$

Ans : b)

\* If in the binomial expansion  $(1+x)^n$  coefficients of 5<sup>th</sup>, 6<sup>th</sup>, 7<sup>th</sup> terms are in A.P then 'n' is equal to ...

- a) 7 or 13
- b) 7 or 14
- c) 7 or 15
- d) 7 or 17

Ans : b)