CHAPTER 5 – COMPLEX NUMBERS & QUADRATIC EQUATIONS

Questions based on Focus Area

1. Write in the complex number form : $\frac{1+i}{1-i}$
2. The multiplicative inverse of the complex number 3 + 4i = ……
3. i^{18}= …….

   i) 1 ii) 0 iii) -1 iv) i
4. What is i^{35} ?
5. Consider the complex number $Z = \frac{2+i}{(1+i)(1-2i)}$.

   Represent Z in the form a+ ib
6. Express the complex number $Z = \frac{5+i}{2+3i}$
7. Express $\frac{2+i}{2-i}$ in the form a+ib.
8. Consider the complex number , $Z = \frac{5-\sqrt{3}i}{4+2\sqrt{3}i}$ in the form a+ib.
9. Find the real numbers x and y if (x-iy) (3+5i) is the conjugate of -6-24i.
10. Find the modulus of $\frac{1+i}{1-i} - \frac{1-i}{1+i}$.
11. Let z_1= 2 – i , z_2 = -2 + i. Find (i) Re$(\frac{z_1 z_2}{\bar{z}_1})$ (ii) Im $(\frac{1}{z_1 \bar{z}_1})$.
12. Write in complex number form : $(1-i)^3$
13. Express (- $\sqrt{3}$ + $\sqrt{-2}$) $\left(2\sqrt{3} - i\right) in\ the\ form\ of\ a + ib.$