XI/MATHEMATICS/ Date:25.10.17   **Marks: 30**   **Duration: 1Hour**

ATTEMPT ANY SIX

Q.1. From amongst 2000 literate individuals of a town,70% read Marathi Newspapers, 50% read English newspapers and 32.5% read both Marathi and English newspapers. Find the number of individuals who read (i) atleast one of the newspapers. (ii) neither Marathi nor English newspaper (iii) only one of the newspapers.

Q.2. Show that $(^{-}1+ \sqrt{3i})^3$ is a real number.

Q.3. Represent the following complex numbers by points in Argand's diagram.
(i) 1+2i (ii) 2-I (iii) -3-2i (iv) -2+3i

Q.4. Find the square roots of the following complex number. (i) $3+2\sqrt{10i}$

Q.5. If $\theta°=$ $\dfrac{5\text{л}^\text{c}}{9}$ and $\emptyset^\text{c}=900°$, find θ and ɸ.

Q.6. The measures of angles of triangle are in the ratio 2:3:5. Find their measures in radians.

Q.7. If $2\cos^2θ + 3\cosθ=2$,then find cos θ.

Q.8. If $\mathcal{X}$ = r. cosθ. cos ɸ, y=r. cosθ .sinɸ, z= r. sinθ, then show that $x^2 + y^2 + z^2 = r^2$.