



Note: Note: Attempt five questions. Selecting Two Questions from Section-A and three question from section B. all Question Carry equal marks.

Section –A

Q.1. a) Transform the cartesian equation of ellipse $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$ to its polar form

Q.2. b) Evaluate the integral $\int_{1.0}^{1.30} \sqrt{x} dx$ where $h=0.05$ using

i) Trapezoidal rule ii) Simpson rule and compare with the exact value.

Section –B

Q.3 a) Use the method of variation of parameters to solve $y'' + y = \frac{1}{1+\sin x}$