

Assignment-I
B.Sc.(Prog.) with chemistry Sem-I
Mechanics

Attempt all Questions

Marks:20

Q1. A force field is given by $\vec{F} = (2xy + z^3)\hat{i} + x^2\hat{j} + 3xz^2\hat{k}$ determine whether is it conservative or non-conservative? 5

Q2. State and prove work- energy theorem. 5

Q3. For a force field $\vec{F} = (y^2 - x^2)\hat{i} + 3xy\hat{j}$. Compute the line integral from point (0,0) to the point (x_o, y_o) along the path made up of two straight sections (0,0) to $(x_o, 0)$ and $(x_o, 0)$ to (x_o, y_o) . Compare with result you get by taking the other sides of rectangle as the path of integration. 10

