

Noida Institute of Engineering & Technology
Greater Noida

B.Tech/M.Tech (Integrated)- First Semester(2020-21)

Branch-All Branches(Except BT and CSBS)

Second Sessional Exam

Subject Name –Engineering Mathematics-I/Mathematical Foundation –I

Subject Code-AAS0103/AAS0104/AMIAS0103

Time-30 Min

Max.Marks-10

Note- Attempt any two questions of the following

Q.1. A rectangular box open at top is to have a given capacity. Find the dimension of the box requiring least material.

Q.2. A balloon in the form of a right circular cylinder of radius 1.5 m and length 4m is surmounted by hemisphere ends. If the radius is increased by 0.01 m and the length by 0.05 m. Find the percentage change in the volume of balloon.

Q.3.If $\phi(cx - az, cy - bz) = 0$, show that $a \frac{\partial z}{\partial x} + b \frac{\partial z}{\partial y} = c$.