Kurdistan Regional Government Iraq
Ministry of Higher Education & Scientific Research
Salahaddin University –Erbil
College of Basic Education
Department: General Science

Module : **Mechanics**
Stage : **First**
Round : **Midterm Exam**
Time : **1:15 Hour**
Date : **27-11-2023**

Midterm Exam - First Semester
(2023-2024)

Note: Students are allowed to use calculator.

Student Name:

Q1/ **If $\vec{E}$ and $\vec{F}$ are two vectors given by; $\vec{E} = 2\hat{\imath} + 2\hat{\jmath} - \hat{k}$ and $\vec{F} = 6\hat{\imath} - 3\hat{\jmath} + 2\hat{k}$. Find the following:**

a- The magnitude for vectors $\vec{E}$ and $\vec{F}$. (4 Marks)
b- The angle between the two vectors. (5 Marks)
c- $(2\vec{E} \times \vec{F})$ (5 Marks)
d- The unit vector for $\vec{E}$. (4 Marks)

Q2/ **A body moves along the x-axis according to the law ($x = 2t^3 + 5t^2 + 5$), where (x) is in meters and (t) is in seconds, find the following:**

a- The velocity at any time. (3 Marks)
b- The position, velocity at (t =2sec) and (t =3sec). (5 Marks)
c- The average velocity between (t =2sec) and (t =3sec). (4 Marks)

Dr. Wala Dizayee

Best Wishes