

Assignment#2  
MTH622 (Spring 2019)

**Total marks: 20**  
**Module#97 to 130**  
**Due date: July 26, 2019**

**DON'T MISS these important instructions:**

- Upload assignments properly through LMS.
- All students are directed to use the font and style of text as is used in this document.
- This is an individual assignment, not group assignment, so keep in mind that you are supposed to submit your own and self-made assignment even if you discuss the questions with your class fellows. All similar assignments (even with some meaningless modifications) will be awarded zero marks and no excuse will be accepted. This is your responsibility to keep your assignment safe from others.
- Solve the assignment on MS word document.

**Question:1**

Find the total energy of the force  $\vec{F} = 9x\hat{i}$  acting on a simple harmonic oscillator, where  $i$  represents the direction.

**Question:2**

Consider the force field  $\vec{F}(x, y) = (2xe^{-xy} + x^2ye^{-xy})\hat{i} + (x^3e^{-xy} + 2y)\hat{j}$  then find whether the given field is conservative or not.