UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, May 2020

Course: Introduction to Sensor Tech and
Instrumentaton **Semester: II**
Course Code: CSIS1001
Time: 10.00-12.00
Programme: CSE+IOT
Max. Marks: 100
Instructions: Please read the questions carefully.

Case Study

In this era of Internet of Things, life of differently abled persons and elders is more comfortable with the assistant they are provided with. Assume a scenario where, a society has 50 old age houses. Each house has almost structure. Each house is being monitored via embedded sensors. In case of any emergency message is sent to the caregiver. However, to build such a system multiple situations needs to be considered. Based on the given suggestion answer the following questions:

NOTE: Please read all the questions first before answering.

1. List the different cases when caregiver need to be informed. [20 Marks] [CO2]
2. With respect to every case (defined in 1), list the activity that need to be sensed. [20 Marks][CO1]
3. For every activity (listed in the solution of 2), list the sensors or actuators required and why? [20 Marks][CO3]
4. Draw a diagram of the SCADA for the mentioned scenario. [20 Marks][CO5]
5. Provide the formula to calculate the power consumption using listed sensors and actuators. Please note: target is to optimize the power bill. [20 Marks][CO4]