Reg.No. \_\_\_\_\_\_\_\_\_\_\_\_



**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

**End Semester Examination – Nov/Dec – 2016**

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | **Semester :** | **2016-17 ODD** |
| **Code :** | **14EI3019** | **Duration :** | **3hrs** |
| **Sub. Name :** | **Embedded Instrumentation** | **Max. marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Q. No** | **Sub Div** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. | a. | Define Piezo-Electric Effect. Explain how a Piezo-Electric Crystal is used for the  measurement of force with necessary derivations. | CO1 | 16 |
| b. | A 0-50 V Voltmeter is specified to be accurate within +1 % of full scale.  Calculating the limiting error. | CO1 | 4 |
| **(OR)** | | | | |
| 2. | a. | Explain the construction and principle of working of a Linear Voltage Differential Transformer (LVDT). Explain how it will be detect the number of currency bills dispensed by an ATM. | CO1 | 15 |
| b. | Explain the principle of working, constructional details and applications of Photo  Diodes. Draw the characteristics. | CO1 | 5 |
| 3. | a. | With a neat sketch explain the principle and applications of Proximity Sensors. | CO1 | 15 |
|  | b. | List the applications of Potentiometer Sensor. | CO1 | 5 |
| **(OR)** | | | | |
| 4. | a. | Suggest a suitable sensor to detect the movement of the object. The sensor must give an electric signal as output. | CO1 | 15 |
|  | b. | Brief out the operation of a Half-Effect transducer. | CO1 | 5 |
| 5. | a. | Describe are the various programming techniques and recent research achivements adapted for LabVIEW environment. | CO2 | 15 |
|  | b. | Compare and contrast virtual instruments versus traditional instruments. | CO2 | 5 |
| **(OR)** | | | | |
| 6. | a. | Create a VI to compare the elements of two clusters. If the values of orresponding  elements of both the VIs are the same, switch on an LED in the output cluster. | CO2 | 10 |
|  | b. | Roll two dices and display a message “YOU WIN” when the sum of the two results equals 7. | CO2 | 10 |
| 7. | a. | Explain with necessary diagrams for the different memory techniques used in PC systems to speed up memory access? | CO3 | 10 |
|  | b. | Explain the architecture of a suitable bus that is used to overcome the bottleneck problem in ISA buses. | CO3 | 10 |
| **(OR)** | | | | |
| 8. | a. | What are the factors to be considered in designing an AD board when used for any application? Explain with neat sketch. | CO3 | 15 |
|  | b. | Write a Programme to acquire data at the rate of 1 Hz from the ADC | CO3 | 5 |
|  | | **Compulsory:** |  |  |
| 9. | a. | Explain the functions of Pentium Motherboard Chipset Chip with a neat block diagram | CO3 | 20 |

ALL THE BEST