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**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

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

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

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

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| **Code :** | **09EI101** | **Duration :** | **3 hrs** |
| **Sub. Name :** | **Basic Electronics and Instrumentation** | **Max. marks :** | **100** |

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| **Q. No.** | **Questions** | **Marks** |
| **PART-A (10X1=10 MARKS)** | | |
| 1. | When semiconductor is doped half with trivalent and half with pentavalent impurities, junction formed is known as\_\_\_\_\_\_   1. PN Junction b. barrier junction c. potential barrier d. avalanche effect | (1) |
| 2. | In a C-E configuration, an emitter resistor is used for  a. collector base b. stabilization c. ac signal bypass d. higher gain | (1) |
| 3. | Base 10 refers to which number system?  a. Binary b. octal c. hexadecimal d. decimal | (1) |
| 4. | The JK flipflop is in its set mode when input J = \_\_\_\_\_ and input K = \_\_\_\_\_\_\_.  a. 0 and 1 b. 1 and 1 c. 0 and 0 d. 1 and 0 | (1) |
| 5. | List any two static characteristics of measurement. | (1) |
| 6. | What is measurement error? | (1) |
| 7. | Mention any one sensor used to measure temperature. | (1) |
| 8. | Function of transducer is to convert  a.Electrical signal into non electrical quantity b. Non electrical quantity into electrical signal c. Electrical signal into mechanical quantity d. All of these | (1) |
| 9. | |  | | --- | | The difference between analog voltage represented by two adjacent digital codes, or the analog step size, is the:  a. Quantization b. accuracy c. resolution d. monotonicity | |  | | (1) |
| 10. | A galvanometer in series with a high resistance is called ……………   1. An ammeter b. voltmeter c. wattmeter d.None of the above | (1) |

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| **PART-B (5 X 3= 15 MARKS)** | | |
| 11 | Distinguish between: Intrinsic and Extrinsic semiconductor. | (3) |
| 12 | What is a transducer? List the classification of transducer. | (3) |
| 13 | Draw the full adder circuit using logic gates. | (3) |
| 14 | What is measurement? Give the two basic requirements of measurement. | (3) |
| 15 | State the advantages of digital voltmeter over other voltmeter. | (3) |

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| **PART-C(5 X 15= 75 MARKS)** | | | |
| 16. |  | Describe the input output characteristics of common emitter transistor. | (15) |
| (OR) | | | |
| 17. |  | Describe the action of PN junction diode under forward and reverse bias. | (15) |
| 18. |  | Illustrate with examples, how half adder and full adder are used in addition. Explain how full adders are used in parallel adders. | (15) |
| (OR) | | | |
| 19. | a. | Differentiate between: Latch and Flip-flop | (5) |
| b. | Give the operation of SR and D Flip-flop with timing diagram. | (10) |
| 20. |  | Describe the static characteristics of measurement. | (15) |
| (OR) | | | |
| 21. |  | Explain different classification of static errors that occur while measuring the instrument. | (15) |
| 22. |  | Explain the different types of temperature transducer. | (15)  P.T.O |
| (OR) | | | |
| 23. |  | Draw and explain pressure measurement using bourdon tube and LVDT. | (15) |
| 24. |  | Discuss the different types of Analog to digital convertor. Mention pros and cons of each type. | (15) |
| (OR) | | | |
| 25. |  | Explain the construction and operation of galvanometer. | (15) |

ALL THE BEST