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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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|  |  | **Semester :** | **2016-17 ODD** |
| **Code :** | **12EC101** | **Duration :** | **3 hrs** |
| **Sub. Name :** | **BASIC ELECTRONICS** | **Max. Marks :** | **100** |

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| **Q. No.** | **Questions** | **Marks** |
| **PART-A(10X1=10 MARKS)** | | |
| 1. | Mention the value of the resistive sequence Red-Violet-Brown-Gold. | (1) |
| 2. | Inductor stores \_\_\_\_\_\_\_ energy and capacitor stores energy in the form of \_\_\_\_\_\_\_\_\_\_. | (1) |
| 3. | Which diode works well under reverse bias condition? | (1) |
| 4. | How the depletion MOSFET operated as an N-channel enhancement MOSFET? | (1) |
| 5. | Complete the Boolean Law: A+AB =? | (1) |
| 6. | NOR gate is a combination of \_\_\_\_\_\_\_\_\_\_\_\_. | (1) |
| 7. | What are the types of analog modulation? | (1) |
| 8. | What are the advantages of using Frequency modulation over Amplitude modulation? | (1) |
| 9. | Name the three basic sections in a satellite system. | (1) |
| 10. | What is Doppler effect? | (1) |

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| **PART B(5 X 3= 15 MARKS)** | | |
| 11 | Define Q factor of an Inductor. | (3) |
| 12 | Derive the ripple factor of a Half-wave Rectifier. | (3) |
| 13 | Draw the symbol of XOR and XNOR gates. | (3) |
| 14 | Explain briefly the need for modulation. | (3) |
| 15 | What are the advantages of fiber optic communication? | (3) |

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| **PART C(5 X 15= 75 MARKS)** | | | |
| 16. |  | Explain in detail the various types of resistors with necessary diagram. | (15) |
| (OR) | | | |
| 17. |  | Discuss the formation of P type and N type semiconductors with neat diagrams. | (15) |
| 18. |  | Explain the operation of transistor in Common Base Configuration. | (15) |
| (OR) | | | |
| 19. |  | Explain the operation and characteristics of Junction Field Effect Transistor. | (15) |
| 20. | a. | With symbol, electrical equivalent, circuit diagram and its truth table, explain the working of NOT gate. | (5) |
| b. | Design a 4x1 Multiplexer and explain its operation with neat Logic diagram. | (10) |
| (OR) | | | |
| 21. | a. | Simplify using K-map:  F(a, b, c, d)=∑(0,1,2,3,4,5,6,7) | (8) |
| b. | Simplify: A+A’C+BC | (7) |
| 22. | a. | Draw the block diagram of communication system. | (5) |
| b. | Derive the instantaneous voltage equation of Amplitude Modulation. Provide suitable  Waveforms. | (10) |
| (OR) | | | |
| 23. | a. | With block diagram explain about the Amplitude Modulation Transmitter . | (7) |
| b. | Draw the block diagram of superheterodyne receiver and explain its operation. | (8) |
| 24. |  | Briefly discuss about Television Transmitter and Receiver with neat diagram. | (15) |
| (OR) | | | |
| 25. |  | Draw and explain the block diagram of a Radar System and derive the basic Radar equation. | (15) |

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