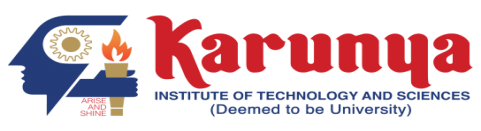
Reg. No. \_\_\_\_\_\_\_\_\_\_\_\_\_



**End Semester Examination – Nov / Dec – 2019**

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| **Code :** | **18EE1003** | **Duration :** | **3hrs** |
| **Sub. Name :** | **BASIC ELECTRICAL AND ELECTRONICS ENGINEERING** | **Max. Marks :** | **100** |

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| **Q. No.** | **Questions** | **Course Outcome** | **Marks** |
| **PART – A (10X1 = 10 MARKS)** | | | |
| 1. | If maximum value of current is 10√2 A, find the value of RMS current. | CO1 | 1 |
| 2. | Obtain the star equivalent for the given delta circuit: | CO1 | 1 |
| 3. | Write the EMF equation of a DC generator. | CO2 | 1 |
| 4. | List the applications of single phase induction motor. | CO2 | 1 |
| 5. | Classify the instruments used to measure the electrical quantities. | CO3 | 1 |
| 6. | Name the instrument used for measuring the wind speed. | CO3 | 1 |
| 7. | Abbreviation of MCB is \_\_\_\_\_\_\_\_\_\_\_\_. | CO4 | 1 |
| 8. | Mention the types of house wiring. | CO4 | 1 |
| 9. | The forward biased characteristics of a zener diode are the same as those of a diode: (True or False) | CO5 | 1 |
| 10. | Choose the most frequently encountered transistor configuration.  a) Common-base b) Common-collector  c) Common-emitter d) Emitter-collector | CO5 | 1 |

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| **PART – B (6 X 3 = 18 MARKS)** | | | | | | |
| 11. | State KCL and KVL. | | CO1 | | | 3 |
| 12. | Summarize the advantages of three phase induction motor. | | CO2 | | | 3 |
| 13. | List the different types of temperature sensors and mention its applications. | | CO3 | | | 3 |
| 14. | Write the consequences of imperfect earthing. | | CO4 | | | 3 |
| 15. | Draw the VI characteristics of a Zener diode. | | CO5 | | | 3 |
| 16. | Implement the following logic expressions using basic gates. | | CO6 | | | 3 |
| **PART – C (6 X 12 = 72 MARKS)**  **(Answer any five Questions from Q.no 17 to 23. Q.No 24 is a Compulsory Question)** | | | | | | |
| 17. | a. | Highlight the important characteristics of series and parallel circuit. | | CO1 | 4 | |
| b. | Determine the current in various resistors in the circuit shown below using Kirchhoff’s laws. | | CO1 | 8 | |
| 18. | a. | Describe the construction and working principle of DC generator with the help of a neat diagram. | | CO2 | 8 | |
|  | b. | A 6 pole lap wound DC Generator has 1000 conductors. The flux /pole is 10 milliwebers. Determine the induced emf in the armature, if it is rotating at a speed of 600 rpm. | | CO2 | 4 | |
| 19. |  | Describe the working principle of induction type Energy meter with a neat diagram. | | CO3 | 12 | |
| 20. | a. | Calculate the energy consumed per month by the following electrical appliances.   |  |  |  |  |  | | --- | --- | --- | --- | --- | | S.No | Name of the Load | Quantity | Wattage | Operating Hours | | 1 | Fluorescent lamp | 7 | 40W | 8 | | 2 | Ceiling Fan | 3 | 60 W | 12 | | 3 | Refrigerator (165 L) | 1 | 100 W | 24 | | 4 | Air Conditioner | 1 | 1500 W | 6 | | 5 | Mixer | 1 | 450 W | 1 | | 6 | LED Television | 1 | 100 W | 7 | | | CO4 | 8 | |
| b. | Draw a neat wiring diagram for staircase lighting and explain its working. | | CO4 | 4 | |
| 21. | a. | Explain the operation of PN junction diode under forward bias condition with its characteristics curve. | | CO5 | 8 | |
| b. | Differentiate between BJT and FET. | | CO5 | 4 | |
| 22. | a. | Explain the various types of temperature sensors. | | CO3 | 8 | |
| b. | State the essential torques required for successful operation of a measuring instrument. | | CO3 | 4 | |
| 23. | a. | Draw the wiring diagram of fluorescent lamp. Describe its working. | | CO4 | 8 | |
|  | b. | Compute the equivalent resistance between the terminals A and B. | | CO1 | 4 | |
|  | **Compulsory:** | | | | | |
| 24. | a. | With truth table, discuss the working of AND, OR and NOT gates. | | CO6 | 6 | |
|  | b. | Convert the binary number (1100)2 into decimal, Octal and Hexadecimal number. | | CO6 | 6 | |