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 – April/May – 2017**

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
| **Code :** | **14EE2001** | **Duration :** | **3hrs** |
| **Sub. Name :** | **ELECTRIC CIRCUITS AND NETWORKS** | **Max. marks :** | **100** |

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Q. No. | Sub Div. | Questions | Course  Outcome | Marks |
| 1. | a. | Calculate the total current flowing into the circuit using delta-star transformation (all resistance are in ohms) | CO1 | 10 |
| b. | Using voltage division rule, compute the voltage across each resistor in the circuit and also calculate the total power. | CO2 | 10 |
| (OR) | | | | |
| 2. |  | Estimate the load current (iL) using thevenin’s theoremC:\Users\hp\Desktop\theev.png | CO3 | 20 |
| 3. |  | State and Prove the reciprocity theorem | CO1 | 20 |
| (OR) | | | | |
| 4. |  | With a neat diagram, Derive the transient response of RC circuit excited with DC. Also find transient current, transient power and charge during i) capacitor charging ii) and capacitor discharging. | CO2 | 20 |
| 5. |  | Obtain the Z parameters for the following circuit and also draw the equivalent circuit of it.Assume V1 and I1 at the input port, V2 and I2 at the output port. | CO3 | 20 |
| (OR) | | | | |
| 6. |  | Use mesh analysis, to find the current through 5 ohm resistor. | CO3 | 20 |
| 7. |  | Vs=3/s+1, R1=12 ohm, L=8s, C=3/s, R2=10ohm. Using nodal analysis, find VT in s-domain. | CO3 | 20 |
| (OR) | | | | |
| 8. | a. | Draw the star and delta connections of 3 Φ system and mark its terminals with parameter also write the condition for line and phase parameter. | CO1 | 6 |
|  | b. | Three impedances, each of having the value of 11.18 ohm are connected in star 3 Φ balanced 400v supply with the power factor 0.89. Find the following parameters both in star and delta connections.    i)phase voltage,  ii) Phase currents,  iii) line currents and  iv) total power. | CO2 | 14 |
|  | | **Compulsory**: |  |  |
| 9. |  | Explain in detail about various filters used in electrical network. Also draw the frequency response for each filter. | CO3 | 20 |

ALL THE BEST