

**ANURAG Engineering College**

(An Autonomous Institution)

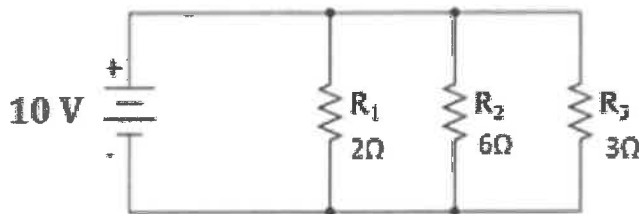
**II B.Tech II Semester Regular Examinations, June/July – 2024  
BASIC ELECTRICAL AND ELECTRONICS ENGINEERING  
(CIVIL ENGINEERING)****Time: 3 Hours****Max. Marks: 60****Section – A (Short Answer type questions)****(10 Marks)****Answer All Questions**

1. State Kirchhoff's current law.
2. Define apparent power.
3. What are the different types of Batteries?
4. Define ELCB
5. What is transformation ratio?
6. What are the applications of three phase induction motor?
7. Write the Diode equation.
8. what is ripple factor of full wave rectifier
9. What is bipolar junction transistor?
10. What is the main function of the Field Effect Transistor?

Course Outcome	B.T Level	Marks
CO1	L1	1M
CO1	L1	1M
CO2	L1	1M
CO2	L1	1M
CO3	L1	1M
CO3	L1	1M
CO4	L1	1M
CO4	L1	1M
CO5	L1	1M
CO5	L1	1M

**Section B (Essay Questions)****Answer all questions, each question carries equal marks.****(5 X 10M = 50M)**

11. A) i) State and explain KCL and KVL.  
ii) Calculate the (i) Equivalent Resistance (ii) Total Current of the following Electrical Circuit

**OR**

- B) Derive the equation for Average Value and RMS Value of alternating quantity
12. A) Explain the different types Earthing with neat sketch and its importance.
- OR**
- B) Explain the following devices MCB, ELCB & MCCB
13. A) **Draw** the construction of DC Generator with neat sketch and Explain each part
- OR**
- B) Explain the working principle of single phase transformer with neat sketch.

CO1	L2	5M
CO1	L3	5M
CO1	L3	10M
CO2	L2	10M
CO2	L2	10M
CO3	L3	10M
CO3	L2	10M

14. A) i) With a neat diagram explain the working of a PN junction diode. CO4 L3 5M  
ii) Give the difference between N-type semiconductor and P-type semi-conductor. CO4 L2 5M
- OR**
- B) Explain the principle and operation of Bridge rectifier with neat sketch. CO4 L2 10M
15. A) **Explain** the Characteristics of CB configuration with neat circuit diagram. CO5 L3 10M
- OR**
- B) Write the comparison between BJT and FET CO5 L2 10M