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**200922**

**DIPLOMA**  
**Piping Technology**  
**Subject: Basic of Electrical and Electronics Engineering**  
**Subject Code: EE-501**  
**Semester: Second**  
**September 2020**  
**Theory (External): 35 Marks**  
**Time: 03 Hours**

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**INSTRUCTIONS TO THE STUDENTS**

1. Read the questions carefully and write the answers in the answer sheets.
2. Wherever necessary, the diagram drawn should be neat and properly labelled.
3. This questions paper comprises of 8 questions out of which student need to attempt any 4 questions.
4. All questions carry equal marks.
5. The time allotted will be 3 hours for examinations including time of downloading of question paper to emailing of answer books to the concerned Dean/IC.

## ESSAY TYPE QUESTIONS

1. Two batteries are connected in parallel and load of 10ohm is connected across its terminals. A has an emf of 12V with an internal resistance of 2 ohm and B has an emf of 8 V with an internal resistance of 1 ohm. Calculate the magnitude of current in each branch.
2. Explain the principle and operation of single phase transformer
3. (a) Write down the rules for source transformation in circuit analysis.  
(b) Derive the equation for emf of a DC generator from the basic principles
4. Compare star connection with the delta connection in reference to a three phase system
5. A 6 pole, 50 Hz Induction motor has a speed of 970 rpm on full load. Calculate a) percentage slip b) frequency of emf induced in rotor
6. Write an explanation note on protective devices and safety precautions
7. Explain and draw V-I characteristics of P-N junction in Forward and Reverse bias
8. Write short note on the following:
  - a) Zener diodes and their applications
  - b) Thyristor diodes

\*\*\*\*\*End of Paper\*\*\*\*\*