



C14-EC-306

4242

**BOARD DIPLOMA EXAMINATION, (C-14)
MARCH/APRIL—2018
DECE—THIRD SEMESTER EXAMINATION
ELECTRICAL TECHNOLOGY**

Time : 3 hours]

[Total Marks : 80

PART—A

3×10=30

Instructions : (1) Answer **all** questions.

(2) Each question carries **three** marks.

(3) Answers should be brief and straight to the point and shall not exceed *five* simple sentences.

1. Define lower cut off and upper cut off frequencies.
2. Draw the characteristic curves for series resonance.
3. State Lenz's law.
4. Explain the significance of back EMF in DC motors.
5. Draw delta configuration diagram and label line and phase values.
6. State voltage transformation ratio of a transformer.
7. List the important specifications of a transformer.

- * 8. Mention the losses in a DC motor.
9. Define the term slip of an induction motor.
10. What is the equation of induced EMF of an alternator?

PART—B

10×5=50

Instructions : (1) Answer *any five* questions.

(2) Each question carries **ten** marks.

(3) Answers should be comprehensive and the criterion for valuation is the content but not the length of the answer.

11. Calculate the impedance, current, phase angle, power and power factor for RC circuit with phasor diagram.
12. An inductive circuit of resistance 2 ohms and inductance of 0.01 H is connected to a 250 V, 50 Hz supply. What capacitance placed in parallel with it, will produce resonance? Find the total current taken from the supply and the current in each branch of the circuit.
13. Explain the constructional features of DC generator with a neat sketch.
14. Explain the working of a 3-point starter with a neat circuit.
15. Explain how power from a power plant reaches the consumer with a line sketch.
16. Derive the EMF equation of a transformer.
17. Explain the working principle of (a) an alternator and (b) a universal motor. 5+5
18. (a) List the applications of synchronous motor. 4
 (b) State dynamically and statistically induced EMF. 6
