* **4242**

BOARD DIPLOMA EXAMINATION, (C-14)
MARCH/APRIL-2019
DECE - THIRD SEMESTER EXAMINATION
ELECTRICAL TECHNOLOGY

Time: 3 Hours] [**Max. Marks: 80**

PART-A

3x10=30M

Instructions: 1) Answer **all** the questions and each question carries **three** marks.

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

1. Draw the series RLC Circuit and write expression for resonance frequency and impedance at resonance.

2. State the conditions for parallel resonance.

3. State Flemming's right hand rule.

4. List the losses in DC motors.

5. List the diffrent types of power plants.

* 6. Give the relation between line voltage, phase voltages and line current, phase currents in Delta configuration.

7. Mention the reasons for using laminations in transformer core.

8. What is meant by regulation of a transformer?

9. Compare synchronous motor and induction motor.

10. Mention the basic principle of a n Alternator.

*

Instructions: 1) Answer any **five** questions and each question carries **ten** marks.

2) The answers should be comprehensive and the criteria for valuation is the content but not the length of the answer.

3) Any missing data may be assumed as per standards.

11. A coil of 90Ω resistance, 0.5H inductane is connected in parallel with 20μf capacitor find (i) current drawn from supply (ii) power factor of the combination (iii) power loss (iv) current through coil (v) current through capacitor when the circuit is connectd across 230V, 50HZ supply.

12. Derive the Expression for impedance, current, power for series RLC circuit with AC supply and also draw impedance, voltage triangles for the circuit.

13. Explain the working of DC generator with neat diagram.

14. (a) Explain how speed of a DC shunt motor is controlled using flux control method. 5M

(b) A 230V DC shunt motor takes 5A at no load and runs at 100 r.p.m, calculate the speed when load current is 30 A. The armature resistance and field resistance are 0.2Ω and 230Ω respectively.

5M

15. Explain the principle operation of Hydro Electric power station with a neat sketch.

* 16. A 4 KVA 200/400 V, 50HZ single phase transformer gave the following test results. OC test: 200V, 0.7A, 60W (L.V data) SC test : 9V, 6A, 21.6W (HVdata).Draw the equivalent circuit reffered to LV side. And also find secondary terminal voltage at full load 0.8pf lag.

17. Explain how copper is saved in Auto transformer.

18. List different parts in Alternator and explain them.

* * *