4 2 3 2

C14-CM–302

4232

BOARD DIPLOMA EXAMINATION, (C-14)

JUNE—2019

DCME - THIRD SEMESTER EXAMINATION

BASIC ELECTRICAL AND ELECTRONICS ENGINEERING

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. Distinguish between conductor, insulator and semiconductor.

2. Define temperature coefficient of resistance.

3. State limitations of Ohm's law.

4. Three resistances of $10\Omega, 20\Omega$ and 30Ω are connected in star connection. Find their equivalent delta values.

5. State Faraday's laws of electro-magnetic induction.

6. Define (i) resistance (ii) capacitance

7. Distinguish between P-type and N-type semiconductors.

8. List the applications of transistors.

9. Draw the symbols of diode, NPN transistor.

10. What is the need of UPS?

PART—B

10×5=50

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

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

(3) Answer should be comprehensive and the criteria for the valua
- tion are the content but not the length of the answer.

11. *(a)* Derive the expression for resistances in series (three resistances)

(b) Three resistances $15\Omega, 20\Omega$ and 35Ω are connected in parallel across a supply voltage of 150 V. Find *(i)* The total resistance *(ii)* The current through each resistor *(iii)* The voltage in 15Ω resistance.

12. *(a)* Define temperature coeffcient of cesistance. Explain the effect of temperature on resistance.

(b) The resistance of copper coil at 30°C is 50Ω and at 100°C is 80Ω. Find the temperature coefficient of resistance.

13. Develop the transformation formulae for star-delta transformation.

14. Explain dynamically and statically induced E.M.F. Write their appli cations.

15. (a) Classify different capacitors on the basis of dielectric materials.

(b) List different types of transformrs used in electronic engineering and write their applications.

16. (a) Explain the formation of PN junction Diode.

(b) Write the basic constructional features of a Tranistor.

17. (a) State Kirchoff's laws.

(b) Write the concept of Energy stored in a magnetic field.

18. (a) List the configurations of transistors and write their applications.

(b) write the working principle of UPS with block diagram.

* * *