4232

BOARD DIPLOMA EXAMINATION, (C-14)

MARCH /APRIL-2019

DCME - THIRD SEMESTER EXAMINATION

BASIC ELECTRICAL & ELECTRONICS ENGINEERING

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

PART-A

3x10=30M

Instructions: 1) Answer **all** questions. Each question carries **three** marks.
2) Answer should be brief and straight to the point and shall not exceed five simple sentences.

1) State Ohm's law.

2) Find the specific resistance of 60 cm length copper wire whose resistane is 0.1 Ω having a diameter 0.2 mm.

3) Differentiate between active and passive circutis.

4) Three resistances of 6 , 4 and 3 are connected in delta connection. Find their equivalent star values.

5) State Fleming's right hand rule.

6) List the resistors on the basis of materials for their construction.

7) Distinguish between conductor, semi-conductor and insulator on the basis of valance electron.

8) List the applicaions of semiconductor diodes.

9) Draw the I.S.I symbols of PNP and NPN Transistors.

10) List different types of stabilizer?

PART-B

5x10=50M

Instructions: 1) Answer any **five** questions. Each question carries **ten** marks.
2) The answers should be comprehensive and the criteria for valuation is the content but not the length of answer.

11) (a) Derive the Expression for Resistances in paraller (Two Resistances)
(b) Three Resistances 15 , 10 and 8 are connected in parallel across a supply voltage of 120 V. Find (i) The Resistance (ii) The current through each resistor (iii) The voltage in 8 resistance. (5+5)

12) (a) Develop the formula for resistance at any temperature $Rt=R_o(1+\alpha_o t)$
(b) The resistance of copper coil at 15^0C is 25 and at 75^0C is 30 . Find the Temperature Cofficient of Resistance at 0^0C (5+5)

13) (a) State Kirchhoff's current law, and Voltage law.
(b) Three resistances R_1, R_2 and R_3 are connected in Delta. Derive their equivalent star resistances. (5+5)

14) (a) Explain the concept of self and mutural inductances.
(b) State (i) Lenz's law (ii) Fleming's left hand rule. (5+5)

15) (a) Distinguish between Potentiometer and Rheostat and write their uses.
(b) State PTC and NTC resistors and write their applications. (5+5)

16) (a) Write any five differnces between P-type N-type semiconductiors.
(b) Describe the operation of PN junction with forward bias. (5+5)

17) (a) Expalin junction, brance and loop in circuits.
(b) State Co-efficient of coupling. (6+4)

18) (a) Describe the atomic structure of Germanium, silicon semi-conductor materials.
(b) Write brief notes on Maintencance Free batteries. (6+4)

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