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C14-CM-302

4232

BOARD DIPLOMA EXAMINATION, (C-14)
OCT/NOV—2015
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. Write limitations of Ohm's law.
2. Two resistances of 10 and 15 are connected in series. Calculate the total current flowing through the circuit, when a p.d. of 200 V applied across the circuit.
3. Define (a) loop, (b) branch and (c) junction.
4. Write transformation formula of delta-star network.
5. Define coefficient of coupling.
6. Define specific resistance and write its units.
7. Write short notes on intrinsic and extrinsic semiconductor.

- * 8. Define (a) forward bias and (b) reverse bias.
9. Define transistor and draw its circuit diagram with NPN configuration.
10. Classify the stabilizer.

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. Derive an expression for total resistance when three resistances R1, R2 and R3 are connected in (a) series and (b) parallel.
12. (a) What do you mean by (i) Resistance (ii) Resistivity, (iii) Conductance and (iv) Conductivity?
(b) Mention the factor on which resistance of a material or conductor depends.
13. Develop transformation formula of delta-star configuration.
14. (a) State and explain Kirchhoff's voltage law and current law.
(b) State Faraday's laws of electromagnetic induction.
15. Derive an expression for lifting power of a magnet.
16. (a) List the different types of resistors.
(b) Distinguish between potentiometers and rheostats.
- * 17. What is P-N junction diode and explain its V-I characteristics with various bias conditions.
18. (a) Write short notes on P and N-type semi-conducting materials.
(b) Explain working principle of stabilizer with block diagram.
