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C09–CM–303

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BOARD DIPLOMA EXAMINATION, (C–09)

OCT/NOV—2015

DCM—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. State and explain Ohm's law.

2. Define *(a)* junction, *(b)* branch and *(c)* loop.

3. State and explain KVL.

4. Define peak factor.

5. What are the features of series resonant circuit?

6. State the specifications of AF choke.

7. Explain the principle of a transistor.

8. State the specifications of *p-n* junction diode.

9. Draw the approximate equivalent circuit for CB configuration.

10. State the need of stabilizers.

PART—B

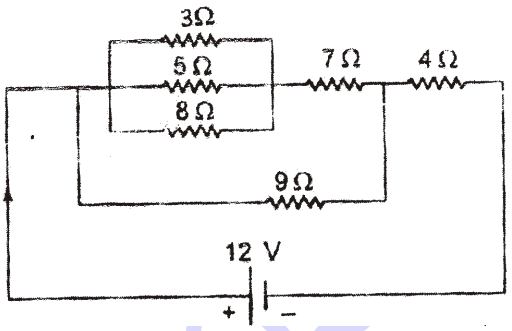
10×5=50

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

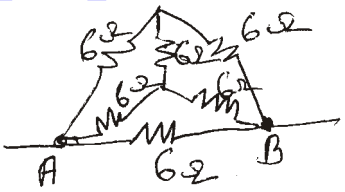
(2) Each question carries **ten** marks.

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

11. Find the current through 4 resistance of the circuit shown below :



12. Find the equivalent resistance the between points A and B of the circuit shown using star/delta transformation :



13. *(a)* State and explain Faraday's laws of electro-magnetic induction.

(b) Two coils A of 1000 turns and B of 2000 turns are tightly wound over the wooden ring which has a mean length of 60 cm and a cross-sectional area of 30 cm^2. Find the mutual inductance between the coils.

14. *(a)* Distinguish between potentiometer and rheostats.

(b) Classify the resistors based on composition.

15. Describe the operation of *p-n* junction with forward, reverse bias and no bias.

16. Explain the atomic structure of silicon and germanium.

17. List the types of transistor configurations and explain any one.

18. Explain the working principle of UPS with a neat block diagram.

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