



C09-CM-303

3229

BOARD DIPLOMA EXAMINATION, (C-09)

MARCH/APRIL—2017

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. How much current flows through a conductor of resistance 20 ohms when it is supplied with a p.d of 200 V?
2. Three resistances of 10 , 15 and 25 are connected in delta. Find out the equivalent star values.
3. State and explain KCL.
4. Define Q-factor of resonance circuit.
5. Define (a) phase and (b) phase difference.
6. Classify the transformers used in electronic engineering.
7. Draw the symbol of *n-p-n* transistor and *p-n-p* transistor and specify the leads.
8. Draw the energy band diagram of insulators.
9. Write a short note on *N*-type of semiconductor.
10. What are the specifications of UPS?

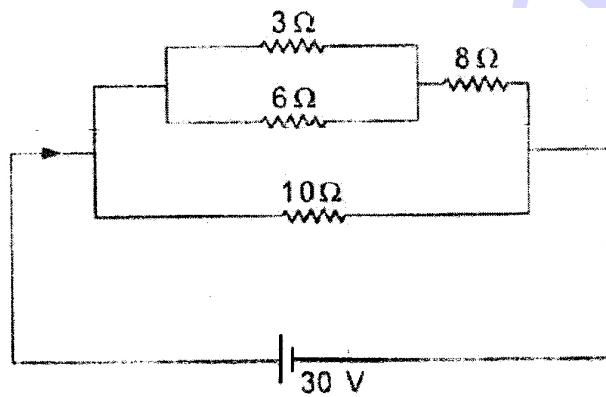
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PART—B

10×5=50

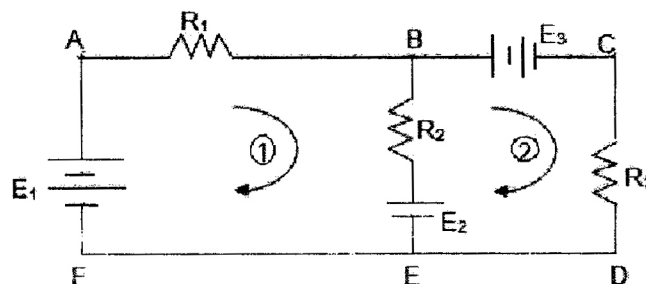
- Instructions :** (1) Answer *any five* questions.
(2) Each question carries **ten** marks.
(3) Answers should be comprehensive and the criterion for valuation is the content but not the length of the answer.

11. Calculate the current through each resistor and also total current of the circuit shown below :



12. For the network shown below, find the number of

- (a) junctions
- (b) loops
- (c) active element
- (d) passive element



- * 13. A coil of 2000 turns is wound on a torodial magnetic core having a reluctance of 10^5 At/Wb. When the coil current is 5 A and is increased at a rate of 150 A/s, determine (a) inductance of coil, (b) energy stored in the magnetic field and (c) e.m.f. induced in the coil.
14. How to evaluate the resistance value by colour coding?
15. List the types of transistor configurations and explain any one.
16. (a) Draw the approximate equivalent circuit for CB configuration.
(b) Derive the expression for collector current in CB configuration.
17. What is the effect of temperature on the forward bias and reverse bias characteristics of diode?
18. Explain the working principle of stabilizer with a neat block diagram.
