2572

Code : 15EC-11T

Register Number | | | | | | | |

I Semester Diploma Examination, Nov./Dec. 2015

BASIC OF ELECTRICAL & ELECTRONICS ENGINEERING

Time : 3 Hours] **[Max. Marks : 100**

Note : (i) Answer any **six** questions from Part-A.

(ii) Answer any **seven** full questions from Part-B.

PART – A

1. Define power and energy along with their units. 5

2. State and explain Kirchoff's current law. 5

3. Define charge and field strength. 5

4. State Lenz's law. 5

5. Define r.m.s. and average value of AC signal and write their equations. 5

6. Describe AC behaviour in pure capacitive circuit. 5

7. Describe step-up and step-down transformers. 5

8. List and explain specifications of resistors. 5

9. Classify capacitors based on dielectric materials used and write one application each. 5

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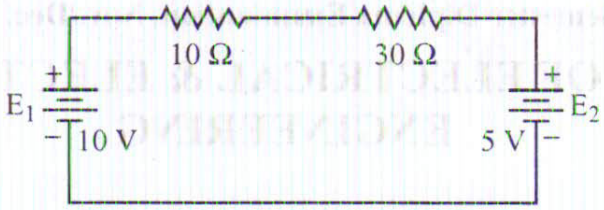
PART – B

10. (a) Develop an expression for total resistance of three resistances connected in parallel. 5

(b) Compute current through the resistor 10 Ω in the following circuit. 5



11. Explain constructional features of lead-acid battery. 10

12. Discuss series and parallel combination of capacitors. 10

13. (a) State and explain Faraday's second law of electro-magnetic induction. 6

(b) Define inductive reactance and quality factor. 4

14. (a) Analyze AC behaviour in RC circuit. 6

(b) A circuit consist of resistance of 10 Ω, inductance of 0.2 H and capacitance of 10 μF with a 50 Hz supply AC source. Compute impedance. 4

15. A resistance of 20 Ω and an inductance of 10 H are connected in series to an AC supply of 100 V, 50 Hz. Compute : 10

(i) impedance

(ii) current

(iii) power factor

16. (a) Describe working principle of auto transformer. 5

(b) Calculate EMF induced in the secondary of transformer of 100 turns, when the primary is operating on 50 Hz supply produces a maximum flux of 0.04 webers. 5

17. (a) Describe operation of DC motors. 7

(b) List applications of pulse transformer. 3

18. (a) Explain principle of operation of VDR. 6

(b) List specifications of inductors. 4

19. (a) Describe principle of operation of linear thermistor. 6

(b) List features of linear potentiometer. 4