

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(CIVIL/EE) (Sem.-1,2)

BASIC ELECTRICAL AND ELECTRONICS ENGINEERING

Subject Code : EE-101

M.Code : 54007

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION - B & C. have FOUR questions each.
3. Attempt any FIVE questions from SECTION B & C carrying EIGHT marks each.
4. Select atleast TWO questions from SECTION - B & C.

SECTION-A

I. Write short notes on :

- a) State Ohm's Law.
- b) Define work and power.
- c) What do you mean by effective value? Discuss.
- d) What do you mean by self-inductance? Explain.
- e) List the advantages and disadvantages of moving coil instruments.
- f) Explain the need of transducers.
- g) Discuss the principle of thermistor.
- h) How Zener diode is different from ordinary diode?
- i) What is the significance of truth table? Discuss.
- j) List the significance Flip flop.

SECTION-B

2. Two cells having emf of 10 V and 8V, and internal resistance of 1Ω (each) are connected as shown with an external resistance of 8Ω . Find the current flowing in different branches of the circuit using Kirchhoff's laws.

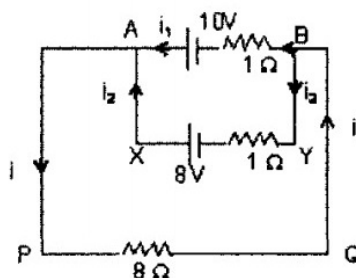


FIG.1

3. A series RLC circuit has $R = 10\Omega$, $L = 0.1\text{ H}$ and $C = 8\text{ }\mu\text{F}$. Determine
- Resonant frequency
 - Q factor of the circuit at resonance
 - The half power frequencies
4. Describe the principle and working of attraction and repulsion type moving iron instruments.
5. Explain the construction and working of a single-phase transformer in detail. Also discuss its applications.

SECTION-C

6. Explain the construction and principle of working of inductive and capacitive transducers. 8
7. Explain the principle of operation and characteristics of FET. Also discuss its applications. 8
8. Explain the following :
- 74XX series ICs 4
 - Binary, octal and hexadecimal number system 4
9. Draw the logical diagram and discuss each and every state of RS and D flip flops. 6,2

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.