Roll No. | | | | | | | | | | | | |

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech. (2011 to 2017) (Sem.–1,2)

BASIC ELECTRICAL AND ELECTRONICS ENGINEERING

Subject Code : BTEE-101

Paper ID : [A1104]

Time : 3 Hrs. Max. Marks : 60

INSTRUCTION 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

1. Answer following questions :

a) Write the statement of Ohm's law with its limitations.

b) State and explain Kirchoff s voltage law.

c) Explain the behaviour of AC through a series RL circuit.

d) Write the voltage and current relations between line and phase values for star and delta connected three phase AC systems.

e) Give four major differences between Induction and synchronous motors.

f) Explain the working principle of a thermistor.

g) Differentiate between a PN junction and a Zener diode.

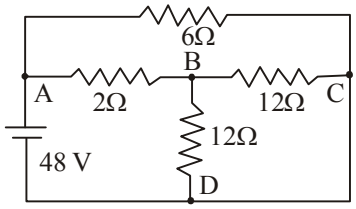
h) Differentiate between BJT and FET.

i) Convert the decimal number 2018 into octal and hexadecimal numbers.

j) Draw an AND gate using NAND gate.

SECTION-B

2. Find the currents in each branch and power delivered from the source in the circuit shown.



3. Define the average value of alternating current having sine wave and derive its expression. Derive the relation for resonance condition in a series RLC circuit.

4. Give the classification of transformers on the basis of voltage ratio, construction and application. Derive the EMF equation of a single-phase transformer from basic rules.

5. Explain the construction of a DC generator with neat sketch. Write its EMF equation.

SECTION-C

6. Discuss the working principle and applications of strain gauge and digital multimeter.

7. Explain the operation of a single-phase diode bridge rectifier with the help of circuit diagram and waveforms.

8. Draw the basic characteristics of a BJT. Discuss its operation in common base mode.

9. What is a flip flop? Compare the operations of D and T flip-flops with the help of their truth table.