

S.B. Roll No.....

**ELEMENTS OF ELECTRICAL AND ELECTRONICS ENGINEERING/BASIC OF ELECTRICAL AND
ELECTRONICS ENGG**
**3rd Exam/Mech/RAC/Prod/Auto/Chem/T&DM/Aero/0532/0353/5341/0565/0656/0932/
Nov' 2016**

Duration: 3hrs.

M. Marks: 75

SECTION A

Q1. Fill in the blanks: -

1.5x10=15

- a. The current which changes in magnitude and direction is called.....
- b. kWh is the unit of.....
- c. The property of coil due to which it opposes the change of current through it is called.....
- d. Form factor is defined as the ratio ofand.....
- e. The maximum value of p.f in an a.c circuit can be.....
- f. A fuse is adevice.
- g. The basic purpose of earthing is to.....
- h. A crystal diode acts as a/an.....switch.
- i. With the rise in temperature the electrons of the valence band of a semiconductor are lifted to.....band.
- j. At start, the slip of an induction motor is.....

SECTION B

Q2) Attempt any five questions: -

5x6=30

1. What is the difference between A.C and D.C?
2. State the precautions to be observed in the maintenance of lead acid batteries?
3. Describe the transistor action detail.
4. Explain 3 phase, 4 wire distribution systems and mention the relationship between phase voltage and line voltage in case of star and delta connections.
5. Enumerate the various losses of a transformer. Explain how two losses vary with load in transformer.
6. State faradays law of electromagnetic induction. State the rule/law to determine the direction of electromagnetically induced emf.
7. Define the following terms
 - a. (a) Peak value
 - (b) Average value
 - (c) R.M.S value
8. What is power factor? Discuss the practical importance of power factor.

SECTION C

Q3) Attempt any three questions: -

3x10=30

1. (a) Draw the circuit diagram of full wave rectifier and explain its working?
(b) What are the advantages of 3 phase system over single phase system?
2. (a) Why it is necessary to provide earthing in an electrical installation?
(b) Explain any one type of earthing with neat diagram.
3. How will start 3 phase induction motor with the help of star delta starter? Explain.
4. (a) Describe P and N type semiconductors?
(b) Mention at least five applications of thyristor.
5. Write short note on any two
 - (a) Single phase induction motor
 - (b) Cooling transformer
 - (c) Fuse