





**(ENGLISH)**

[ TIME ALLOWED—3 HOURS ]

(MARKS—100)

**BASIC ELECTRICAL AND ELECTRONICS ENGINEERING (THEORY-II)****Marks**

1. (a) Fill in the blanks :—

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(i) The function of a fuse is based on the ..... effect of the current.

(a) heating                      (b) magnetic                      (c) lighting

(ii) The space around a magnet in which its magnetic effect exists is called .....

(a) magnetic field    (b) field dencity    (c) magnetic line.

(iii) ..... metal use for making bulb filament.

(a) Tungsten                      (b) Copper                      (c) Zink

(iv) Average value of A.C. circuit is .....

(a) 0.707                      (b) 0.637                      (c) 746

(v) ..... are same in series circuit.

(a) Resistance                      (b) Current                      (c) Voltage

(b) Match the pairs :—

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' A ' Group

' B ' Group

(i) Frequency

(a) joule

(ii) Work

(b) Hz

(iii) Energy

(c) Ampere

(iv) Resistance

(d) Voltage

(v) Current

(e) Kwh

(f) Ohms.

(c) State whether *true* or *false* :—

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(i) When a transformer works at its maximum effeiciency then its copper loss is equal to its iron loss.

(ii) A CRO can be used for frequency measurement purpose.

(iii) In the tube light circuit capacitors is used to improve the power factor.

(iv) In electric work mostly electrolyte capacitors are used for improving power factor.

(v) The colors of 47 k. resister are yellow, violet and red.

(d) State the long form :—

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(i) MCB

(ii) FET

(iii) CRO

(iv) LED

(v) ELCB.

[ turn over

2. Answer the following (any *two*) :— 16
- (a) Why earthing is necessary in electric installation.
  - (b) Explain losses produce in transformer.
  - (c) Explain construction and working of DIAC.
  - (d) What is the use of lead acid batteries ?
3. Answer the following (any *two*) :— 16
- (a) Explain difference between primary and secondary cell.
  - (b) Explain sodium vapour lamp with figure.
  - (c) Explain construction and working of DIAC.
  - (d) Explain mercury vapour lamp with figure.
4. Answer the following (any *two*) :— 16
- (a) Explain construction and working of OP-AMPS application.
  - (b) Explain different methods use for transformer cooling.
  - (c) Write any ten I.E rules.
  - (d) Explain V-I characteristics of full wave rectifier.
5. Answer the following (any *four*) :— 16
- (a) What is Lenz's law ?
  - (b) What is mutual induction ?
  - (c) Explain supply polarity test in brief.
  - (d) What is fuse ? And explain its types.
  - (e) What is self induction ?
6. Answer in brief (any *two*) :— 16
- (a) What things are thoughtful to decide the wiring method ?
  - (b) Why megger testing is necessary before giving supply to new wiring installation ?
  - (c) What is earthing and explain one type of earthing with figure.
  - (d) What is the advantage of connection two transformers in parallel in the electrical distribution system ?
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