

Full Marks: 80

Answer any five Questions including Q No.1& 2  
Figures in the right hand margin indicates marks

Time- 3 Hrs

1. Answer All questions

2 x 10

- a. Define (i) Amplitude factor (ii) Kirchhoff's Current Law
- b. What are the differences between DC and AC supply?
- c. Write any two merits of full wave bridge rectifier.
- d. Why is the average value of sinusoidal signal calculated in half cycle?
- e. State any two uses of integrated circuits.
- f. A resistor of 6 ohm and an inductive reactance of 8 ohm are connected in series to a 250V, 50Hz supply. Calculate the current flowing in the circuit network.
- g. What do you mean by photoconductive transducer?
- h. Classify different types of Transistor configuration.
- i. What do you mean by star rating concept of home appliances?
- j. What do you mean by electron emission? Give an example

2. Answer Any Six Questions

6 x 5

- a. What are the main parts and principle of operation of DC generator?
- b. Describe the alternating current (AC) through pure capacitance with phasor diagrams. <https://www.sctevtonline.com>
- c. Explain the working of Super heterodyne Radio Receiver briefly.
- d. A shunt generator delivers 450 A at 230 V and the resistance of the shunt field and armature are 50  $\Omega$  and 0.03  $\Omega$  respectively. Calculate the generated EMF.
- e. Describe about the MI type measuring instruments briefly.
- f. Write a short note on Mercury Vapour Lamp with a neat diagram.
- g. Briefly describe the operating principle of LVDT with a neat diagram

3. Calculate the electricity bill amount for a month of 30 days, if the following devices are used as specified :

10

- (i). 3 Bulbs of 40 W for 6 h/day
- (ii). 2 Tube lights of 50 W for 8 h/day
- (iii). 2 computers of 40 W for 6 h/day
- (iv). 2 fans of 70 W for 8 h/day

Given, the cost of electricity is Rs. 2.5/unit

- 4 ✓ Write a short note on 10
  - (i) Basic protective devices used in house hold wiring
  - (ii) Single phase Transformer
- 5 Describe about the Radio Transmitter & Receiver along with their block diagrams. 10
- 6 ✓ Explain about the nuclear powerplant in details with a neat diagram. 10
- 7 Write a short note on (i) Zener Diode (ii) Bourden tube diaphragm 10