

Roll No.

Total No. of Questions : 09]

[Total No. of Pages : 02

Paper ID [A0301]

(Please fill this Paper ID in OMR Sheet)

B.Tech. (Sem.- 3rd)

ELECTRONIC DEVICES AND CIRCUITS (EC-201)

Time : 03 Hours

Maximum Marks :60

Instruction to Candidates:

- 1) Section - A is **Compulsory**.
- 2) Attempt any **Four** questions from Section - B.
- 3) Attempt any **Two** questions from Section - C.

Section - A

Q1)

(10 × 2 = 20)

- a) What will be the PIV of non-conducting diode if V_m is the peak voltage across secondary of the transformer in a half-wave rectifier?
- b) What is radiative recombination in LED?
- c) Which amplifier configuration is most popularly used and why?
- d) Define photosensitivity of a photo transistor?
- e) How does MOSFET differ from JFET?
- f) What happens to the drain current of a p-channel JFET when a positive voltage is applied on its gate?
- g) What are the limitations in selecting operating region in a transistor circuit?
- h) What do you understand by thermal runaway?
- i) Why common collector amplifier called emitter follower?
- j) Define $h_{11} = \frac{V_i}{I_i} / V_o = 0$

Section - B

(4 × 5 = 20)

- Q2)** Show that rectification efficiency for a full wave rectifier is 81.2%?
- Q3)** What is LED? Discuss its advantages, disadvantages and applications?
- Q4)** Describe construction and working of UJT? Also draw its characteristics.
- Q5)** Discuss h-parameter equivalent circuit of a transistor?
- Q6)** Describe construction, working and characteristics of MOSFET.

Section - C

(2 × 10 = 20)

- Q7)** (a) Why there is a need for bias stabilization?
(b) Explain working of emitter bias circuit.
- Q8)** (a) Discuss analysis of transistor amplifier using h-parameter in CE configuration.
(b) What will the affect of coupling capacitor on frequency response of an amplifier?
- Q9)** Describe analysis of emitter follower using Miller's theorm?

