

- (d) What are the advantages of negative feedback in amplifiers ? 3
- (e) Write short notes on the following : 3
- (i) OLED's
 - (ii) Plasma Display
 - (iii) Photosensors.

Roll No.

Total Pages : 04

Sep-21-00032

B. Tech. EXAMINATION, 2021

Semester III (CBCS)

ANALOG ELECTRONICS (ECE, EEE)

EC-301

Time : 2 Hours

Maximum Marks : 60

The candidates shall limit their answers precisely within 20 pages only (A4 size sheets/assignment sheets), no extra sheet allowed. The candidates should write only on one side of the page and the back side of the page should remain blank. Only blue ball pen is admissible.

Note : Attempt *Four* questions in all, selecting *one* question from any of the Sections A, B, C and D. Q. No. 9 is compulsory.

Section A

1. (a) Define the load-line and Q-point in diode circuit. 7.5
- (b) What is Schottky diode ? Explain its working, characteristics and applications. 7.5

2. Draw the circuit diagram for common emitter transistor configuration. Sketch its h -parameter equivalent circuit and find its current gain and input resistance. 15

Section B

3. Draw the neat-labelled diagram of two-state RC coupled amplifier and define reason for falling of gain in low and high frequency ranges. 15
4. Sketch hybrid- π model of CB amplifier. Derive relation of gain, input and output impedances. 15

Section C

5. (a) Define working principle of push-pull amplifier and explain its advantages and disadvantages. 7.5
(b) Explain in detail about single tuned amplifier. 7.5
6. (a) What is boot-strapping technique in amplifiers ? Describe its advantages. 7.5
(b) What do you mean by tuned amplifiers ? List the advantages and disadvantages of tuned amplifiers. 7.5

Section D

7. (a) Explain how negative feedback in an amplifier helps in reducing the distortion and helps in stabilizing the gain. 7.5
(b) Describe the working of LED. Explain its biasing and applications. 7.5
8. (a) Derive the expression for input impedance and output impedance for the current series and current shunt feedback amplifiers. 7.5
(b) Compare a phototransistor and photodiode. Name some of the application of a phototransistor. 7.5

(Compulsory Question)

9. (a) What are the different coupling schemes used in multistage amplifiers ? 3
(b) What is the difference between cascade and cascode amplifier ? 3
(c) What are the different types of feedback amplifier topologies ? 3