

Electronic Circuits and Devices
(EC-201, Dec-07)

Section-A

- 1). a). Discuss the behavior of p-n junction diode under forward and reverse biased conditions.
- b). Draw circuit diagram for CC and CE configuration of transistor. Which is having higher gain and why.
- c). State advantages of JFET over BJT.
- d). What is operating point? Why is it necessary to stabilize operating point of a transistor amplifier?
- e). What do you understand by class A,B and C power amplifiers.
- f). Draw the block diagram of a multistage amplifier having n-stages. Write expression for its gain (A).
- g). State advantages of –ve feedback in amplifiers.
- h). What is an oscillator? What are the essential components of feed back LC oscillator?
- i). Differentiate between photo diodes and photo transistor.
- j). Define term junction capacitance. Name different type of capacitances diode posses.

Section-B

- 2). Define stability factor. Explain with circuit diagram of potential divider method of biasing in amplifiers.
- 3). Draw the circuit diagram of a push pull amplifier. Explain its operation. Discuss advantages and disadvantages.
- 4). What do you mean by coupling of two amplifier stages. Explain with requisite circuit diagrams the resistance-capacitance coupling scheme.
- 5). Draw the block diagram of negative feed back amplifier. Derive an expression for the voltage gains of an amplifier of gain (A) when subjected to negative feedback (B).
- 6). Explain the principal of working of transistor Hartley oscillator. Draw circuit diagram and briefly function of each component.

Section-C

- 7). Define h-parameters. Derive expression for
 - (a) Voltage gain
 - (b) Current gain
 - (c) Input resistance
 - (d) Output resistance of CE amplifiers using h-parameters
- 8). (a) Draw labeled diagram showing constructional features of N-channel MOSFET. Explain principle and working of N-channel MOSFET in briefly explain.
(b) Distortion in amplifier circuits.
- 9). Write short notes on two of the following:-
 - (a) Thermal runaway
 - (d) PIN Diodes
 - (c) Effect of –ve feed back on output resistance of an amplifier.