

I B. Tech I Sem Supple & II Sem Regular Examinations, June, 2015
Fundamentals of Electronics Engineering
(Common to ECE, EEE, CSE, BME, IT)

Time: 3 hours

Max Marks: 70

PART – A

Answer ALL questions

All questions carry equal marks

10 * 2 Marks = 20 Marks

- 1). **A** What are the “Cut in Voltage” values for a Germanium and Silicon Diode? [2]
- b** Define Fermi Level in a Diode. [2]
- C** What is the maximum efficiency of a Full Wave Rectifier and Half Wave Rectifier? [2]
- d** Define and explain Ripple Factor. [2]
- E** Draw the input characteristics of CC Configuration. [2]
- f** Draw the self biasing circuit of a Transistor and explain the same. [2]
- G** Draw the Frequency response of single stage Common Emitter Amplifier. [2]
- h** What is the use of “Coupling and Bypass Capacitors” in Amplifiers? [2]
- I** Distinguish between JFET and MOSFET. [2]
- j** Define the Transconductance of a JFET. [2]

PART – B

Answer any FIVE questions

All questions carry equal marks

5 * 10 Marks = 50 Marks

2. a) Explain the forward bias and the reverse bias for a PN junction diode. [10]
b) Explain how the built-in potential difference exists at PN junction without the application of an external voltage across it.
3. a) A Ge diode carries a current of 10mA. When the forward bias of 0.2 V is applied [10]
estimate the reverse saturation current.
b) Define the terms “transformer utilization factor and regulation”.

4. a) Draw a circuit of the common emitter transistor amplifier and explain its working. [10]
b) Discuss the influence of coupling capacitor on the low frequency response.
5. a) What do you understand by small signal amplifier? List some rules which helps [10]
for analytic determination of the small signal behaviour of amplifier circuit.
b) Draw the output characteristics in CB configuration and explain the same.
6. a) Explain the MOSFET: Enhancement type of operation. [10]
b) Compare the JFET and MOSFET with respect to various features.
7. Write short notes on (i) LDR [10]
(ii) Zener break down and avalanche break down Diodes
8. a) What is thermal runaway? State the condition for preventing thermal runaway in a [10]
self biased BJT.
b) Explain the operation of UJT and draw the V-I characteristics of UJT.
