

BSCEL501 - Electronics Paper-I - Semiconductor Devices and Circuits

P. Pages : 2

GUG/W/24/15921

Time : Three Hours



Max. Marks : 40

-
- Notes : 1. All questions are compulsory and carry equal marks.
2. Draw neat and well labelled diagram wherever necessary.

1. a) Explain the forward bias of p-n junction with suitable diagram. 4
b) Draw the V-I Characteristics of reverse bias p-n junction and explain it. 4

OR

- c) Explain the halfwave rectifier with suitable input & output waveform. 4
d) Draw the block diagram of DC power supply and explain it. 4
2. a) Explain the construction and working of NPN transistor. 4
b) Explain the CB configuration with suitable diagram. 4

OR

- c) Explain the input characteristics of CE configuration. 4
d) Explain the concept of DC load line. 4
3. a) Explain the working of N-channel JFET with suitable diagram. 4
b) Draw the V-I characteristics of N-channel JFET and explain it. 4

OR

- c) Differentiate between FET and MOSFET. 4
d) Explain the working of N-channel DEMOSFET in depletion mode. 4
4. a) Explain the construction and working of UJT. 6
b) State the application of UJT. 2

OR

- c) Explain the working of SCR with suitable diagram. 4
d) Draw the V-I characteristics of triac and explain it. 4

5. Attempt **any eight** of the following.

1x8

- a) State the application of p-n junction diode.
- b) what is rectifier?
- c) What is Regulator?
- d) Draw the symbol of NPN and PNP transistor.
- e) Define β .
- f) State the application of BJT.
- g) state the advantage of JFET.
- h) Draw the symbol of MOSFET.
- i) what is pinch off voltage?
- j) state the application of SCR.
- k) Draw the symbol of triac.
- l) What is Diac?
