Roll No. | | | | | | | | | | | | |

Total No. of Pages : 03

Total No. of Questions : 09

B.Tech.(EE) PT (Sem.–2)

ELECTRONICS DEVICES AND CIRCUITS

Subject Code : BTEE-304

M.Code : 71537

Time : 3 Hrs. Max. Marks : 60

INSTRUCTION TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION - B & C have FOUR questions each.
3. Attempt any FIVE questions from SECTION B & C carrying EIGHT marks each.
4. Select atleast TWO questions from SECTION - B & C.

SECTION-A

1. Answer briefly :

a) Explain the atomic structure of silicon semiconductor with diagram.

b) What do you understand by majority carrier in diode?

c) Name the three different region of operation of a transistor.

d) Make the circuit diagram of emitter follower configuration.

e) What is band pass filter?

f) What do you understand by feedback in op-amp?

g) Describe oscillator principle.

h) Differentiate monostable and astable multivibrator.

i) What do you understand by switching regulators?

j) Differentiate regulated and unregulated power supply.

SECTION-B

2. a) Explain the working of full wave bridge rectifier.

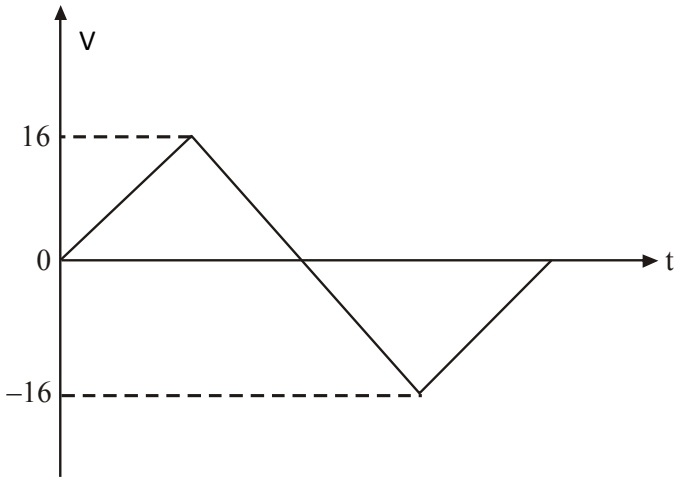

FIG.1

b) Determine output voltage for the given clipper network :

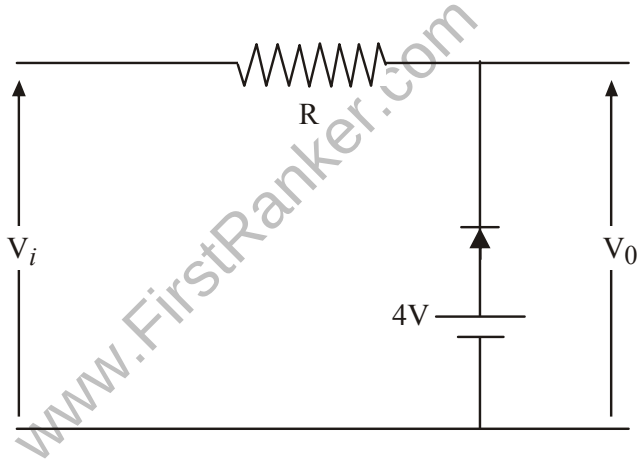

FIG.2

3. Explain the working of common collector configuration in various regions of operation.

4. What is an MOSFET and explain the basic construction and operation of N-channel depletion type MOSFET.

5. For a class B amplifier providing a 20V peak signal to a 16Ω load and a power supply of V_{cc} = 30V, determine the input power, output power, and circuit efficiency.

SECTION-C

6. What is differential amplifier? Discuss its working with DC bias.

7. What is oscillator? Describe the working of Colpitts oscillator.

8. Explain the working of first order Butterworth low pass filter.

9. Differentiate the action of series and shunt regulators.

NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.