Roll No. ☐☐☐☐☐☐☐☐☐☐☐   Total No. of Pages : 02

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. What is the clipper circuit?

    b. What is the use of load line?

    c. Draw the VI characteristics of the JFET.

    d. Draw the circuit diagram of class B amplifier.

    e. Calculate closed loop gain of an inverting mode OPAMP.

    f. List ideal and practical characteristics of OPAMP.

    g. Draw the circuit diagram of Wein bridge oscillator.

    h. What do you understand by negative resistance in oscillators?

    i. Distinguish the transistor series and shunt regulators.

    j. What is the benefit of using voltage regulator circuit?

SECTION-B

2. Determine the minimum value of current gain β required to put the transistor in saturation when Vin = +5V. Assume, V_{BE}(sat) = 0.8 V, V_{CE}(sat) = 0.12 V.
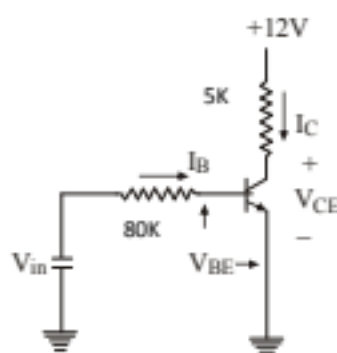

Fig.

3. Draw the pin diagram of 555 timer. Explain its working as a bistable multi vibrator.

4. Derive the expression of PIV for full wave rectifier circuit.

5. Explain the principle and working of 1st order active low pass filter.

SECTION-C

6. Discuss classes of amplifiers. Also in brief explain class AB amplifier.

7. Draw the hybrid equivalent circuit for common emitter configuration of transistor. Also derive its relevant parameters.

8. Explain the working of Schmitt trigger using suitable diagram and waveforms.

9. Write short notes on :

   a. Schottky Diode

   b. MOSFET

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.