Code No: 124AE

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B.Tech II Year II Semester Examinations, May - 2017
ELECTRONIC CIRCUITS
(Electrical and Electronics Engineering)

Time: 3 Hours   Max. Marks: 75

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 25 marks. Answer all questions in Part A.
Part B consists of 5 Units. Answer any one full question from each unit.
Each question carries 10 marks and may have a, b, c as sub questions.

PART- A
(25 Marks)

1.a) Which configuration in BJT provides the Current gain? [2]
  b) How amplifiers are classified according to the type of transistor configuration? [3]
  c) What the term f_β indicates at high frequency? [2]
  d) What is Frequency Distortion? [3]
  e) Distinguish between comparators and clipping circuits. [2]
  f) What are the applications of Schmitt trigger? [3]
  g) Explain the operation of Heat sinks. [2]
  h) Why RC circuits are commonly used compared to RL circuits? [3]
  i) How does diode acts as a switch? [2]
  j) Name the technologies which use bipolar transistors. [3]

PART-B
(50 Marks)

2. Draw the circuit of an emitter follower, and derive the expressions for A_I, A_V, R_i, R_O in terms of CE parameters. [10]

OR

3. Determine the effect of negative feedback on the input and output impedances of a Voltage-Series feedback amplifier. Show the circuit schematic diagram. [10]

4.a) Draw the ideal and actual frequency response curves of single stage amplifiers.
  b) Write a short note on Design of High frequency Amplifiers. [5+5]

OR

5.a) Draw and explain the FET high frequency model.
  b) Write a short note on Low frequency response of BJT amplifiers. [5+5]

6.a) With help of neat circuit diagram and waveforms, explain the working of a collector coupled Monostable multivibrator.
  b) Why commutating capacitors are used in Multivibrators? [7+3]

OR

7.a) Draw a circuit using diodes to transmit that part of a sine wave which lies between -4V and -7V.
  b) With the help of a neat diagram, explain the working of an emitter-coupled clipper. [5+5]

8.a) Explain the high pass RC circuit response for sinusoidal input and derive expression for cut-off frequency.

b) Discuss the concept of Thermal Runway. [6+4]

OR

9. Draw the circuit diagram of Class-B Complementary Push-Pull Amplifier and explain its working and derive the expression for maximum conversion efficiency. [10]

10.a) Explain the operation of transistor switch in saturation.

b) Write a short note on piecewise linear diode characteristics. [5+5]

OR

11.a) Explain the Break down voltage consideration of transistor.

b) Discuss about saturation parameters of Transistor and their variation with temperature. [5+5]

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