Roll No-

NATIONAL INSTITUTE OF TECHNOLOGY DELHI

Make-up Examination July 2017
Year- II

Name of Specialization: EEE

Semester: 3rd /5th

Course Name: Analog Electronics

M.Marks:50

Course Code: EC 220

Time : 3.00 Hrs.

Q.1.Given the load line of Fig.1 and the defined Q-point, determine the required values of V_{CC}, R_C, and R_B for a fixed-bias configuration. 6 marks

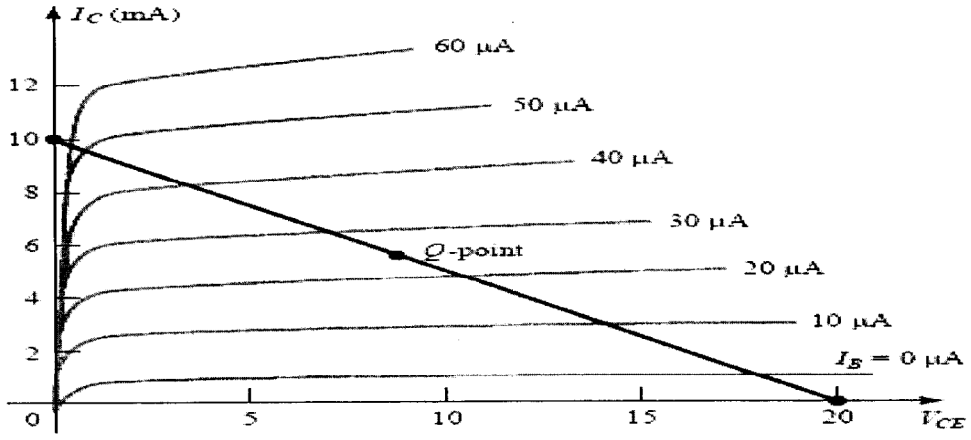

Fig.1

Q.2. Describe various methods used for transistor biasing with the help of circuit diagram.

6 marks

Q.3. Given I_E=2.5 mA, h_{fe}= 140, h_{oe}=20 μS (μmho), and h_{ob}=0.5 μS, determine:
(a) The common-emitter hybrid equivalent circuit.
(b) The common-base *re* model (4+4) marks

Q.4.Discuss different types of power amplifiers. Show that maximum collector efficiency of class B power amplifier is 78.5%. (5+3) marks

Q.5. What improvements can be obtained using negative feedback? Explain the effect of negative feedback on gain and bandwidth. Derive an expression of input resistance in voltage-series feedback amplifier. (2+2+2) marks

Q.6. Explain the criterion for oscillation. Draw the circuit diagram of we in bridge oscillator and explain its operation. (2+4) marks

Q.7.Draw the schematic block diagram of the basic Op-Amp with inverting and non-inverting inputs. List six characteristics of the ideal operational amplifier. 5 marks

Q.8 Explain with the help of circuit diagram, the operation of a stable **OR** mono stable multi vibrator. 5 marks