Faculty of Eng.
Dept. of Electronics and comm.
Total marks 100

Time: 3 H.
Course title: Basic
Electronics
1st year

ANSWER ALL QUESTIONS

Question One: (20 MARKS)

1) Determine and draw Vo for the circuits of Fig.1
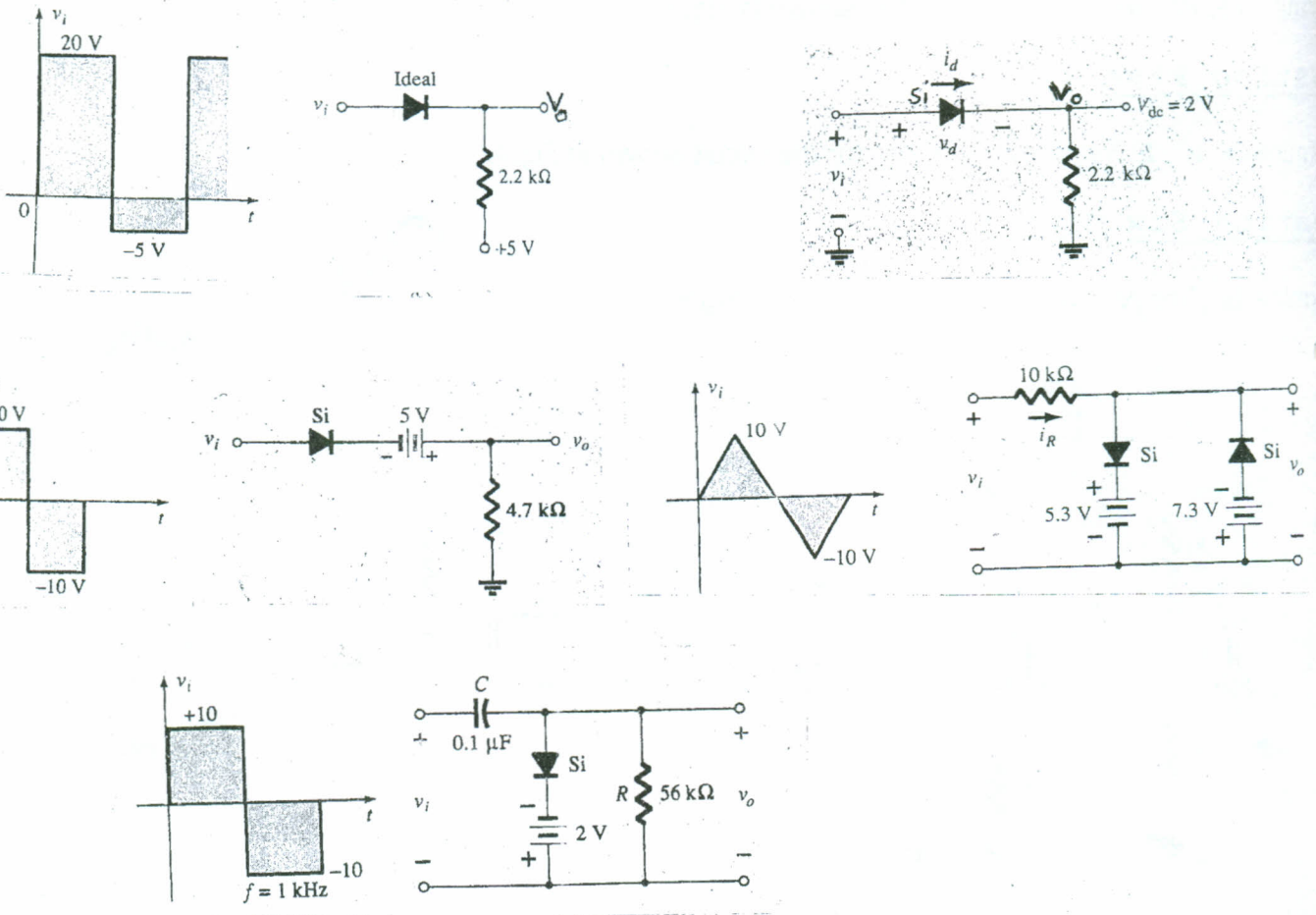

Fig.1

Question Two: (10 MARKS)

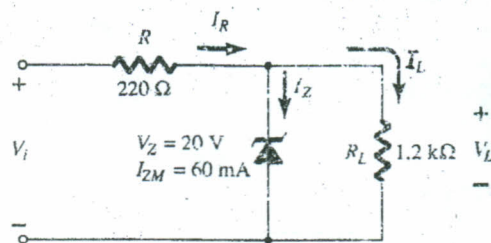Determine the range of values of Vi that will maintain the Zener diode of Fig.1 in the ON- state

Fig.2

Question Three: (20 MARKS)

a) What is the benefit of high input impedance in FET ? (3)
b) Draw and discuss the output characteristics of BJT common emitter configuration. (5)
c) Draw and explain the structure and operation of n-channel enhancement MOSFET and its output characteristics. (8)
d) Prove that $I_E = (1+ \beta)I_B$ & $\alpha = \beta/ 1+\beta$ (4)

Question Four: (16)

Determine R_E, R_C , R_1 ,R_2 , for the circuit shown in Fig.3.

Question Five: (18)

Determine I_B ,I_C , I_E ,V_B ,V_C ,V_E, V_{CB} ,V_{CE} for the circuit shown in Fig.4.

Question Six: (16)

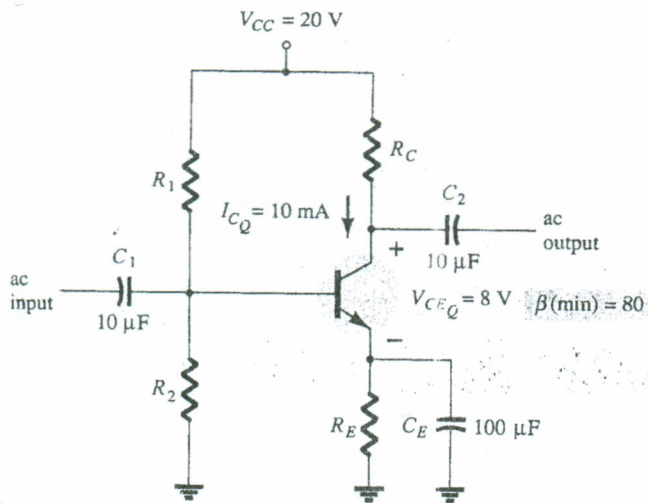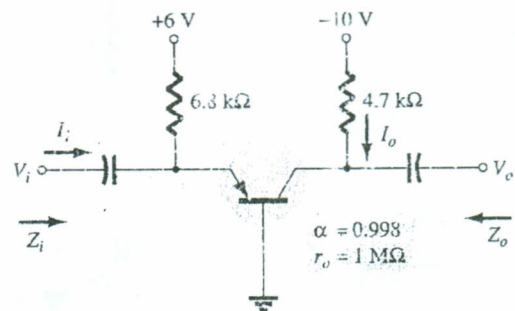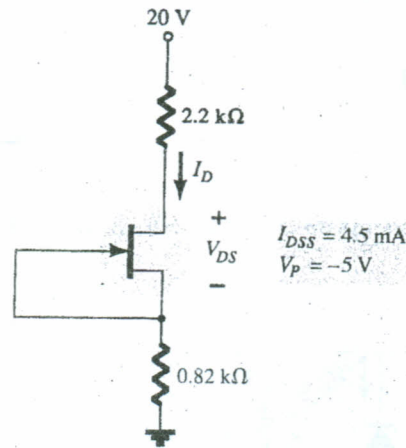Determine I_D , V_{DS} ,V_D ,V_S for the circuit shown in Fig.5

Fig.2

Fig.3

Fig.4

Good Luck

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