77808

Paper Solution

SUBJECT :- ELECTRONIC DEVICES AND CIRCUITS -II SEM:- IV(CBCGS)

Q.2

Solution :-

Step 1. Given data

Step 2. Selection of Transistor

Selection the transistors from data sheet as per requirement.

Step 3. Calculate voltage gain of individual stage.

As per data given in the problems,stage 1 is FET and stage 2 is BJT.

Design of stage 2(using BJT)

Step 4. Calculate Rc

Step 5. Calculate Vcc

Step 6. Calculate R_E

Step 7. Calculate R_1 and R_2

Step 8. Calculate Cc and C_E

Design of stage 1(using FET)

Step 9. Calculate I_D

Step 10. Calculate Vgs

Step 11. Calculate g_m

Step 12. Calculate R_D

Step 13. Calculate R_S

Step 14. Calculate R_G

RG = 1MΩ

Step 15. Calculate C_D

Step 16. Calculate C_S

Step17. Calculate C_G

Step 18. Draw the circuit diagram

Q.6) Solution :-

$$L_1 = 5\,mH$$

$$L_2 = 2\,mH$$

$$C = 0.5\,\mu F$$

$$f_0 = \frac{1}{2\pi\sqrt{L_{eq}C}}$$

$$L_{eq} = L_1 + L_2 = 7\,mH$$

$$\boxed{f_0 = 2.69\,KHz}$$