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**B.E (Full-time) Degree Examination**  
**B.E Electronics and Communication Engineering**  
**IV Semester**  
**EC9252-ELECTRONIC CIRCUITS-II**  
**REGULATION-2008**

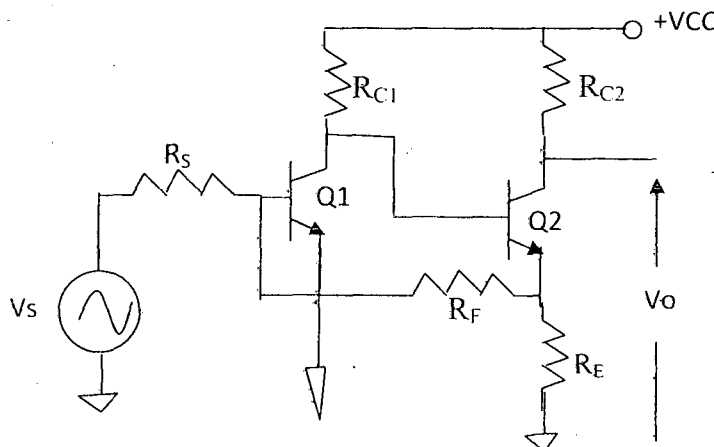
**PART-A(10 X 2 = 20 Marks)**

**Max Marks:100**

- 1) List out the properties of negative feedback amplifier
- 2) The voltage gain without negative feedback is 40dB. What is the new voltage gain if 3% negative feedback is introduced
- 3) Write the feedback factor expression for BJT transistor based Wein bridge oscillator
- 4) State Barkhausen criterion
- 5) Determine the bandwidth of two stage synchronous tuned amplifier. Assume the bandwidth of individual stage is 310 kHz.
- 6) List-out the advantages of using the transformer in tuned amplifier circuit
- 7) What is the role of commutation capacitor in bistable multivibrator circuit.
- 8) Design an RC circuit to generate an output voltage,  $V_o$  with a slope error of 20% and sweep time of  $20\mu s$  and a sweep voltage of 2V.
- 9) Draw the switching characteristics of IGBT
- 10) What should be the value of inductance to use an inductor filter connected to a FWR operating at 50Hz frequency if the ripple is not exceed 5% for a  $100\Omega$  load.

**PART-B (5 X 16 =80 Marks)**

- 11)(i) Explain single tuned amplifier and derive for gain, resonant frequency and cutoff frequencies (10)
  - (ii) Briefly explain Hazeltine neutralization used in tuned amplifier for stabilization (4)
  - (iii) Differentiate between Synchronous and Staggered tuned amplifiers (2)
- 12) a)(i) Identify the nature of feedback in Figure-1. Let  $R_{C1}=3K\Omega$ ,  $R_{C2}=500\Omega$ ,  $R_E=50\Omega$ ,  $R_S=R_F=1.2K\Omega$ ,  $h_{fe}=50$ ,  $h_{ie}=1.1K\Omega$ ,  $h_{re}=h_{oe}=0$ . Determine overall voltage gain ( $A_{vf}$ ), overall current gain ( $A_{if}$ ), input impedance ( $R_{if}$ ) and output impedance ( $R_{of}$ ). (10)



**Figure-1**

12.b) Describe in detail an approach for calculating the voltage and current induced in a power line due to the incident Electromagnetic wave

13a) Explain the different i) Grounding techniques ii) Bonding Techniques in EMC study

(OR)

13b) What are the different types of filters used? Discuss in detail their placements. Discuss the role of isolation transformers in an EMC environment

14a) Explain the EMC requirements for the i) Electrical equipment for measurement, control and laboratory use ii) Medical instrumentation

(OR)

14b) What is the role of VIA in PCB's? Explain how they are effective in minimizing EMI and crosstalk.

15a) Explain the construction and features of an anechoic chamber.

(OR)

15b) i) Explain the role of Line impedance stabilization network in EMC studies (8)

ii) Specify the features of EMI test receivers (8)