Reg. No. : ....

Name : ....

Third Semester B.Tech. Degree Examination, December 2012
(2008 Scheme)
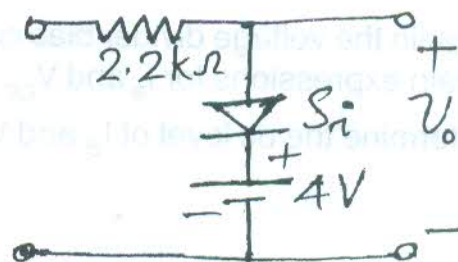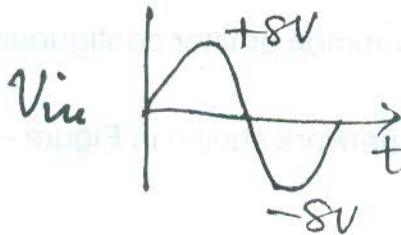### 08.304 : ELECTRONIC CIRCUITS (RF)

Time : 3 Hours

Max. Marks : 100

PART – A

Answer **all** questions.

1. Explain the working principle of SMPS.

2. Analyse full wave rectifier (with centre tapped transformer) and find out ripple factor and TuF.

3. Explain the working of an inverter.

4. Determine V_0 for the network shown :

5. Explain the working of Wien bridge oscillator.

6. Explain the operation of astable multivibration using 555 timer IC.

7. Explain the working of Colpitts oscillator.

8. Find V_{CEQ} for the collector to base bias circuit with $V_{Ce} = 12$ V, $R_B = 680 \, k\Omega$, $R_C = 4.7 \, k\Omega$ and $\beta = 100$.

9. Draw the circuit of a differential amplifier using OPAMP.

10. Calculate the output of an inverting amplifier with $R_i = 100$ K, $R_f = 220$ K and $V_{in} = 1V$.

(4×10=40 Marks)

PART – B

Answer **any one** question from **each** Module.

Module – I

11. a) Design and analyze a full wave bridge rectifier with RC filter.

    b) A full wave bridge rectifier with a 120 V_{rms} sinusoidal input has a load resistor of 1kΩ.

       i) If silicon diodes are used, what is the dc voltage available at the load ?

       ii) Determine the required PIV rating of each diode.

       iii) Find the maximum current through each diode during conduction.   **20**

OR

12. a) What is the response of a passive RC low pass filter to a sinusoidal waveform ?

    b) Explain different types of clampers.   **20**

Module – II

13. a) Explain the voltage divider bias circuit for common emitter configuration and obtain expressions for I_B and V_{CE}.

    b) Determine the dc level of I_B and V_C for the network shown in Figure – 1.   **20**
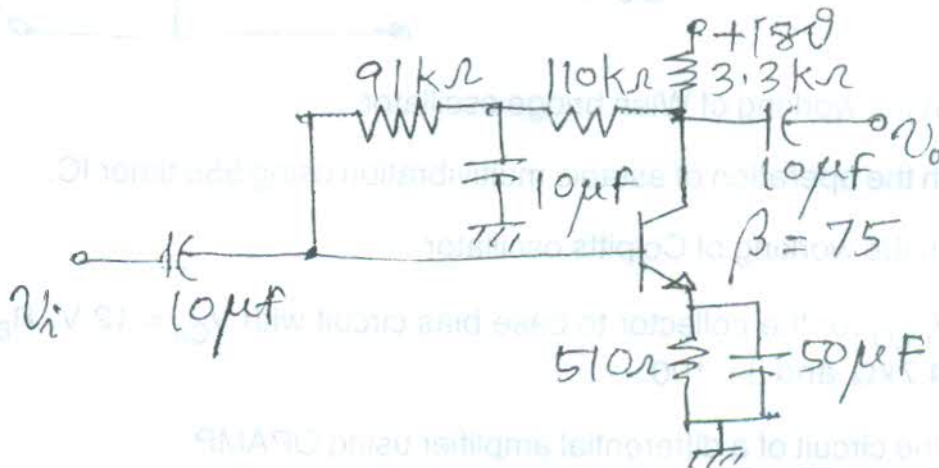

Figure – 1

OR

14. a) Derive the expression for voltage gain in emitter follower configuration.

   b) Explain the working of RC phase shift oscillator.   20

Module – III

15. a) Describe the working principle of an ideal OPAMP. What are the applications of OPAMPS ?

   b) Realize a II order active low pass filter using OPAMP.   20

OR

16. Explain summing, differential, inverting and noninverting amplifier configuration using OPAMP.   20