

B.Sc. (Part - II) (With Credits)-Regular-Semester 2012 Sem III
B.Sc.23131 - Electronics-I (Amplifiers) Paper- I

P. Pages : 1

Time : Three Hours



GUG/S/16/3336

Max. Marks :50

- Notes :
1. All questions are compulsory.
 2. All questions carry equal marks.
 3. Draw neat and labelled diagrams wherever necessary.
 4. Use of log table/calculator is allowed.

1. Either

- a) What is amplifier? Explain the notations used in amplifier. Explain the potential divider method of biasing the transistor. **10**

OR

- b) What are h- parameters? Derive equations for h_{ie} , h_{fe} , h_{re} and h_{oe} in (CE) transistor circuit. **10**

2. Either

- a) Explain the graphical representation of class A, class B and class C amplifier. Explain the working of single stage RC- coupled amplifier. **10**

OR

- b) Draw the circuit diagram of two stage RC coupled amplifier and derive an expression for voltage gain in mid frequency and high frequency range. **10**

3. Either

- a) State the drawbacks of direct coupled amplifier. Draw the circuit diagram of differential amplifier and explain its working. Why we need two power supply in differential amplifier? **10**

OR

- b) Draw the block diagram of operational amplifier and explain the function of each block
Define:
a) Input bias current b) Input offset voltage
c) CMRR d) Slew rate **10**

4. Either

- a) Explain the working of op-Amp as an inverting amplifier and derive an expression for its gain. How you will use inverting amplifier as a sign changer. **10**

OR

- b) Explain OP-Amp as an inverting adder In OP-Amp as an adder
 $V_1 = 1v$, $V_2 = 1.5v$ $V_3 = -1.5v$, $R_f = 100k$, $R_i = 10K\Omega$ find its output voltage. **10**

5.

- a) Define stability factor and explain its importance. **10**
b) Explain the distortion in amplifier.
c) Explain offset adjustment in OP-Amp.
d) Draw circuit for OP-Amp as Schmitt trigger and give its characteristics.
