* J B - 3 0 9 2 *

JB-3092

Second Year B. Sc. (Sem. III) Examination

March/April – 2013

Electronics : Paper - III

(Electronics Circuits & Applications)

Time : Hours] [Total Marks : **50**

Instructions :

(1)

નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fillup strictly the details of ☛ signs on your answer book.

Name of the Examination :

☛ S. Y. B. SC. (SEM. 3)

Name of the Subject :

☛ ELECTRONICS : PAPER - 3

☛ Subject Code No. : 3 0 9 2 ☛ Section No. (1, 2,.....) : Nil

Seat No. :

Student's Signature

(2) Draw neat and labeled diagrams wherever necessary

(3) Assume and denote any data not provided

(4) All symbols have their usual meaning

1 Answer in brief : **14**

(i) What is loop gain

(ii) Define Stability factor with reference to transistor biasing

(iii) Give the typical h-parameter values for CE amplifier configuration

(iv) The emitter follower circuit is having a unity gain why still it is called amplifier

2 (a) Discuss the Voltage divider bias with emitter bias circuit for stable transistor biasing **8**

(b) Briefly discuss bias compensation **4**

OR

2 (a) Define the h-parameters. Discuss the simplified h-parameter model for CE configuration **8**

(b) Write the pair of equations representing the h-parameter equivalent model for all the three configurations **4**

3 (a) Discuss the various types of feedbacks. Give a typical example of current shunt feedback 8

(b) An amplifier with open loop gain of 50 is subject to a negative feedback of 20% calculate the resulting gain of the amplifier with feedback also predict the bandwidth of the amplifier with feedback if the open loop bandwidth is 1 MHz 4

OR

3 (a) Discuss the effect of the emitter bypass capacitor and coupling capacitor on lower cutoff frequency of the RC coupled amplifier 8

(b) Define unity gain bandwidth and gain bandwidth product. 4

4 Write short notes : (any two) **12**

(i) Transformer coupled amplifier

(ii) Black box theory

(iii) Cause of instability in transistor biasing

(iv) Effect of negative feedback on transistor amplifier performance