

B.Tech Sem – IV (2007 Course) (Electronics) : SUMMER - 2019 ;
SUBJECT : ELECTRONIC CIRCUITS

Day : Thursday
Date : 23/05/2019

Time : 10.00 AM TO 01.00 PM
Max. Marks : 80

S-2019-3023

N. B. :

- 1) **Q. No. 1 and Q. No. 5 are COMPULSORY.** Out of the remaining attempt **ANY TWO** questions from each section.
- 2) Figures to the right indicate **FULL** marks.
- 3) Answer to both the sections should be written in **SAME** Answer book.
- 4) Assume suitable data, if necessary.

SECTION – I

- Q. 1** a) Discuss the effects of coupling, bypass and shunt capacitances on frequency response of amplifiers. (04)
- b) List the advantages and disadvantages of negative feedback. (04)
- c) Explain the concept of “virtual ground” for op-amp. Derive an expression for closed loop gain of inverting amplifier using op-amp. (06)
- Q. 2** a) Describe various coupling methods for cascading amplifier. (06)
- b) Draw the ‘h’ parameter equivalent circuit for a typical CE amplifier and derive an expression for A_v , A_i , R_i and R_o . (07)
- Q. 3** a) An amplifier has mid-band voltage gain (A_{vmid}) of 1000 with $f_L = 50\text{Hz}$ and $f_H = 50\text{KHz}$, if 5% feedback is applied then calculate gain, f_L and f_H with feedback. (06)
- b) Describe the different topologies of feedback amplifier using block diagrams. (07)
- Q. 4** a) Define the following parameters of op-amp and give typical values for IC 741: (06)
- i) CMRR
 - ii) Input offset voltage
 - iii) Input bias current
- b) Describe the block diagram of internal construction of op-amp, stating function of each block in detail. (07)

P. T. O.

