Total No. of Questions :5] *[Total No. of Printed Pages : 2*

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EX-405 (Old)

B.E. IV Semester

Examination, June 2016

Electronic Devices and Circuits - II

Time : Three Hours

Maximum Marks : 70

Note: i) Answer five questions. In each question part A, B, C is compulsory and D part has internal choice.

ii) All parts of each question are to be attempted at one place.

iii) All questions carry equal marks, out of which part A and B (Max. 50 words) carry 2 marks, part C (Max. 100 words) carry 3 marks, part D (Max. 400 words) carry 7 marks.

iv) Except numericals, Derivation, Design and Drawing etc.

Unit - I

1. a) Write the characteristics of ideal and practical op-amp.
   b) Define slew rate and off-set voltage of op-amp.
   c) Describe logarithmic amplifier using op-amp.
   d) Explain frequency compensation techniques of operational amplifier.

OR

Find V_0 for the adder-subtractor shown in figure 1.1.

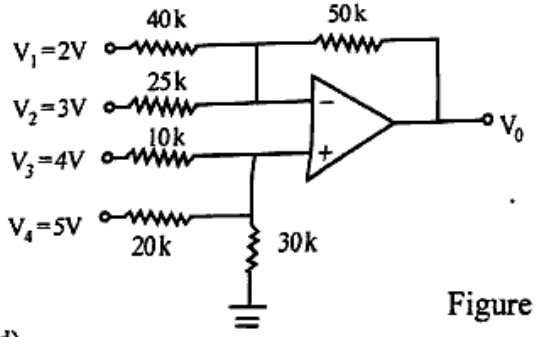

Figure 1.1

Unit - II

2. a) Draw frequency response of active LPF and HPF.
   b) Compare higher order and lower order filters.
   c) Explain 555 timer and its applications.
   d) Explain phase locked loop.

OR

Design a second order low pass filter at a high cut off frequency of 1 kHz.

Unit - III

3. a) Define Acoustics.
   b) Explain the working of moving coil microphone.
   c) Explain noise figure and sensitivity.
   d) Write a short note on sound recording systems.

OR

Explain cross over network and its frequency characteristics.

Unit - IV

4. a) State the limitations of conventional tubes.
   b) What is GUN effect?
   c) Discuss the high frequency limitations of transistors.
   d) Write the short notes on Klystron amplifier and magnetrons.

OR

Explain
i) MASER and LASER
ii) IMPATT and TRAPATT
iii) TUNETT

Unit - V

5. a) Explain transistor as a switch.
   b) Compare ECL and TTL.
   c) What are the advantages of CMOS circuits?
   d) Explain TTL and its characteristics.

OR

Discuss the rise and fall time in CMOS gates.

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