Code No. 7122

FACULTY OF SCIENCE

B.Sc. IV-Semester (CBCS) Examination, May / June 2018

Subject: Electronics

Paper – IV

Linear Integrated Circuits and Basics of Communication

Time: 3 Hours Max.Marks: 80

PART – A (5x4 = 20 Marks)

[Short Answer Type]

Note: Answer any five of the following questions.

1 Define CMRR and Slew rate of an Op-amp

2 An inverting amplifier has R_1 =10kΩ and R_f =125KΩ calculate the output voltage, for an input voltage 4 V

3 Discuss generation of triangular wave using OP AMP and explain

4 Explain mono stable multi vibrator using IC555

5 Define modulation index in AM. Explain types of modulation

6 Mention advantages of FM over AM

7 Write a short note on Side Bands and Band width of AM

8 Calculate the modulation index of an FM Wave Which has carrier swing of 150KHZ and has been modulated by a signal of 10KHZ

PART – B (4x15 = 60 Marks)

[Essay Answer Type]

Note: Answer all questions from the following.

9 a) Draw the block diagram of Op-Amp and explain in detail. Describe the parameters of op-amp

OR

b) Draw the circuit diagram of op-Amp in non inverting mode and derive the equation for its voltage gain

10 a) Explain the working of Wein Bridge oscillator using op-amp with neat circuit diagram and obtain its frequency of oscillations

OR

b) Draw the block diagram of IC 555 Timer and describe its working

11 a) What is amplitude modulation? Show that an AM wave contains a carrier and two side bands for every modulating frequency?

OR

b) Explain the salient features of amplitude modulation with the help of appropriate wave forms. Give the theory and working of diode detector to detect the AM signals.

12 a) Give the analysis of frequency modulation. Describe the working of FM Discriminator with circuit diagram.

OR

b) Draw the block diagram of FM radio receiver. Explain the significance of each block.