

M.Sc. 3rd Semester Examination, 2012

ELECTRONICS

(Electronics and Optical Communication)

(Practical)

PAPER—ELC-306

Full Marks : 50

Time : 2 hours

Answer any **one** question, selecting it by a lucky draw

The figures in the right-hand margin indicate marks

1. Generate an FM wave using IC 8038. Test the performance of your circuit using a CRO and calculate the frequency deviation. Find out the modulation Index. Repeat this process for a new set of modulating signal. 15 + 10 + 5 + 10

(Turn Over)

2. Generate a pulse amplitude modulated signal on a bread board using a transistor. Observe the PAM output using a CRO and record the amplitude of each pulses. Repeat this process for another set of modulating signal. Demodulate the PAM signal using a low pass filter. 15 + 10 + 10 + 5
3. Design and implement a circuit on a bread board to generate a PWM signal using IC 555. Observe PWM output using a CRO, and record the width of the pulses. Plot width of the pulses with t . Repeat this process for another set of modulating signal. (10 + 10) + (10 + 5) + 5
4. Design and implement a DSBSC modulation using IC 1496 on a bread board and test the operation of your circuit. Calculate the modulation index of your modulator. Vary modulating signal amplitude and plot modulation index with modulating signal amplitude. How can you determine original message signal from the DSB-SC O/P ? (10 + 10) + 5 + 10 + 5

5. Generate an Amplitude modulated signal using a transistor on a bread board. Observe your result using a CRO, calculate modulation Index of the modulator. Demodulate the AM wave using an suitable envelope detector circuit. (20 + 5 + 5) + 10
6. Implement a circuit using IC OTA 3080 to generate amplitude modulated signal. Apply modulating signal of three different amplitude but same frequency. Calculate modulation index for each amplitude of the modulating signal. Draw a graph showing the variation of modulation index with modulating signal amplitude. 20 + 10 + 10

Viva Voce : 05 Marks

Laboratory Note Book : 05 Marks
