PG/IIIS/ELC-306/19(Pr.)

M.Sc. 3rd Semester Examination, 2019

ELECTRONICS

(*Communication Laboratory*)

(Practical)

PAPER –ELC-306

Full Marks : 50

Time : 2 hours

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

1. Generate an amplitude modulated (AM) signal using a transistor on breadboard. Show your result for different amplitudes with a fixed frequency of the modulating signal. Repeat it for another fixed input frequency. In each case, calculate the values of modulation index.

2. Generate pulse amplitude modulated (PAM) signal using a transistor. Observe the output on a CRO and record the amplitude and time period. Repeat the same for another set. Demodulate the PAM signal using low-pass filter.

3. Design and implement a circuit on breadboard to generate PWM signal using IC555. Observe the PWM output and record the data with pulses, plot width of the pulses with time. Repeat this process for another set of modulating signal.

4. Design and implement a circuit using ICOTA 3080 for amplitude modulation. Record the data for three sets of modulating signal amplide at fixed frequency and calculate the modulation index for each case. Plot the variation of modulation index with modulating signal amplitude.

5. Generate an amplitude modulated signal using a transistor on a breadboard. Calculate the modulation index. Demodulate the AM wave using a suitable envelope detector circuit.

6. Design and implement a circuit for optical conversion of 4-bit signal to its analog form by R-2R ladder network.

7. Find the numerical aperture of the given optical fiber. Calculate the acceptance angle for the fibre.

8. Design a frequency modulation circuit using IC 8038 and implement it on a breadboard. Verify the operation of the circuit and calculate the frequency deviation and modulation index.

9. Design an AM-demodulation circuit with an envelope detector. Plot the demodulated wave form for 50% and 75% modulation compare the results.

10. Measure the dimension of circular aperture by LASER beam.

11. Study the frequency response characteristics of LDR. Plot the corresponding response curve.

Distribution of Marks

Theory	:	05 Marks
Circuit	:	10 Marks
Experiment	:	15 Marks
Result and Discussions	:	05 Marks
Viva-Voce	:	10 Marks
Laboratory Note Book	:	05 Marks
Total	:	50 Marks