Bachelor of Science (B.Sc.) Semester—III Examination
ELECTRONICS (ELECTRONIC CIRCUIT DESIGN)
Optional Paper—II

Time : Three Hours] [Maximum Marks : 50

N.B. :— (1) **ALL** questions carry equal marks.
(2) Due credit will be given to neatness and adequate dimensions.
(3) Diagram and equations should be given wherever necessary.

EITHER

1. (A) Describe any five parameters to evaluate sensor.
(B) Explain the different processes involved in design and development of analog system.
OR
(C) Explain the difference in approach for new design and redesign.
(D) Give the comparison between the concept of black, grey and white box.

EITHER

2. (A) Explain in detail the DC analysis setup.
(B) State and explain the six basic processes involved in drawing schematic.
OR
(C) Explain in detail the transient analysis setup.
(D) Explain the following tools in digital mode simulation :
(i) Reset digital simulation
(ii) Trace
(iii) Run digital simulation
(iv) Step.

EITHER

3. (A) Draw and explain the functional block diagram of IC 555.
(B) Explain how IC 555 can be used as monostable multvibrator. Derive the equation for the ON time of the monostable multivibrator.
OR
(C) Draw and explain the circuit of PAM, PPM using IC 555.

EITHER

4. (A) Explain the process of frequency and phase measurement using CRO,
(B) Draw and explain the block diagram for chop and alternate mode in dual trace oscilloscope.
OR
(C) Draw the block diagram of a function generator and explain the function of each block.
(D) What is the difference between an oscillator and a function generator ?

5. Solve any ***ten*** :
(1) What is hystersis ?
(2) What is capacitve load ?
(3) What is prototying ?
(4) Explain workspace in circuit maker.
(5) SPICE stands for ?
(6) Shortcut key for resistor and capacitor are ?
(7) What is the function of reset pin in 555 timer ?
(8) Draw the waveform of 555 astable multivibrator across at output.
(9) Give the equation for frequency for 555 astable multivibrator.
(10) If the figure in Lissajous fig is a straight line then what is the phase between two signal ?
(11) What is the ratio of frequencies if a figure of 8 is formed ?
(12) What is the role of attenuator in CRO ?