MPH14A — ELECTRONIC DEVICES AND APPLICATIONS

Time : Three hours   Maximum : 75 marks

SECTION A — (5 × 6 = 30 marks)

Answer ALL the questions.

1. (a) Explain the fabrication of voltage regulators by using monolithic technology.

Or

  (b) Write short notes on integrated circuit multipliers.

2. (a) What is a PIN diode? Discuss its characteristics.

Or

  (b) What is a photo transistor? Explain its action and discuss its features.

3. (a) Construct a Schmitt trigger circuit using IC 555 and describe its working.

Or

  (b) What is PLL? Design a PLL with IC 555 timer and explain its working.

4. (a) Construct a logarithmic amplifier circuit with an op-amp and describe its operation.

Or

(b) With a neat circuit diagram with op-amp, explain the working of a sine wave generator.

5. (a) Describe the generation and demodulation of pulse position modulation.

Or

(b) Explain the different modes of modem operations.

SECTION B — (3 × 15 = 45 marks)

Answer any THREE questions.

6. Write short notes on the logic families

(a) Schottky TTL

(b) P & N MOS and

(c) tristate

7. (a) Draw the Pin out diagram of a seven segment display and explain its working.

(b) Write short notes on IR and UV detectors.

8. With a neat diagram, give a complete description about IC 565 and describe its lock in range and capture range.

9. Using op-amps construct the following circuits and explain their actions.

(a) Schmitt trigger

(b) Astable and monostable multivibrators.

10. (a) Explain the principles of PCM.

(b) Describe the generation and demodulation of PCM.

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