APRIL/MAY 2019

MPH14A — ELECTRONIC DEVICES AND APPLICATIONS

Time : Three hours Maximum : 75 marks

SECTION A — (5 × 6 = 30 marks)

Answer ALL questions.

1. (a) With a circuit diagram explain tri state logic circuits.

Or

(b) With a circuit diagram explain how pressure transducer is fabricated by integrated circuit.

2. (a) With a block diagram explain the working of NE/SE 566 voltage controlled oscillator

Or

(b) Derive the expression for capture range of PLL IC 565.

3. (a) Explain the construction and characteristics of LDR.

Or

(b) Write short notes on IR detector.

4. (a) Explain the operation of monostable mulitvibrator using Op-Amp with circuit diagram.

Or

(b) Explain the working of non-inverting Schmitt trigger using Op-Amp with circuit diagram.

5. (a) Explain the PWM technique and state its advantages.

Or

(b) Describe the MODEM RS-232 interfacing.

SECTION B — (3 × 15 = 45 marks)

Answer any THREE questions.

6. (a) With a circuit diagram describe the various steps to fabricate MOSFET from Si wafer.

(b) Discuss briefly fabrication of Schottky transistor.

7. Describe the working of a solar cell along with its characteristics and hence derive an expression for the efficiency of a solar cell.

8. With a circuit diagram explain the working of IC 555 as a monostable multivibrator and hence derive the expression for the pulse width of it.





9. (a) Draw the circuit diagram of a second order Butterworth active low pass filter and derive an expression for its transfer function.

(b) With a circuit diagram explain the working of log amplifier.

10. Give the principle of pulse code modulation. Explain the generation and demodulation of pulse code modulation.

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