

4534/MPB

MAY 2010

DIGITAL ELECTRONICS AND MICROPROCESSORS

(For those who joined in July 2003 and after)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

All questions carry equal marks.

(5 × 20 = 100)

1. (a) (i) Convert $(107.6875)_{10}$ to its equivalent binary number.
- (ii) Convert $(98.625)_{10}$ to its equivalent octal number.
- (iii) Convert $(98.625)_{10}$ to its equivalent Hexa decimal number.
- (iv) Convert $(CD.E8)_{16}$ to its equivalent binary number.
- (v) Express $F = A + \overline{B}C$ in a sum of minterms.

Or

- (b) (i) Explain two variable k-map.

- (ii) Simplify the Boolean function $F(A,B,C)$ in sum of products using don't's care condition, d

$$F = \bar{B} + \bar{A}\bar{C}$$

$$d = BC + AB$$

2. (a) (i) Explain the working of a master-slave Flip-Flop.
(ii) Draw the circuit of a D-Flip-Flop and discuss its working.

Or

- (b) Explain the working of binary ripple counter and BCD ripple counter.
- (a) Explain with the functional block diagram the architecture of 8085 microprocessor.

Or

- (b) Explain the classification of instruction in 8085 microprocessor.
- (a) Discuss the stack in the microprocessor based system.

Or

- (b) Explain the microprocessor based software development systems.

5. (a) Discuss the various registers in 8086 microprocessor.

Or

- (b) Explain the serial I/O mode transmission.