

Paper VI — DIGITAL ELECTRONICS AND
MICROPROCESSORS

Time : Three hours

Maximum : 100 marks

All questions carry equal marks.

Answer all questions choosing either (a) or (b) in each question.

(5 × 20 = 100)

1. (a) Explain with logic diagrams the implementation of the following functions.

(i) $F = AB + CD + E$

(ii) $F = (A+B)(C+D)E$.

Or

- (b) What are Karnaugh maps? Explain how Karnaugh maps are constructed for

- (i) Two variables
(ii) Three variables and
(iii) Four variables.

2. (a) Describe the construction and working of clocked RS flip flop and D flip flop.

Or

- (b) Describe the construction of memory unit using block diagrams. Explain the sequence of operations needed during read and write operations.

3. (a) Explain the classification of the instruction set of Intel 8085 microprocessor and give their format.

Or

- (b) Give the flowchart and programme of the Hexadecimal counter along with the programme description. Explain time delay calculation.

4. (a) Explain the uses of stack in the microprocessor based system with examples.

Or

- (b) Explain the role of subroutine in the assembly language programme. What are advanced subroutine concepts?

5. (a) Describe the interfacing of push-button keyboard with the microprocessor using the circuit diagram, flow chart and programme.

Or

- (b) Explain how the memory can be interfaced with the Intel 8085 microprocessor.