

[Time:2.30 Hrs]

[Marks:75]

Please check whether you have got the right question paper.

- N.B:
1. All question are compulsory.
 2. Figures to the right indicate full marks.

Q.1 Attempt any four of the following: 20

- A Convert the decimal number 35.45 to octal number.
- B Explain the functional unit of a computer along with the block diagram.
- C With the help of truth tables, symbol and equation explain basic gates.
- D Design and explain Half Adder Circuit.
- E Explain multiplexer.
- F Explain tristate buffer.

Q.2 Attempt any four of the following: 20

- A Explain how memory is used to read write operations.
- B Write a note on types of machine instruction.
- C Explain characteristics of RISC instruction set.
- D Write a note on subroutines.
- E Explain Big-Endian and Little Endian Assignment.
- F Explain stacks.

Q.3 Attempt any four of the following: 20

- A Illustrate about the different data transfer techniques used in CPU.
- B Explain the exception types.
- C Explain the operation of DMA.
- D Illustrate the concept of Exception and Interrupt Request.
- E Write a note on Polled interrupt and Vectored interrupt.
- F Explain the Input-operation.

Q.4 Attempt any three of the following: 15

- A What is pointer? Explain its use in indirection operation.
- B Explain Synchronous and Asynchronous Bus Example.
- C Explain De Morgan's Law.

- D State and explain the ways of byte address assignment.
- E Explain the concept of Single-bus Structure.
- F Simplify the given 2-variable Boolean equation by using K-map.
$$F = X Y' + X' Y + X' Y'$$
