

2020

Time : 3 hours

Full Marks : 80

Candidates are required to give their answers in their own words as far as practicable.

The questions are of equal value.

Answer five questions in which

Q. No. 1 is compulsory.

1. Choose the correct alternative of the following :

(a) The ALU performs :

(i) Arithmetical Operation

(ii) Logical Operation

(iii) Both (i) and (ii)

(iv) All of these

(b) A Boolean function consist of :

(i) Binary variable

(ii) Logical Operation

- (iii) Equal Sign
 (iv) All of these
- (c) A Register is a group of :
- (i) OR gates
 (ii) OR and AND gates
 (iii) Flip-Flop
 (iv) None of these
- (d) The circuit used to store one bit of data is known as :
- (i) Register (ii) Encoder
 (iii) Decoder (iv) Flip-Flop
- (e) During the transfer of data between the processor and memory we use :
- (i) Cache (ii) TLB
 (iii) Buffers (iv) Registers
- (f) Pipe-lining is a unique features of :
- (i) RISC (ii) CISC
 (iii) ISA (iv) IANA
- (g) The addressing mode which makes use of indirection pointers is :
- (i) Indirect Addressing Mode

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- (ii) Index Addressing Mode
 (iii) Relative Addressing Mode
 (iv) Offset Addressing Mode
- (h) The computer architecture aimed at reducing the time of execution of instructions is :
- (i) CISC
 (ii) RISC
 (iii) ISA
 (iv) ANNA

2. Discuss the basic organization of Computer System and explain the various units of a computer system.
3. What is the Instruction Set Architecture ? Explain different types of Instruction Set Architectures.
4. What are different types of Logic Gates ? Explain with the help of truth-tables and give an example of each.
5. What is a radix or base of the system ? With the help of this system briefly explain the various types of number system.

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6. What do you mean by Read Only Memory ; Explain the different types of ROM.
 7. Describe Cache Memory. What are the differences among direct mapping, associative mapping and set-associative mapping ?
 8. What is Memory Hierarchy ? Explain Cache and Virtual memory with differences.
 9. Write shorts notes on any **two** of the following :
 - (a) Computer organization and architecture
 - (b) Semiconductor Main Memory
 - (c) Direct Access Memory
 - (d) Floating Point Representation
 - (e) Direct and Indirect Addressing
 - (f) Number System

