 BCA(I)— Comp. Sys. Arch. (102) Core – 2

2019

Time : 3 hours

Full Marks : 70

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

The figures in the margin indicate full marks.

*Answer from **all** the Groups as directed.*

Group – A
(Compulsory)

1. Select the correct option of the following multiple choice question : 2×10 = 20

   (a) In boolean algebra, the OR operation is performed by which properties ?

   (i) Associative Properties

   (ii) Commutative Properties

   (iii) Distributive Properties

   (iv) All of these

(b) The NOR gate output will be high if the two inputs are :

(i) 00

(ii) 01

(iii) 10

(iv) 11

(c) Which of the following are known as universal gate ?

(i) NAND and OR

(ii) AND and OR

(iii) XOR and OR

(iv) Ex – NOR and XOR

(d) Which among following can be considered as most advanced ROM ?

(i) DRAM

(ii) EE PROM

(iii) RAM

(iv) PROM

(e) Which one of the following is volatile memory ?

(i) ROM

(ii) EPROM

(iii) DROM

(iv) RAM

(f) I/O Processor has direct access to ?

(i) Main Memory

(ii) Secondary Memory

(iii) Flash Memory

(iv) ROM

(g) RISC stands for :

(i) Risk Instruction Source Computer

(ii) Reduced Instruction Set Computer

(iii) Risk Instruction Set Computer

(iv) Risk Instruction Set Computing

(h) User programs intract with I/O devices through ?

(i) Operating System

(ii) Hardware

(iii) B uses

(iv) Processor

(i) The number of binary bits required to represent a hexadecimal digit is :

(i) 3

(ii) 4

(iii) 6

(iv) 8

(j) What is the (one)1's complements of 0001111 0010 1101 number ?

(i) 1111 0000 0010 1101

(ii) 1111 0000 1101 0010

(iii) 1111 1100 1010 1100

(iv) 1001 0010 1010 1100

Group – B

(Short-answer Type Questions)

Answer any **four** questions of the following : 5×4 = 20

2. What is Reduced Instruction Set Computer (RISC) ?

3. What is Virtual Memory ?

4. Explain DMA ?

5. Explain memory hierarchy in a computer system.

6. Describe boolean algebra.

7. What Multiplexers and Demultiplexers ? Explain it.

8. How do you improve the cache memory performance ?

9. Write short notes any **two** of the following :

   (a) Process control

   (b) Data transfor mode

   (c) Microprocessor

   (d) Bus and memory

Group – C

(Long-answer Type Questions)

Answer any **two** questions of the following : 15×2 = 30

10. Explain the logic gate in Timing Circuits.

11. What is flip-flop ? Discuss different types of flip-flop with suitable diagram and truth table.

12. What is asynchronous data transfer ? Explain in details.

13. Write short notes any three of the following ?

(a) Boolean algebra

(b) Multiplication Algorithm

(c) Associative memory

(d) I/O processor

(e) Shift micro operation

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During S.I operation the Serial input transfer bit into the right most position during a shift right operation.