

# COMPUTER SCIENCE

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## Paper First : 2017 Annual Computer Hardware

Time : Three Hours]

[Maximum Marks : 50

नोट : Attempt all questions. All questions carry equal marks.

### UNIT - 1

- 1.(a) Write down the evolution of computer system from PC-XT to Pentium PC.
- (b) Perform the following conversions :
  - (i)  $(79612)_{10} = (?)_2$
  - (ii)  $(101110101)_2 = (?)_{10}$
  - (iii)  $(A96D 2)_{16} = (?)_{10}$
  - (iv)  $(594.76)_{10} = (?)_2$
  - (v)  $(11011.1101)_2 = (?)_{10}$

OR

- (a) What is operating system ? Describe the types of operating system.
- (b) Perform the following operations :
  - (i)  $10110111 + 11011$  by 2' s complement
  - (ii)  $794 - 197$  by 9's complement

### UNIT - 2

- 2.(a) Write the following code system :
    - (i) ASCII code
    - (ii) EBCDIC code
  - (b) Describe the following gates : (i) AND (ii) OR  
(iii) NOR (iv) NAND (v) NOT
- OR
- (a) Describe the following coding system :
    - (i) 8421 code
    - (ii) Grey code
  - (b) Convert the following :
    - (i) 79At -> EBCDIC representation
    - (ii) 123 -> Excess 3 code

### UNIT - 3

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- 3.(a) Describe the following term in detail :
    - (i) Karnaugh map
    - (ii) De-Morgan's theorem
  - (b) Write notes on the following :
    - (i) Half and Full adder
    - (ii) Laws of Boolean Algebra
- OR
- (a) Write down the types of load such as : RTL, DITL and TTL.
  - (b) Explain the computer logic circuits : a2zSubjects.com
    - (i) EX-OR
    - (ii) EX-NOR circulatory

### UNIT - 4

- 4.(a) Describe the basic principle of the following : (i) Decoder encoder (ii) Multiplexers and demultiplexers
  - (b) What are Master-Slave flip-flops ?
- OR
- (a) Describe the clocked-RS flip-flop.
  - (b) What is Data Transmission ?

### UNIT - 5

- 5.(a) What is the synchronous counter ?
  - (b) Describe the following counters :
    - (i) Binary counter
    - (ii) Down counter
- OR
- (a) Explain the hierarchy of memory in computer.
  - (b) Explain the application of shift registers.

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