



BCE-003/007102

Seat No. _____

M.C.A. (CBCS) (Sem. I) Examination

January – 2016

CCA1002 : Computer Organization

Faculty Code : 003

Subject Code : 007102

Time : 3 Hours]

[Total Marks : 70

1 Answer the following multiple choice questions : **[15]**

[1] An addressing mode in which memory address is computed by adding up two registers plus an offset is known as :

- (a) Based-Indexing Addressing
- (b) Indexed Addressing
- (c) Register Indirect Addressing
- (d) Immediate Addressing

[2] PCI stands for _____

- (a) Peripheral Component Interconnect
- (b) Peripheral Computer Interconnect
- (c) Processor Computer Interconnect
- (d) Processor Cable Interconnect

[3] In virtual memory, chunks of program read in from disk is called _____

- (a) Chunks
- (b) Fragments
- (c) Segments
- (d) Pages

[4] Floating point numbers generally have their fraction (magnitude) part stored with leading 1 in leftmost position is called

- (a) Normalized form
- (b) De-normalized form
- (c) Simple form
- (d) None of the above

- [5] Convert the binary number 1001.0010 to decimal
- (a) 125
 - (b) 12.5
 - (c) 9.125
 - (d) 90.125
- [6] The output will be a LOW for any case when one or more inputs are zero in a(n) is :
- (a) OR gate
 - (b) NOT gate
 - (c) AND gate
 - (d) NAND gate
- [7] Which of the examples below expresses the distributive law of Boolean algebra ?
- (a) $A \cdot (B \cdot C) = (A \cdot B) + C$
 - (b) $A + (B + C) = (A \cdot B) + (A \cdot C)$
 - (c) $A \cdot (B + C) = (A \cdot B) + (A \cdot C)$
 - (d) $(A + B) + C = A + (B + C)$
- [8] Which of the following is correct for a gated D flip-flop ?
- (a) The output toggles if one of the inputs is held HIGH.
 - (b) Only one of the inputs can be HIGH at a time.
 - (c) The output complement follows the input when enabled.
 - (d) Q output follows the input D when the enable is HIGH.
- [9] Synchronous counters eliminate the delay problems encountered with asynchronous counters because the :
- (a) input clock pulses are applied only to the first and last stages
 - (b) input clock pulses are applied only to the last stage
 - (c) input clock pulses are not used to activate any of the counter stages
 - (d) input clock pulses are applied simultaneously to each stage

- [10] Decoder is a _____
- (a) Combinational circuit
 - (b) Sequential circuit
 - (c) Complex circuit
 - (d) Gate
- [11] A _____ is a common pathway between multiple devices.
- (a) Bus
 - (b) ALU
 - (c) CPU
 - (d) CU
- [12] Convert $(345)_8 = (?)_{10}$
- (a) 229
 - (b) 227
 - (c) 228
 - (d) 230
- [13] A circuit that converts n inputs to 2^n output is called _____.
- (a) Encoder
 - (b) Decoder
 - (c) Comparator
 - (d) None of the above
- [14] What is a shift register that will accept a parallel input, or a bidirectional serial load and internal shift features, called ?
- (a) tristate
 - (b) end around
 - (c) universal
 - (d) conversion
- [15] The addressing mode where you directly specify the operand value is :
- (a) Direct
 - (b) Immediate
 - (c) Definite
 - (d) Relative

- 2 Attempt Any Five of the following : [15]**
- [1] Write a brief note on floating point representation.
 - [2] What is cache memory ?
 - [3] Convert the following binary number to equivalent octal, decimal and hexadecimal system.
10011011101
 - [4] Draw karnaugh map for : $\overline{xyz} + x\overline{yz} + \overline{xy}z$.
 - [5] Prepare a truth table for the Boolean expression :
 $A(B\overline{C} + \overline{BC})$
 - [6] What is ICs ? Write various classes based on the number of gates ICs are categorized.
- 3 Attempt Any Three of the following : [15]**
- [1] What is a role of ALU ? Explain 1-bit ALU with circuit diagram.
 - [2] What is Multiplexer ? Draw eight input multiplexer circuit diagram.
 - [3] List various addressing modes and explain any two in detail.
 - [4] What is counter ? Draw and explain 4-bit ripple counter.
- 4 Attempt Any Two of the following: [15]**
- [1] What is bus? Explain in detail ISA and PCI bus.
 - [2] Explain sum of product? Convert following expression to sum-of-product form.
 $(A + C)(\overline{AB} + AC)(\overline{AC} + \overline{B})$
 - [3] Draw and explain half adder and full adder circuit with truth-table.
- 5 Attempt Any One of the following: [10]**
- [1] Explain memory hierarchy and write a note on Main memory and Auxiliary memory.
 - [2] What is Flip Flop? Explain in detail SR flip flop and JK flip flop.