



**RAQ-003-1032003**

Seat No. \_\_\_\_\_

**B. C. A. (Sem. II) (CBCS) (W.I.F. 2016)  
Examination**

**March / April - 2019**

**CS - 09 : Computer Organization & Architecture**

**Faculty Code : 003**

**Subject Code : 1032003**

Time :  $2\frac{1}{2}$  Hours]

[Total Marks : 70

- 1 (a) Attempt following questions : 4
- (1) MSI Stands for \_\_\_\_\_.
  - (2) A \_\_\_\_\_ is a group of devices that store digital duty.
  - (3) A demultiplexer is also known as \_\_\_\_\_.
  - (4) An inverter is also called a \_\_\_\_\_ gate.
- (b) Answer in brief : (any **one** out of two) 2
- (1) List the names of Universal Gates.
  - (2) What is Boolean algebra ?
- (c) Answer in detail : (any **one** out of two) 3
- (1) Draw a K-map for  
 $F(a, b, c, d) = \sum m(0, 2, 4, 5, 8, 10, 12, 13)$
  - (2) Explain combinational circuit.
- (d) Write a note on : (any **one** out of two) 5
- (1) Explain AND, OR, NOT Logic Gates.
  - (2) Explain SR Flip Flop in detail.

- 2 (a) Attempt following questions : 4
- (1) A register that can shift in both directions is called a \_\_\_\_\_ shift register.
  - (2) IC stands for \_\_\_\_\_.
  - (3) BCD \_\_\_\_\_.
  - (4) A Multiplexer is also known as data distributor. True or False ?
- (b) Answer in brief : (any **one** out of two) 2
- (1) Draw the logic circuit for given below Boolean function.  

$$F = (AB) + (AB'C) + (B'C')$$
  - (2) List different processor register.
- (c) Answer in detail : (any **one** out of two) 3
- (1) Explain decoders ( $2 \times 4$ )
  - (2) Explain 4 bit simple register.
- (d) Write a note on : (any **one** out of two) 5
- (1) Explain Multiplexer ( $4 \times 1$ )
  - (2) Explain IC in detail.
- 3 (a) Attempt following questions : 4
- (1) Multiplication of  $(111)_2$  by  $(101)_2$  is \_\_\_\_\_.
  - (2) The Hexadecimal digits are 0 to 9 and A to \_\_\_\_\_.
  - (3) Division of 100011 by 101 is \_\_\_\_\_.
  - (4) A four bit number is given as 1001. its 1's compliment is \_\_\_\_\_.

- (b) Answer in brief : (any **one** out of two) 2
- (1) Explain parity bit.
  - (2) Divide 100001 by 110.
- (c) Answer in detail : (any **one** out of two) 3
- (1) Write a note on floating point representation.
  - (2) What is parity bit ?
- (d) Write a note on : (any **one** out of two) 5
- (1) Explain error detecting code using parity bit.
  - (2) Write a note on fixed point representation.
- 4 (a) Attempt following questions : 4
- (1) Stack means Last in First out (LIFO).  
True or False ?
  - (2) The register that holds the address for the stack is called \_\_\_\_\_.
  - (3) Full form of ALU \_\_\_\_\_.
  - (4) The process of deleting an item from the stack is known as \_\_\_\_\_.
- (b) Answer in brief : (any **one** out of two) 2
- (1) What is interrupt ?
  - (2) Define term BUS.
- (c) Answer in detail : (any **one** out of two) 3
- (1) Write a note on ALU.
  - (2) Explain Police Notation.
- (d) Write a note on : (any **one** out of two) 5
- (1) Explain major components of CPU.
  - (2) Explain General Register Organization.

- 5 (a) Attempt following questions : 4
- (1) Full form of DMA \_\_\_\_\_.
  - (2) Address bus is bidirectional. True or False ?
  - (3) Full form of IOP \_\_\_\_\_.
  - (4) Full form of BR \_\_\_\_\_.
- (b) Answer in brief : (any **one** out of two) 2
- (1) What is memory bus ?
  - (2) What is control word ?
- (c) Answer in detail : (any **one** out of two) 3
- (1) Explain bus structure.
  - (2) Explain direct memory access.
- (d) Write a note on : (any **one** out of two) 5
- (1) Explain DMA Controller.
  - (2) Explain Input Out Processor (IOP).
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