NBH-003-1032003 Seat No. _____

B. C. A. (Sem. II) (CBCS) Examination
April/May - 2017
CS-09 : Computer Organization & Architecture

Faculty Code : 003
Subject Code : 1032003

Time : Hours] [Total Marks : 70

1 (a) Answer the following : 4

(1) A flip flop can store _____ bit of duty.

(2) An inverter is also called a _____ gate.

(3) The NAND function is the complement of the AND function. True or False?

(4) AND, OR and NOT are considered as universal gate. True or False?

(b) Answer any one in brief : 2

(1) What is Boolean Algebra?

(2) Explain combinational circuit.

(c) Answer any one in detail : 3

(1) Explain AND, OR, NOT gate with truth table.

(2) Explain Half Adder.

(d) Answer any one : 5

(1) Explain Karnaugh Map with example.

(2) What is Flip Flop? Explain SR-flip flop.

2 (a) Answer the following : 4

(1) Give full form of TTL.

(2) A register capable of shifting in one direction only is a unidirectional shift register.
True or False?

(3) A multiplexer is also known as data distributor. True or False?

(4) The transfer of new information into a register is referred to as loading the register. True or False?

(b) Answer any one in brief : **2**

(1) What is multiplexer?

(2) What is register?

(c) Answer any one in detail : **3**

(1) Explain 4 X 1 multiplexer.

(2) Write a note on unidirectional shift register.

(d) Answer any **one** : **5**

(1) What is decoder? Explain 3 X 8 decoder.

(2) Explain Asynchronous 4 bit Binary Counter.

3 (a) Answer the following : **4**

(1) The Radix of the binary number is _____.

(2) A floating-point number is said to be normalized if the most significant digit of the mantissa is nonzero. True or False?

(3) The first part represents a signed, fixed-point number called the mantissa. True or False?

(4) What is 2's complement of 10001110?

(b) Answer any one in brief : **2**

(1) Multiply the binary numbers 1000 and 1001.

(2) Divide 100001 by 110.

(c) Answer any one in detail : **3**

(1) Write a note on floating point representation.

(2) What is parity bit?

(d) Answer any one : 5

(1) Explain error detecting code using parity bit.

(2) Write a note on fixed point representation.

4 (a) Answer the following : 4

(1) Stack means last-in, first-out (LIFO).
True or False?

(2) A register is a group of _____ with each flip flop capable of storing one bit of information.

(3) The register that holds the address for the stack is called a _____.

(4) Give full form of RPN.

(b) Answer any one in brief : 2

(1) What is Interrupt?

(2) What is memory stack?

(c) Answer any one in detail : 3

(1) Explain Polish notation.

(2) Explain major components of CPU.

(d) Answer any one : 5

(1) Explain register stack.

(2) Explain general register organization.

5 (a) Answer the following : 4

(1) A _____ command is issue to activate the peripheral and to inform it what to do.

(2) A _____ command is responsible for transferring the data from the bus into peripherals.

(3) The DMA is first initialized by the CPU.
True or false?

(4) Address bus is bidirectional.
True or false?

(b) Answer any one in brief : 2

(1) What is memory bus?

(2) List and explain types of commands an interface receives.

(c) Answer any one in detail : 3

(1) Write a note on direct memory access.

(2) Explain bus structure.

(d) Answer any one : 5

(1) Write a note on DMA controller.

(2) Write a note on IOP.
