647510 **0305212C3030** **Seat No: _____**

B.C.A Semester - 2 (CBCS) Examination
March/April- 2019 (Old Course)
CS-09 COMPUTER ORGANIZATION & ARCHITECTURE
(CORE)

Time: 2:30 Hours **Marks: 70**

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate marks.

Que-1 (A) **Answer following Questions** **[04]**

1. _____ and _____ Gates are known as Universal Gates.
2. _____ is a modified OR gate that produces a HIGH output when only one of the input is HIGH.
3. The combinational circuit that performs the arithmetic addition of two bits is called_____.
4. The _____ is an electronic circuit that gives a HIGH output (1) only if all its inputs are high

Que-1 (B) **Answer Any One** **[02]**

1. Explain OR Gate with truth table.
2. What is Boolean algebra?

Que-1 (C) **Answer Any One** **[03]**

1. Explain Half Adder.
2. Explain Sequential Circuit.

Que-1 (D) **Answer Any One** **[05]**

1. Write short note on JK Master-Slave Flip flop.
2. Write short note on Karnaugh map.

Que-2 (A) **Answer following Questions** **[04]**

1. A _____ is a combinational circuit that converts binary information from n coded inputs to a maximum of 2n unique outputs.
2. A _____is combinational circuit that selects binary information from one of Many input lines and directs it to a single output line.
3. A _____ is a group of flip-flops capable of storing one bit of information.
4. A register capable of shifting its binary information in one or both directions is called a _____.

Que-2 (B) **Answer Any One** **[02]**

1. Write the application of the Multiplexer.
2. Explain Encoder.

Que-2 (C) **Answer Any One** **[03]**

1. Draw the block diagram of register
2. Explain binary counter

Que-2 (D) **Answer Any One** **[05]**

1. Construct 4-to-16 line decoder using our 2-to-4 line decoder
2. Explain parallel register and shift register.

Que-3 (A) **Answer following Questions** **[04]**

1. 11001 / 10 = _____
2. 1110 * 101 = _____
3. 11010 / 11 = _____
4. 1101 * 10 = _____

Que-3 (B) Answer Any One **[02]**

1. Explain rules of binary division.
2. Calculate : 1011.101 X 101.01

Que-3 (C) Answer Any One **[03]**

1. Explain fixed point representation.
2. Explain binary multiplication and binary division rules.

Que-3 (D) Answer Any One **[05]**

1. Explain parity bit with error detection code.
2. Explain floating point representation.

Que-4 (A) Answer following Questions **[04]**

1. The register that holds the address of the stack is called a _____ because its value always points at the top item in the stack.
2. The common arithmetic expressions are written in _____ with each operator written between the operands.
3. The _____ of computer system is the place where the actual execution of instruction takes place during the processing operation.
4. _____ is a signal send by external device to the processor to perform a task When the processor is currently performing a certain task.

Que-4 (B) Answer Any One **[02]**

1. Explain major component of CPU.
2. What is Control Word?

Que-4 (C) Answer Any One **[03]**

1. Write a note on register stack.
2. What is interrupt? Explain types of interrupts.

Que-4 (D) Answer Any One **[05]**

1. Discuss polish and reverse polish notation
2. Explain General Register Organization in Detail with Micro Operation?

Que-5 (A) Answer following Questions **[04]**

1. A collection of cables through which data is transferred to one peripheral device to another peripheral device is known as _____.
2. _____ is bi-directional bus which allows the transfer of data between the Microprocessor and memory or peripheral devices.
3. Full Form of DMA is _____.
4. _____ connects processor with main memory.

Que-5 (B) Answer Any One **[02]**

1. Explain following data transfer method of DMA.
   a) Burst transfer b) Cycle stealing
2. Explain different I/O commands.

Que-5 (C) Answer Any One **[03]**

1. Explain Memory stack
2. Write short note on IOP

Que-5 (D) Answer Any One **[05]**

1. Write short note on DMA.
2. Write short note on I/O Interface.

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