

SARDAR PATEL UNIVERSITY
 Post Graduate Diploma in Computer Applications (PGDCA)
 Semester – I External Examinations
PGDCA-103 Logical Organization of Computers
 Monday, April 4th, 2016

Time: 02:30 p.m. to 05:30 p.m.

Max Marks: 70

Q-1 Choose the most appropriate option for each question:

[8]

1. A nibble is a group of _____ bits.

- | | |
|------|-------|
| A. 4 | B. 16 |
| C. 8 | D. 32 |

2. Full form of CPU

- | | |
|-----------------------------|-----------------------------|
| A. Central Processing Unit | B. Central Process Unit |
| C. Computer Processing Unit | D. Central Programming Unit |

3. $(1000110100)_2 = (\quad)_8$

- | | |
|---------|------------------|
| A. 1063 | B. 1064 |
| C. 164 | D. None of these |

4. In hexadecimal number system, A is equal to _____ decimal number

- | | |
|-------|-------|
| A. 10 | B. 11 |
| C. 17 | D. 18 |

5. An invert gate is also called a _____ gate.

- | | |
|---------|---------|
| A. NOT | B. XNOR |
| C. NAND | D. NOR |

6. Half adder consist of _____ & _____ Gates

- | | |
|--------------|-------------|
| A. XOR, AND | B. XOR, OR |
| C. XNOR, AND | D. XNOR, OR |

7. A combinational circuit that performs the arithmetic addition of three bits is called _____

- | | |
|-----------------|---------------|
| A. binary adder | B. decoder |
| C. multiplexer | D. Full Adder |

8. De Morgan's first theorem says that a NOR gate is equivalent to a _____.

- | | |
|----------------|----------------|
| A. bubbled OR | B. bubbled NOR |
| C. bubbled AND | D. AND bubbled |

Q-2 Answer the following questions (Any Seven):

[14]

1. List the steps of Fetch decode execute cycle.
2. Draw the Block diagram of a simple computer.
3. Define: Interrupts.
4. What is Instruction Register?
5. Describe the OR gate.
6. Draw Circuit diagram for $\bar{A} B \bar{C} + \bar{B} C$
7. Define: Binary Adder.

- 8. Define Logic Circuit and Boolean Algebra
- 9. What is a Parity bit?

Q-3 Answer the following questions:

- A. Discuss Pipelining for Instruction-Level Parallelism. [6]
- B. Explain sign magnitude method for integer representation. [6]

OR

- B. Write a note on different types of instructions. [6]

Q-4 Answer the following questions:

- A. Explain IEEE Floating Point representation. [6]
- B. Write a note on the working of laser printers. [6]

OR

- B. Discuss the designing criteria for Instruction Formats. [6]

Q-5 Answer the following questions:

- A. Explain AND, NOR, XOR gate with truth tables. [6]
- B. Explain half adder in detail. [6]

OR

- B. What is demultiplexer? Explain 1 to 8 demultiplexer in detail [6]

Q-6 Answer the following questions:

- A. Write a note on shift Right register in detail. [6]
- B. Explain Ring counter. [6]

OR

- B. Discuss Clocked and Unclocked D Flip-Flop. [6]

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