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SARDAR PATEL UNIVERSITY  
PGDCA Semester 1 EXAMINATION 2016

Monday, 24<sup>th</sup> October, 2016

PGDCA 103 - LOGICAL ORGANIZATION OF COMPUTERS

Time: 10:00 am - 01:00 pm

Marks: 70

Q1. Select the most appropriate answer of the following questions: [8]

1. \_\_\_\_\_ is a translator that translates one statement at a time and executes it immediately.  
A. Compiler  
B. Interpreter  
C. Assembler  
D. None of these
2. The full form of ASCII is \_\_\_\_\_.  
A. American Standard Code for Information Interchange  
B. Australian Standard Code for Information Interchange  
C. American Standard Code for Internet Information  
D. None of these
3. \_\_\_\_\_ Device converts the document image into the digital form so that it can be fed into the computer.  
A. Printer  
B. Scanner  
C. Plotter  
D. Keyboard
4. In \_\_\_\_\_ storage unit, the data gets lost when power is turned off or interrupted.  
A. Volatile  
B. Non-Volatile  
C. Secondary  
D. None of these
5. \_\_\_\_\_ addressing is also known as implicit addressing.  
A. Immediate  
B. Direct  
C. Stack  
D. None of these
6. \_\_\_\_\_ Register holds the address of the next instruction to be executed.  
A. Memory address  
B. Program Counter  
C. Memory Buffer  
D. None of these
7. \_\_\_\_\_ Logical circuit has two inputs and two output.  
A. Half Adder  
B. Full Multiplier  
C. Full Multiplexer  
D. None of these
8. Race condition arises in JK flip flop when both J & K are \_\_\_\_\_.  
A. 0  
B. 1  
C. 2  
D. None of these

Q2. Answer the following questions: [Any seven] [14]

1. State characteristics of computer.
2. Convert the hexadecimal number 9AFC into binary number.
3. List different types of Input / Output devices.
4. Write only steps for Instruction execution cycle.
5. What is immediate addressing mode?
6. Write truth table for AND gate with two inputs A and B.
7. Define Boolean algebra.
8. Define multiplexer and give its use.
9. List different types of latches.

(1)

- Q3 A Draw the block diagram of computer and explain each of its functional units. [6]  
Q3 B What is hamming code? Contract odd parity Hamming code for "E". [6]
- OR
- Q3 B Write a note on CPU organization. [6]  
Q4 A List types of Processor-level Parallelism. Explain any one in detail with diagram. [6]  
Q4 B List different Addressing Types. Explain Direct and Indirect Addressing. [6]
- OR
- Q4 B Write a note on secondary storage devices. [6]  
Q5 A What is a trap? How it is different from interrupt? Give uses of traps and interrupts. [6]  
Q5 B State and prove De-Morgan's laws. [6]
- OR
- Q5 B Explain (i) NAND GATE (ii) NOR GATE with their truth tables. [6]  
Q6 A Discuss integrated circuits in detail. [6]  
Q6 B Explain Shift Register in detail. [6]
- OR
- Q6 B What is flip flop? Explain RS NOR flip flop in detail. [6]

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