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SEAT No. _____

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[22]

SARDAR PATEL UNIVERSITY
 External Examination (CBCS)
 B. Sc. (IT) - IVth Semester
 US04CINT01: Computer Organization & Digital Computer Electronic
 9th April, Monday - 2018

Time : 10:00 am to 1:00 pm

Total Marks :70

Q-1 Select an appropriate option.

10

1. In Octal Number system, base is _____.
 (a) 8 (b) 7 (c) 9 (d) None of these
2. ALU stands for _____.
 (a) Arithmetic Logic Unit (b) Arithmetic Logic Usage
 (c) Arithmetic Logic Unit (d) None of these
3. Computer hardware refers to the _____ parts of a computer.
 (a) Logical (b) Physical (c) Data (d) None of these
4. _____ performs operations such as addition and Boolean and needed to carry out the instructions.
 (a) Arithmetic Logic Unit (b) Registers
 (c) Control Unit (d) None of these
5. _____ holds the instruction currently being executed.
 (a) Instruction Register (b) Program counter
 (c) Control Register (d) None of above
6. _____ is a collection of parallel wires for transmitting address, data and control signals.
 (a) Bus (b) Transmitter (c) Control Unit (d) Program Counter
7. A gate is a logic circuit with one or more input signals but only _____ output signal.
 (a) Two (b) One (c) Three (d) Four
8. The _____ gate has two or more input signals. All inputs must be high to get a high output.
 (a) AND (b) OR (c) NAND (d) NOR
9. A multiplexer has _____.
 (a) One input and several outputs (b) One input and one output
 (c) Several inputs and several outputs (d) Several inputs and one output
10. In k-map, octets eliminates _____ variable(s) and their complements.
 (a) one (b) two (c) three (d) four

[P. T. O.]

- Q-2 Answer the following questions. (Attempt any TEN) 20
1. Define the terms 'Hardware' and 'Software'.
 2. What are the five basic operations performed by any Computer System?
 3. List the base and radix of Binary, Octal and Hexadecimal number system.
 4. What do you mean by instruction-level parallelism?
 5. What is program counter?
 6. What is instruction register?
 7. What is logic gate? List all logic gates.
 8. Explain NOR gate.
 9. Explain XOR gate.
 10. Define Decoder.
 11. Define Karnaugh map.
 12. What is maxterm?
- Q-3
- (a) Draw a block diagram of Basic Organization of a Computer System and explain the functions of the various units. 5
- (b) Explain the conversion of Hexadecimal to Decimal with suitable example. 5
- OR
- Q-3
- (a) Write a brief note on evaluation of Computers. 5
- (b) What is the shortcut method of Octal to Binary conversion? Explain with example. 5
- Q-4
- (a) Describe the Hemming code by giving an example. 5
- (b) Explain in detail Pipelining. 5
- OR
- Q-4
- (a) Explain the instruction execution cycle of a CPU. 5
- (b) Explain in detail Multiprocessors. 5
- Q-5
- (a) Explain De'Morgan first and second theorem. 5
- (b) Explain Full-Adder with truth table and logic diagram. 5
- OR
- Q-5
- (a) Explain in detail the Binary Adder. 5
- (b) Explain 2's complement adder and subtractor in detail. 5
- Q-6 Explain: (i) Encoder (ii) Comparator 10
- OR
- Q-6 What is Multiplexer? Explain 8x1 multiplexer in detail. 10