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SARDAR PATEL UNIVERSITY

External Examination

M.Sc-Information Technology (Integrated) – SEMESTER-I

Course No: PS01CIIT02

Subject : Computer Organization

Date : 04-12-2012

Time : 10:30 a.m to 01:30 p.m

Marks : 70

Q.1 Multiple choice questions.

[10]

- i. _____ 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 above
- ii. In Hexadecimal Number system, B stands for _____.

a) 10	b) 11
c) 12	d) None of above
- iii. Secondary storage of a computer is also known as _____.

a) Hard Disk	b) Auxiliary storage
c) Main Memory	d) None of above
- iv. The OR gate has two or more input signals. If any input is _____, the output is high.

a) high	b) low
c) both A and B	d) none
- v. ASCII stands for:

a) America standard coded information interchange
b) American standard code for information interchange
c) America standard coded interchange information
d) American standard coded interchange information
- vi. Array processor is referred as

a) SISD	b) SIMD
c) MISD	d) MIMD
- vii Which memory is permanent type memory

a) ROM	b) RAM
c) EPROM	d) EEPROM
- viii What is the full form of PC register

a) Pointer code	b) Program counter register
c) Perfect combination register	d) None of these
- ix Which one is the non-impact printer

a) drum printer	b) laser printer
c) character printer	d) none of these
- x. If there is a mechanical contact between the print head and paper then this kind of printer is known as

a) Impact printer	b) Non-impact printer
c) Scanner	d) None of these

Q.2 Shot answer (Attempt any ten questions)

[20]

- a. Define the terms 'Hardware' and 'Software'.
- b. Show the short method of converting Hexa-decimal number to decimal number by giving an example.
- c. Convert the following :
 - i) $(4C)_{16} = (?)_{10}$
 - ii) $(101101)_2 = (?)_{10}$
- d. Define Logic Gates. List the basic gates.
- e. Explain with symbol and truth table (for two inputs and three inputs) the following gates: a) NAND b) XOR
- f. Draw the circuit and write the truth table for the equation: $A'B+B'C+AC'$
- g. What is multicomputer?
- h. Differentiate between primary memory and secondary memory.
- i. What is Seek time?
- j. What is a mouse.
- k. Describe impact printers.
- l. What is stack addressing?

Q.3 Draw a block diagram of Basic Organization of a Computer System and explain the functions of the various units. Also, describe the evolution of computers.

[10]

OR

What is Number System? Explain the various number systems you know. Also, explain the binary addition by giving example.

[10]

Q.4 [A] State and prove De'Morgan first and second theorem.

[05]

[B] Explain Hamming's error detection and correction code.

[05]

OR

Q.4 [A] Explain the following laws of Boolean algebra:

[05]

i) Associative Law ii) Commutative Law iii) Distributive Law

[B] Explain the rules of Boolean algebra.

[05]

Q.5 [A] Explain in detail Array computers.

[05]

[B] Explain in detail the Von Neumann machine.

[05]

OR

Q.5 [A] Explain in detail pipelining.

[05]

[B] Explain the storage organization of magnetic disks.

[05]

Q.6 [A] Explain the following addressing modes:

[06]

i) Immediate addressing. ii) Indexed addressing.

iii) Register addressing

[B] Write a short note on key board.

[04]

OR

Q.6 [A] Explain the following addressing modes:

[06]

i) Direct addressing. ii) Register Indirect addressing

iii) Based-Indexed addressing

[B] Write a short note on scanner

[04]

—X—X—