Guru Jambheshwar University of Science & Technology

MCA-101 : Computer Fundamentals

Total Marks : 100 **External : 70**

Time : 3 Hour **Internal : 30**

Note: Examiner is requested to set eight questions covering the whole syllabi. A candidate is required to attempt any five questions. All questions shall carry equal marks.

Computer basics, Representation of characters in computers, Representation of intergers, Representation of Fractions, Hexadecimal representation of numbers Decimal to binary Conversion.

Description of computer input units, other input methods, Computer output units. Memory cell, memory Organization, Read Only memory, Serial Access memory, Physical devices used to construct memories, Magnetic Hard Disk, Floppy Disk Drives, CDROM, Magnetic tape drives.

Binary addition, substraction; signed numbers, Two's Complement representation of numbers, Addition/Substraction of numbers in 2's Complement notation, Binary multiplication, Binary division, Floating Point representation of numbers.

Why Programming Language ? Assembly language, Higher level programming languages, Some high level languages.

Why do we need an OS?, Batch operating system, Multiprogramming Operating system, Time sharing operating system, Personal Computer Operating System, Unix Operating System, On line and Real time system.

First Generation of Computers, Second generation, Third generation, Fourth generation, Fifth generation, Classification of Computers, Distributed Computer System, Parallel Computer.

Types of Communication with analog computers, need for computer communication networks, Internet and World Wide Web, Characteristics of Communication Channels, Allocation of Channel, Physical communication media, Computer Network Topologies, Communication Protocols, Local Area Networks, ATM Networks, Interconnecting Networks.

Note : Maximum Marks:-100

(70% Marks will be awarded by the University & **30% M**arks will be awarded by Institute)

References :

1. Rajaraman. V., “Fundamental of Computers” (2nd Edition), Prentice Hall of India, “New Delhi, 1996.
2. Sanders, D.H. “Computers Today”, McGraw Hill, 1988.
3. Trainer, T .et.al., “Computers” (4th Edition), McGraw Hill, 1994