17BCA1713: Computer Fundamentals

Teaching Hours: 4 Hrs/week **Marks: Main Exam: 80**
IA: 20

UNIT I 10Hrs

Introduction: Computer, data processing, characteristic features of computers, computer evolution to present form, computer generation.

Basic computer organization: Basic operations performed by computers, basic organization of computer system, input units and its functions, output units and its functions, storage units and its functions, types of storage.

UNIT II 12Hrs

Number systems: non-positional number system, positional number system, decimal, binary, octal, and hexadecimal number systems. Conversion from decimal to binary and vice-versa.

Computer Codes: Computer data, computer codes: representation of data in binary, commonly used computer codes, collating sequence.

Computer arithmetic: Basic arithmetic operations using binary numbers.

UNIT III 12Hrs

Processor and memory: Internal structure of processor, memory structure, types of processors, main memory organization, random access memory, read only memory, cache memory.

Secondary storage: secondary storage devices and their needs, commonly used secondary storage devices, sequential and direct access storage devices, basic principles of commonly used secondary storage devices (magnetic disk, optical disk, flash drives, memory card, disk array).

IO devices: commonly used input output(IO) devices.

UNIT IV 08Hrs

Software: Software and its relationship with hardware, types of softwares, relationship among hardware, system software, application software and users of computer systems, steps involved in software development, firmware, middleware.

Application software case study: MS-Word: editing and formatting documents.

Overview of operating system: Definition, functions of operating system, concept of multiprogramming, multitasking, multithreading, multiprocessing, time-sharing, real time, single-user & multi-user operating system.

UNIT V 08Hrs

Windows OS- Basics of Windows, basic components of windows, icons, taskbar, activating windows, using desktop, title bar, running applications, exploring computer, managing files and folders, copying and moving files and folders. Control panel – display properties, adding and removing software and hardware.

Linux OS- Basics of Linux OS, Introduction to bash shell, Basic Commands (ls,cd,tail,cat,mkdir), commands to work with file(mv,cp,rm) , text editor (vim), Stream text editor (grep, sed, and awk), STDERR,STDOUT,STDIN, Compression Tar, gzip and bzip2, easily accessible tools in linux.

References:

1. Computer Fundamentals, P. K. Sinha and Priti Sinha, Sixth Edition, BPB publications.
2. ReemaThareja, Fundamentals of Computers, Oxford Higher Education, Oxford University Press.
3. S. K. Basandra, Computers Today ,Galgotia Publications.
4. E. Balaguruswamy, Fundamentals of Computers, McGraw hill

Additional Reading:

5. Peter Norton, Introduction to Computers , 6th Edition, Tata McGraw Hill
6. Xavier C. , Introduction to Computers and Basic Programming, New age International,
7. Rajaraman, V., Adabala, Neeharika, Fundamentals of Computers, PHI
8. Computer Concepts and Applications : http://uwf.edu/clemley/cgs1570w/notes, https://www.tutorialspoint.com/computer_fundamentals/index.htm
9. Computers in education: http://www.mhhe.com/peternorton