

## SECTION - A

1. **Electronics** : Solid State device-physics, characteristic and model logic families-DTL, RTL,TTL, cMOS, nMos, logic design-Binary arithmetic, Number system, Codes Boolean algebra circuit minimization, combinational circuits, Synchronous, sequential circuits, Asynchronous sequential circuits, flip flops, counter and shift register, Karnaugh map, encoder, decoder, multiplexer, demultiplexer, etc.

2. **Computer programming and Data structures** : Programming in FORTRAN-PASCAL and C, syntax and semantics, variables, control flow, arithmetic and Boolean expression, structural programming, Sub-Programming, Algorithms, Array, Stack, Queue, Linked list, Tree, Binary tree, B-tree, Tree traversal, internal sorting techniques, object oriented programming.

3. **Microprocessor** : Organization and Programming of 8 bit microprocessor, microprocessor, microprocessor support chips, (PPI, PIC, DMA controller etc.) interfacing memory and I/O devices, microprocessor development tools, microprocessor based system design. Introduction to 16 and 32 bit microprocessor, 8085 and 8086 microprocessor.

4. **System Software** : Microprocessor and assemblers, linker, loader, monitor, editor, relocation, re-entrant routine, coroutine.

## SECTION - B

1. **Computer Architecture** : Micro instructions, memory organization, cache memory, virtual memory, stack array processor, pipeline processor, interconnection scheme for parallel processing, data flow machines, Internal structure of RAM, ROM, PAL and DRAM, SCSI Hard disk, CISC and RISC m/cs.

2. **Operating System** : Function and Component of OS, Batch processing, time sharing, Device driver, File system, process scheduling, concurrent processes, memory management, swapping segmentation and paging, virtual memory, disk scheduling, deadlock, case study of DOS and UNIX.

3. **Compiler Design Programming languages** : Lexical analysis, grammar, syntax analysis, topdown and bottom up parsing, semantic analysis, symbol table, error detection and recovery code generation and optimization. Data abstraction, Design philosophy of pascal, functional languages, NFA and DFA, Study of compiler Design tools (e.g. YACC),

4. **Data Processing** : File organization techniques, performance of sequential, indexed sequential, indexed, hashed inverted and multiring files, DBMS, relational data model, integrity constraints, relational algebra, relational calculus, normalization, concurrency control.

5. **Computer Graphics** : Graphics I/O devices, Display adapters, CGA, EGA, VGA, 2D line and curve drawing, 2D transformation windowing, curves of 3d surfaces, 3D modeling and transformation, 3D viewing Hidden line and surface removal, shading, device independent graphics system.

---