

External Marks: 80

Internal Marks: 20

Time: 3 Hours

Note: Paper setter will set nine questions in all. Question No. 1 comprising of five short types questions carrying four (4) marks each is compulsory. It covers the entire syllabus. Answer to each question should not be more than one page. Candidate is required to attempt four questions from the remaining eight questions carrying 15 marks each.

Introduction to computers: definition, components and characteristics of computers; input and output devices: memory and mass storage devices; memory hierarchy, RAM, ROM, EPROM, PROM and other types of memory, cloud memory; logical organization of computer.

Number systems, binary arithmetic operations. character codes and error detecting and correcting codes. Boolean algebra, Boolean functions, truth tables, simplifications of Boolean functions, digital logic gates. combinational logic- adders subtractions, encoders, decoders, multiplexors, demultiplexors. sequential logic- flip flops, shift registers, counters, memory organization semiconductor RAMs and ROMs; machine instructions, instruction formats, addressing modes, instruction cycles; concept of micro-programming; I/O interface, I/O transfer - program - controlled, interrupt controlled, direct memory access.

Computer software – introduction, types of software - system, application and utility software; programming languages; introduction to operating system: types and function of operating system; real time applications; operating systems for tabs, mobile phones, etc. – Android, etc; open source software: an overview, Linux Ubuntu; concepts of translators, linkers and loader.

Application software: spreadsheets, word processors, database management software; networks basic, types of networks, topologies, media, hardware and software required for networking.

Practical: A student must be able to work on different operating systems – Windows, Linux Mac, Android, and Chrome.

REFERENCES

- Sinha, P.K., Computer Fundamentals, BPB Publications.
- Mano, M. Morris, Digital Logic and Computer Design, Prentice Hall of India Pvt. Ltd
- Radhakrishnan, T. Computer Design, Prentice Hall of India Pvt. Ltd