

**Total Marks: 100**

**Course Outline**

Note: Candidates will be asked to attempt total five questions including one compulsory objective type question. They will attempt at least one question from each section. Each question will carry 20 marks.

**SECTION-A**

**Computer Architecture**

Introduction to modern machine Architecture, Storage Hierarchy Main/Virtual/Cache/Secondary Memory, CPU, ALU, Peripheral communication, Designing of Instruction set, Stored program concept. Introduction to parallel computing; SIMD/MIMD.

**Operating System**

Functions/Types of operating systems, Processes, Inter-process, Communication/Synchronization/Coordination, Process Scheduling Policies, Virtual Memory Management Techniques: Paging/Segmentation, File Management Systems.

**Computer Networks**

LAN/WAN/MAN, Communication channels, Internetworking, Internet, Network layer structure, ISO Internet Protocol, OSI/TCP/IP reference model.

**SECTION - B**

**Structured and Object Oriented Programming**

Basics of C/C++ environment, memory concepts. operators, control structures, selection structures, Array & functions/methods, classes & data Abstractions, inheritance and polymorphism.

**Data Structures and Algorithms**

Pseudo language, Functions, Iteration, Recursion, Time/Complexity Analysis, Stacks Queue, hashing. linked list, Searching; Sequential. Binary, Soiling Algorithms, Graphs Algorithms, Tree Algorithms, Trees, ADTs, Implementation using Structured/object oriented languages.

**Software Engineering**

Introduction to Software Engineering, Software life cycle, Software Design Methodologies: Structured/Object oriented, Software documentation and Management, Introduction to CASE tools.

**SECTION - C**

**Data Base Management**

Data Models, E-R Models, Relational Database concepts, SQL, Normalization, Database Design.

**Web Programming**

HTML, CGI, PERL, JAVA: Applet/Script, WWW, Web based unit face Design.

**Computer Graphics**

Fundamentals of input, display and hard copy devices, scan conversion of geometric primitives. 2D and 3D geometric transformations, clipping and windowing, scene modeling and animation, algorithms for visible and surface determination.

**Suggested Books**

Title	Author
1. Computer Concepts, 3rd Edition, ITP, 1998	J.J. Parsons & D. Oja
2. Mathematical Structures for Computer Science, Freeman & Company	G.L. Gersting
3. JavaScript: The Definitive Guide, 2/e, O'Reilly, 1997	D. Flanagan
4. The HTML Sourcebook, Wiley, 1996	I.S. Graham
5. Computer Science: An overview, 6/e, Addison-Wesley, 1998	J.G. Brookshear
6. Java: An Object First Approach, Addison-Wesley, 1998	F. Culwin
7. Web Page Scripting Techniques, Hayden Books, 1996	J. Bloomberg, J. Kawaski J. and P. Treffers
8. Computer Organization and Architecture: Designing for Performance; 4/e, Prentice-Hall 1997	W. Stallings
9. The Art of Computer Programming, Addison-Wesley; Vol. 1 Fundamental Algorithms, 3/e, 1997 Vol. 3 Sorting and Searching, 2/e, 1998	D.E. Knuth
10. Algorithms and Data Structures, Prentice-Hall, 1985	N. Wirth

11. Introduction to Database Systems, 6/e, C.J. Date  
Addison-Wesley 1996
12. Software Engineering, 6/e 1998 Ian Sommerville
13. Software Engineering: A Practitioners Approach 4/e, McGraw-Hill, 1997 R. Pressman
14. Computer Networks, 3rd Edition, Prentice-Hall, 1996 S. Tanenbaum
15. Operating System Concepts, 4/e, Addison Wesley, 1996 Silberschatz & J. Peterson
16. Computer Graphics: Principles and Practice, 2/e, Addison-Wesley 1996 Foley/Van Dam/ Feiner/Hughes
17. Computer Networks and Internet, Prentice-Hall, 1998 D.E. Comer
18. C++: How to Program, Prentice-Hall, 1998 H.M. Deitel, P.J. Deitel
19. Database Processing, Fundamentals, Design Implementation; 4th edition, Macmillan Publishing Company, New York 1993 David M. Kropnke
20. Data and Computer Communication, 5th Edition, Prentice-Hall International, 1997 W. Stallings

[Write comment \(0 Comments\)](#)

### **Computer Science Solved MCQs**

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**Lets Solve MCQS of Computer Science from the Past papers**

## **past Paper 2000**

(B) Please choose the most appropriate answer from the given set of answers to fill the blanks.

11. During the program execution, temporary/intermediate values are stored in \_\_\_\_\_.

**a. Registers**

b. Peripherals

c. LAN

d. None of these

12. The objects can be inherited by \_\_\_\_\_.

**a. A single object only**

b. Multiple objects

c. Both (a) and (b)

d. Either (a) or (a)

13. The operating system may perform \_\_\_\_\_ operation to manage the memory while running a large program.

a. Sorting

b. Scheduling

**c. Paging**

d. None of these

14. When the LAN is arranged in such a way that each computer is connected directly to the HUB the configuration can be termed as \_\_\_\_\_ network.

a. Bus

**b. Star**

c. Ring

d. None of these

15. To communicate with other computers over a telephone line the computer must have \_\_\_\_\_ installed.

a. Telephone set

**b. Modem**

c. LAN Card

d. None of these

16. When each item of data in a database is directly linked with every other item of data, the database is called \_\_\_\_\_.

**a. Relational**

b. Hierarchical

c. Network

d. None of these

17. \_\_\_\_\_ is the most efficient method to reduce the duplication of data.

a. Duplication

**c. Normalisation**

c. Empty fields

d. None of these

18. The \_\_\_\_\_ operation changes the coordinate values of objects being displayed.

a. Transformation

b. Windowing

**c. Both (a) and (b)**

d. None of these  
19. A linear sequential software development model is also referred to as \_\_\_\_\_.

a. Prototype Model

**b. RAD Model**

c. Spiral Model

d. None of these

20. State Transition Diagram gives information of \_\_\_\_\_.

a. Data Flow

b. Entry Relationship

c. Control Flow

**d. None of these**

### Paper 2002

8. (A) Write only True or False in the Answer Book. Do not reproduce the questions.

(1) The terms “type cast” and “type conversion” have different semantics i.e. they have different effects on the program execution. **TRUE**

(2) Alignment restrictions of modern RISC-architectures forces compilers to occasionally introduce “holes” and “padding” for record structures to ensure efficient access of record elements.

(3) In a language with garbage collection, the programmer need not worry about heap memory management. **True**

(4) In order to execute a program by interpretive execution, the interpreter needs to execute on the system on which the program is to be run.

(5) A GUI is a Graphical Utility Interface. **False**

(6) The study of algorithms began in the 1900s when electronic computers began to be used.

(7) A bus is a part of the computer that decides if a value should be stored as an integer or floating point. **False**

(8) Peripheral devices handle the coordination of a computer’s activities. **True**

(9) Get method in HTML forms is used for debugging. **False**

(10) “Pine” is an example of e-mail utility. **True**

(B) Please choose the most appropriate answer from the given set of answers.

(11) State Transition Diagram gives information of

(a) Prototype Model

(b) RAD Model

(c) Spiral Model

**(d) None of these**

(12) The concept of meaning represented by an algorithm is known as its:

(a) Control Structure

(b) Sequence

**(c) Semantics**

(d) Syntax

(13) Each cell of memory is numbered and that number is referred to as the cell’s

(a) Block

**(b) Identity**

(c) Address

(d) Size

(14) Main memory is called RAM because

- (a) It is volatile, like a ram's temper.
- (b) The computer starts at address 0 and reads every byte until it reaches the correct address.
- (c) It can Read all memory

**(d) The memory is accessible randomly**

- (15) To use internet, the computer must have

- (a) Telephone

- (b) Modem

**(c) ISP Connection**

- (d) All of the above

**2003**

8--(A) Write only True or False in the Answer Book. Do not reproduce the question. (1x10)

(1) A feature of an operating system that allows more than one program to run simultaneously is called Multitasking. **False**

(2) A trackball operates like a joystick on its back. It is extremely useful when there isn't enough space to use a mouse. **False**

(3) Digitizing Tablet is a special Input device that is mainly used to digitize vector-oriented design or pictures. **True** not completely sure

(4) Dedicated line is a high speed cable line that is not permanently wired into the internet.

(5) A Router is a network device that helps LANs and WANs achieve interoperability and connectivity and that can link LANs that have different network topologies, such as Ethernet and Token Ring. **true**

(6) Internet Protocol is a routable protocol in the backbone that is responsible for IP addressing, routing, and the fragmentation and reassembly of IP packets. **True**

(7) Telnet is an Internet connection that enables a user to terminate an active connection with a computer at a remote site.

(8) ESD stands for Electronic Static Discharge. **False**

(9) IRQ is Interrupt Request. **True**

(10) Copyright computer programs made available on trial basis are called shareware. **True**

(B) Please choose the most appropriate answer from the given set of answers. . (1x5)

(11) What is the long form of 'CMOS'?

**(a) Complementary Metal Oxide Semiconductor**

- (b) Complex Metal Oxide Semiconductor

- (c) Controller Metal Oxide Semiconductor

- (d) Complementary Metal Oxide Sets.

(12) What is a Y-Connector?'

- (a) A 'Y-Shaped splitter cable that divides a source input into two output signals.

**(b) A Y-Shaped splitter connector that divides a source input into two output signals.**

- (c) A Y-Shaped splitter card that divides a source input into two output signals.

- (d) None of the above.

(13) What do you mean by IBM-Compatible'?

- (a) A computer that has a processor that is compatible with the original IBM PC.

- (b) A computer that has a processor that is similar to original IBM PC

- (c) A computer that has a casing that is similar original IBM PC.

- (d) None of the above

(14) What do you mean by "virtual? Select'all that apply:

- (a) In general, it distinguishes something that is merely conceptual from something that has

physical reality,

(b) Real

**(c) Not real.**

(d) None of the above

(15) Select correct statement describing a term 'stateless'?

(a) Having all information about what occurred previously

(b) Having some information about what occurred previously

**(c) Having no information about what occurred previously**

(d) Having new information about what occurred previously

**2004**

i) When all access and processing is done in one location, a computer system is said to be

(a) networked

(b) distributed

**(c) centralized**

(d) linked

(ii) Tools to change PROM chips, called

(a) chip kits

(b) RAM burners

(c) PROM burners

(d) none of

these

(iii) The type of modulation that changes the height of the single is called (a) frequency

(b) phase

(c) amplitude

(d) prophase

(iv) A connection for similar network:

(a) satellite

**(b) bridge**

(c) gateway

(d) fax

(v) The technology whereby part of the program is stored on disk and is brought into memory for execution as needed is called

**(a) memory allocation**

(b) virtual storage

(c) interrupts

(d) prioritized memory

(C) Write "True" or "False" in your answer book about the following statements: (5)

(i) Application software may be either custom or packaged. **True**

(ii) RISC technology uses more instructions than traditional computers. **True**

(iii) A ring network has no central host computer. **True**

(iv) Satellites use line-of-sight transmission. **False**

(v) Time-sharing is both event-driven and time-drive

**2005**

8. (A) For whom the following abbreviations stand for

(i) DNS : Domain Name System

(ii) CMOS : Complementary metal–oxide–semiconductor

- (iii) OSI : Open Systems Interconnection
- (iv) CASE : Computer Aided Software engineering
- (v) DDE

(B) Fill in the blanks with the most suitable options for the following statements:

(i) A data path to transfer data is called.....**Physical medium** (not sure)

(ii) What is combination of I-time and E-time called.....**Machine Cycle**

(iii) The process of applying a formula to a key is called.....

(iv) Distortion in the received signals is called.....

(v) DMA is a technique to transfer data between memory and .....**IO devices**

(C) Write “TRUE” or “FALSE”

(i) RISC technology used fewer instructions than traditional computers. **True**

(ii) Direct file organization is combination of sequential and indexed file organization.**True**

(iii) Fax is a connection of similar networks. **True** not sure

(iv) Let  $G=(V,E)$  be an undirected graph when  $G$  is a free tree. **True**

(v) An entity instance is a single occurrence of an entity **True**