UNIT 1

1. Define computer and classify it. (June-2024)
2. Explain CPU and its components. (Dec-2023)
3. Describe various types of memory & storage systems. (June-2023)
4. What are I/O devices? Explain with examples. (Nov-2022)
5. Explain system & application software with examples. (June-2022)
6. Discuss the applications of computers in eBusiness and healthcare. (June-2020)
7. What is an operating system? Explain its functions. (May-2019)
8. Differentiate between system and application software. (Dec-2023, June-2020)
9. Explain the management of files, processes, and memory in an operating system. (Nov-2022)
10. Write a short note on MS Word, MS PowerPoint, and MS Excel. (June-2020, Dec-2023)

Repeated Topics:

- System vs Application Software
- MS Office (Word, PowerPoint, Excel)
- Operating System Functions

UNIT 2

1. What is an algorithm? Explain its complexities. (June-2024)
2. Define flowchart and explain its symbols. (Dec-2023)
3. Differentiate between procedural and object-oriented programming. (June-2023, Nov-2022)
4. Explain various programming paradigms with examples. (Nov-2022)
5. Describe the characteristics of object-oriented programming. (June-2022, May-2019)
6. What are tokens in C++? Explain with examples. (June-2020)
7. Write a short note on precedence and associativity in C++. (May-2019, June-2023)
8. What are control structures in C++? Explain different types. (Dec-2023)
9. Explain arrays and functions in C++ with examples. (Nov-2022, June-2022)

Repeated Topics:

- Procedural vs Object-Oriented Programming
- Arrays and Functions in C++
- Precedence and Associativity in C++

UNIT 3

1. Explain objects and classes in C++ with an example. (June-2024, Dec-2023)
2. What is a scope resolution operator? (Dec-2023, Nov-2022)
3. Describe constructors and destructors in C++. (June-2023, May-2019)
4. Explain the concept of friend functions with an example. (Nov-2022, June-2022)
5. What is inheritance? Explain different types of inheritance. (June-2022, Dec-2023)
6. Define polymorphism and explain function overloading. (June-2020, Nov-2022)
7. What are virtual functions? Explain with an example. (May-2019)
8. Write a short note on operator overloading in C++. (Dec-2023, June-2024)
9. Introduction to data structures and their types. (Nov-2022)

Repeated Topics:

- Objects and Classes in C++
- Constructors and Destructors
- Inheritance and its Types
- Function Overloading and Polymorphism

UNIT 4

1. Explain the OSI model and its different layers. (June-2024, June-2022)
2. What are the goals of computer networking? (Dec-2023)
3. Describe various internetworking devices. (June-2023)
4. Explain the TCP/IP model and compare it with the OSI model. (Nov-2022, June-2020)
5. What is e-commerce? Explain its advantages and disadvantages. (June-2022)
6. Define viruses, worms, malware, and Trojans. (June-2020, May-2019)
7. Describe different types of cyber-attacks. (May-2019, Nov-2022)
8. Explain firewall and its role in network security. (Dec-2023, June-2024)
9. What are cyber laws? Explain laws related to internet fraud. (Nov-2022, May-2019)

Repeated Topics:

- OSI vs TCP/IP Model
- Cybersecurity Threats (Viruses, Worms, Malware, Attacks)
- Firewall and Network Security

UNIT 5

1. Define a database management system and its need. (June-2024, Dec-2023)
2. Explain the difference between a file-oriented approach and a database approach. (Dec-2023, June-2023)
3. Discuss different data models in DBMS. (June-2023, Nov-2022)
4. Describe the architecture of a database system. (Nov-2022, June-2022)
5. What is data independence? Explain types of data independence. (June-2022, May-2019)
6. Define cloud computing and explain its infrastructure. (June-2020, Dec-2023)
7. What are cloud deployment models? Explain with examples. (May-2019, June-2024)
8. Discuss the pros and cons of cloud computing. (Dec-2023, Nov-2022)
9. What is a primary key? Explain data definition and manipulation languages. (Nov-2022, June-2022)

Repeated Topics:

- File-Oriented vs Database Approach
- Data Models in DBMS
- Cloud Computing Basics and Deployment Models

Here are some important topics for your upcoming **Basic Computer Engineering (BT-205)** exam based on previous trends and syllabus weightage:

UNIT 1: Computer Fundamentals & Operating System

- Classification of computers
- CPU architecture and components
- Memory & Storage systems
- Operating System functions and types
- Management of Files, Processes & Memory

- Applications of Computers in various fields

UNIT 2: Programming Basics & C++ Fundamentals

- Algorithms & Flowcharts
- Programming paradigms (Procedural vs Object-Oriented)
- Tokens, Data types, and Operators in C++
- Control structures (Loops & Conditional Statements)
- Arrays and Functions in C++

UNIT 3: Object-Oriented Programming Concepts

- Objects and Classes
- Constructors & Destructors
- Inheritance (Types and Examples)
- Function Overloading & Polymorphism
- Virtual Functions and Friend Functions

UNIT 4: Computer Networks & Cyber Security

- OSI & TCP/IP Model (Layer-wise Functions)
- Internetworking Devices (Router, Switch, Gateway)
- Cybersecurity Threats (Viruses, Worms, Malware, Trojans)
- Firewalls and Network Security Measures
- Cyber Laws and Ethical Hacking

UNIT 5: Database & Cloud Computing

- File-Oriented vs Database Approach
- Data Models and Database Architecture
- SQL Basics (DDL & DML Commands)
- Cloud Computing Concepts (IaaS, PaaS, SaaS)
- Cloud Deployment Models and Security