NEB Class 12 Computer Science Questions

Unit 1: Database Management System - 5 marks

1. What is Database and DBMS? List out the advantages and disadvantages of DBMS.
2. Explain the different models of DBMS with advantages and disadvantages.
3. Differentiate between centralized and distributed database systems.
4. Who is DBA? What are the major responsibilities of DBA?
5. What is normalization? Explain the normalization process with examples.
6. Describe RDBMS with advantages and disadvantages.
7. Define the following terms:
   a) Data Dictionary
   b) Primary Key
   c) Relationship
   d) DML
   e) SQL
   f) Data Integrity
   g) DDL
   h) Data Security
   i) Database System

Unit 2: Data Communication and Networking - 8 marks

1. What is Computer Network? Explain advantages and disadvantages of a computer network.
2. Write about different classes of IP addresses.
3. What do you mean by network topology? Explain the different types of network topologies.
4. Define network architecture. Differentiate between client-server and peer-to-peer networks.

5. Differentiate between Simplex, Half Duplex, and Full Duplex.
6. Differentiate between the Internet and Intranet.
7. What do you mean by transmission media? Explain the different types of transmission media used in computer networks?
8. What do you mean by the OSI reference model? Explain the different layers of the OSI reference model.
9. Define the following terms:
    a) Repeater
    b) Bridge
    c) Protocol
    d) Router
    e) Satellite
    f) Microwave System
    g) Subnet Mask
    h) MAC Address
    i) Coaxial Cable
    j) Fiber Optic Cable

Unit 3: Web Technology II - 5 marks (Submit these in the respective practical files)

1. What is web technology? Differentiate between client-side scripting and server-side scripting.
2. What is jQuery? Write its features.
3. What is JavaScript? How can you add JavaScript to an HTML page? Describe with an example.
4. What is PHP? Write the advantages of PHP.
5. Explain the data types in PHP.
6. Explain the different operators used in PHP.
7. Write down the server-side script to create a database, connect with it, create a table and insert data into it.

Unit 4: Programming in C - 8 marks

Pointer and Functions

1. Define pointer. Write down the advantages and disadvantages of pointer. Write a program to swap any two numbers using pointer.
2. Write a program to check odd/even using pointer.
3. Define function. Write a program to find Simple Interest using function.
4. What is recursive function? Write a C program to calculate factorial of a number using recursive function.
5. What is recursion? Write a recursive function to find Fibonacci value of input number.
6. Write a recursive function to find sum of numbers input by user.

Structure

1. Write a program to read any ten integer numbers into an array, sort and display it in descending order.
2. Write a program using structure to input employee id, name and salary, then print the entered data sorted on the basis of salary (highest to lowest).
3. Write a program to enter name, roll no and marks of 10 students and sort them in alphabetical order according to their name.
4. Write a program to ask employee id, name and salary of some employees and display the records whose salary ranges from 50000 to 100000.

File Handling

1. Write a program to create a data file named `student.dat` and store roll number, name and address of 10 students and display the records in proper format.
2. Let a database `book.txt` contain information of books (name, price and edition). Write a C program to add some more data and print the records of books having price greater than a specified amount.
3. Write a program to read the marks of 5 students in English, Account and Computer from the existing file and count how many students passed or failed.

Unit 5: Object-Oriented Programming (OOP) - 5 marks

1. What is OOP? Describe all of its features.
2. Explain the term polymorphism and inheritance.
3. Differentiate between OOP and POP.

4. Differentiate between OOP and Structured Programming Language.
5. Explain different types of inheritance.

Unit 6: Software Development Model - 5 marks

1. Define SDLC. Explain different phases of SDLC in brief.
2. Write about feasibility study and its types.
3. Who is the system analyst? Explain the role and characteristics of a system analyst.
4. Describe different requirement collection methods.
5. Explain in detail Waterfall, Prototyping, and Spiral models of software development.
6. What is prototyping model? Write down its advantages and disadvantages.
7. Define system testing and its types.
8. Differentiate between black box testing and white box testing.
9. Differentiate between system analysts and system engineers.
10. Explain DFD with its symbols and examples.
11. Explain ER diagram with symbols and examples.
12. Define documentation and explain its importance.

Chapter 7: Recent Trends in Technology - 5 marks

1. Define Artificial Intelligence (AI). Explain its components and applications.
2. Define Robotics and explain its applications.
3. What is cloud computing? Write its advantages and disadvantages.
4. Explain different types of cloud servers.(public, Private, Hybrid)
5. What is Big Data? Explain different kinds of Big Data.
6. Explain characteristics of Big Data.
7. Explain applications of Big Data.
8. Explain Virtual Reality (VR) with its application areas. Write advantages and disadvantages.
9. Define E-commerce. Write advantages and disadvantages.
10. What is E-medicine and E-governance?

11. What is mobile computing? Write advantages and disadvantages.
12. What is IoT? Write advantages and disadvantages.
13. Explain E-learning and M-commerce.
14. Explain social media with advantages and disadvantages.