## ****🔹 SET 2: Technical MCQs****

### **Programming Concepts (OOPs, DSA, SQL, OS)**

1. **Which of the following is NOT a principle of Object-Oriented Programming (OOP)?**

a) Encapsulation

b) Abstraction

**c) Compilation**

d) Polymorphism

1. **Which of the following data structures follows the LIFO (Last In, First Out) principle?**

a) Queue

**b) Stack**

c) Linked List

d) Tree

1. **Which data structure is most efficient for priority-based task execution?**

a) Stack

**b) Heap**

c) Queue

d) Graph

1. **Which of the following is NOT a characteristic of linked lists?**

a) Dynamic memory allocation

**b) Random access of elements**

c) Efficient insertion/deletion

d) Uses pointers for connectivity

1. **Which of the following sorting algorithms is NOT in-place?**

a) Quick Sort

**b) Merge Sort**

c) Insertion Sort

d) Selection Sort

1. **Which SQL command is used to remove all records from a table without deleting the table structure?**

a) DELETE

**b) TRUNCATE**

c) DROP

d) REMOVE

1. **Which type of SQL join returns only matching rows from both tables?**

a) LEFT JOIN

b) RIGHT JOIN

**c) INNER JOIN**

d) FULL JOIN

1. **What is the main advantage of using stored procedures in SQL?**

a) Increased security

**b) Better performance due to precompiled execution**

c) Requires less storage

d) Eliminates the need for indexes

1. **In Operating Systems, a deadlock occurs when:**

**a) Two or more processes wait indefinitely for resources held by each other**

b) A process completes execution

c) CPU scheduling is optimized

d) A program runs out of memory

1. **Which scheduling algorithm always executes the shortest job first?**

a) Round Robin

**b) Shortest Job Next (SJN)**

c) First Come First Serve (FCFS)

d) Priority Scheduling

1. **Which memory management technique eliminates external fragmentation?**

a) Paging

**b) Segmentation**

c) Contiguous allocation

d) Swapping

1. **Which of the following is responsible for managing system calls in an OS?**

**a) Kernel**

b) Shell

c) File Manager

d) Task Scheduler

### **Networking & Cybersecurity**

1. **Which of the following protocols is used for secure web communication?**

a) HTTP

**b) HTTPS**

c) FTP

d) SMTP

1. **Which networking device is used to connect multiple networks together?**

a) Switch

b) Hub

**c) Router**

d) Modem

1. **Which layer of the OSI model is responsible for data encryption?**

a) Network Layer

**b) Presentation Layer**

c) Application Layer

d) Transport Layer

1. **Which of the following best describes a DDoS attack?**

a) Gaining unauthorized access to a system

**b) Overloading a server with excessive traffic**

c) Exploiting vulnerabilities in software

d) Using phishing techniques

1. **What is the purpose of a MAC address?**

**a) To uniquely identify a device on a local network**

b) To encrypt data in transmission

c) To assign dynamic IP addresses

d) To route data across the internet

1. **Which of the following best describes a Zero-Day attack?**

**a) Exploiting a security vulnerability before the developer patches it**

b) Cracking passwords using brute force

c) Using outdated encryption techniques

d) Stealing cookies from a browser

1. **Which authentication method is more secure than a password alone?**

**a) Two-Factor Authentication (2FA)**

b) Using a stronger password

c) Disabling encryption

d) Clearing cache memory

1. **Which protocol is used for sending emails?**

a) FTP

b) HTTP

**c) SMTP**

d) SSH

### **Cloud Computing**

1. **Which cloud computing model allows users to deploy applications without managing the underlying infrastructure?**

a) IaaS

**b) PaaS**

c) SaaS

d) DaaS

1. **Which of the following best describes a private cloud?**

a) A cloud shared by multiple organizations

**b) A cloud used exclusively by one organization**

c) A public cloud managed by Google

d) A personal storage cloud like Google Drive

1. **What does AWS S3 provide?**

a) Virtual machines

**b) Object storage**

c) Container orchestration

d) Database management

1. **Which of the following technologies is used to manage multiple containers efficiently?**

a) Docker

b) OpenStack

**c) Kubernetes**

d) Terraform

1. **Which cloud computing term refers to dynamically allocating resources as needed?**

a) Multi-tenancy

**b) Auto-scaling**

c) Virtualization

d) Load balancing

1. **Which of the following cloud service providers is developed by Microsoft?**

a) AWS

**b) Azure**

c) Google Cloud

d) IBM Cloud

1. **Which of the following is NOT a benefit of cloud computing?**

a) Scalability

b) Cost savings

**c) Increased latency**

d) Remote accessibility

1. **Which cloud storage service is provided by Google?**

a) AWS S3

b) Azure Blob Storage

**c) Google Cloud Storage**

d) IBM Watson Storage

1. **What is the primary function of a hypervisor in cloud computing?**

a) Encrypting data in the cloud

**b) Managing virtual machines**

c) Performing database transactions

d) Hosting static websites

1. **Which of the following is an example of a serverless computing platform?**

a) AWS EC2

b) Google Compute Engine

**c) AWS Lambda**

d) Azure Virtual Machines