CPS 406 QUESTIONS

CLIENT-SERVER ARCHITECTURE

(a) Define client-server computing and explain its typical operational model, using a real-world example to illustrate the request-response process.
(5 marks)

(b) Discuss in detail the roles and responsibilities of both the client and the server in a client-server environment. Provide examples of each.
(6 marks)

(c) Compare and contrast the following architectural models used in client-server computing, highlighting their structure, use cases, and key advantages:

- Two-Tier Architecture
- Three-Tier Architecture
- N-Tier Architecture
  (9 marks)

COMPUTER AND NETWORK SECURITY

FUOTECH Solutions, an IT firm, is facing cyber threats like phishing and unauthorized access. To improve security, they hired a network administrator to protect data and maintain secure network operations.

Based on this scenario, answer the following questions:

a. What are the three main goals of network security? (3marks)
b. Define a firewall and explain its role in network security. (2 marks)
c. List four common challenges in computer network security. (2 marks)
d. Who is a network administrator and mention three of their functions? (4marks)
e. What do you understand by computer and network security? State three reasons why it is important to keep a network secure. (4 marks)

DISTRIBUTED COMPUTING

Questions

a. Define distributed computing, explaining how it operates and why it is a useful and widely deployed tool in today's world.
b. Describe three key features that distinguish distributed systems from single-computer systems, providing a brief explanation for each.
c. Explain the fundamental differences between the Client-Server and Peer-to-Peer architectural models in distributed computing, focusing on how resources are shared and managed in each.
d. Discuss three significant benefits that distributed computing offers, providing examples of how these benefits are realized in practical applications.

WEB APPLICATION

QUESTIONS

a. Differentiate between a framework and a library and give an example of each.
b. Gmail accessed from the web is a type of what web application? State your reason for your answer.
c. Web applications are now widely adopted in the modern-day world. Do you agree? Sate your reasons for your answer
d. Why is Requirement analysis an important stage to take when building web applications

MOBILE AND WIRELESS COMPUTING

You are developing a mobile application for a logistics company that allows delivery drivers to receive real-time updates, navigate to delivery locations, and report delivery statuses from the field. Considering the advantages and challenges of mobile and wireless computing,

a. explain how mobile computing and wireless technologies would support this application.
b. identify at least two potential issues the company may face and suggest how they can be addressed.