NETWORKING UNIT: QUESTIONS FROM PAST PAPERS

SECTION A QUESTIONS

8. Identify two key features of a peer-to-peer (P2P) network. [2]

9. Define the term data packet. [2]

10. Explain why the speed of data transmission across a network can vary. [3]

4. (a) Define the term computer network. [1]
(b) Identify a type of network that would allow secure access from an employee's home to their company's LAN. [1]
(c) Outline two benefits and two problems of employees working from home. [

8. (a) Define the term protocol. [1]
(b) Outline why protocols are necessary. [2]

2. By making direct reference to the technologies used, explain how a virtual private network (VPN) allows a travelling salesperson to connect securely to their company's network. [4]

5. A school uses a local area network (LAN) which connects several computers and a printer to a server and allows access to the internet.
(a) Define the term server. [1]
(b) Identify the different clients in this network. [1]
(c) (i) Identify one external threat to the security of the school's computer system. [1]
(ii) State one way to protect the computer system from the threat identified in part (c)(i). [1]

SECTION B QUESTIONS

An international organization has offices located across several countries. For some of its activities, for example human resource management, it has been decided to adopt a "Software-as-a-Service" (SaaS) solution in order to keep the running costs low.

   a) Describe the features of SaaS. [3]
   b) Discuss the limitations of SaaS in relation to security. [6]

Each office makes some data available to external customers through the use of an extranet and allows employees to work from home through a VPN.

   c) Define the term extranet. [2]
   d) Distinguish between a VPN and an extranet. [4]

---

9. Six lawyers and one secretary work together in the same building and are connected via a LAN to a central server. Each has their own workstation.

   a) Outline the concept of the Open Systems Interconnection (OSI) model in communication across a network. [3]
   b) Outline, with an example, the function of protocols. [3]

The LAN has one server, which is connected to the internet. The workstations are connected to the server by cable. There is also a wireless connection.

   c) Outline one advantage and one disadvantage of allowing wireless access to the server. [4]

Print jobs are sent to a shared printer from all workstations and added to the print queue in the order in which they are sent. A priority is given to each job based on the number of pages requested.
   • The highest priority (1) is given to jobs with 1–3 pages.
   • The lowest priority (4) is given to jobs with more than 50 pages.
The jobs sent to the printer are held in a collection of objects. Each object includes the priority that has been given and the time it was sent to be printed. If any job has been waiting more than 10 minutes it is moved to the front of the queue and is the next to be printed.

   d) Outline the steps needed to search the collection and return the next job to be printed. [5]

---

12. A college has a high-speed network. The network is accessible to all students and staff through their personal accounts. The network may be accessed by using desktop computers available in the college. When in the college, users can also use personal laptops to connect wirelessly or dock with an Ethernet cable. When not in the college, users can connect via a virtual private network (VPN) over the internet.

    a) In the given context, distinguish between Ethernet and wireless in terms of reliability of transmission. [4]
    b) Describe two features of a VPN that make it secure. [4]
    c) State one technology that is necessary for a VPN. [1]

The college is devising a policy for the use of its IT resources and services. They are considering prohibiting the use of external services such as cloud storage and blogs.

    d) In relation to the specific activities that may be carried out by students, discuss two advantages and two disadvantages of the use of external services. [6]