



9.4 TCP IP part 2

Name: _____

Class: _____

Date: _____

Time: **38 minutes**

Marks: **26 marks**

Comments:

Q1.

An example of a Uniform Resource Locator (URL) is <http://www.bbc.co.uk/history>.

- (a) What part of the above URL constitutes the domain name?

_____ (1)

- (b) Using the URL, explain what each part can tell us.

(i) http_____

(ii) www_____

(iii) bbc_____

(iv) co_____

(v) uk_____

(vi) history_____

(6)

- (c) The IP address of the above site is 212.58.224.32.

- (i) What is the relationship between the IP address and the domain name?

_____ (1)

- (ii) If each group of digits is stored in one byte, what is the range of possible IP addresses?

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(2)

(Total 10 marks)

Q2.

The United Kingdom's National Health Service was created to provide health care to the nation through:

- hospitals
- health centres/GPs' (doctors') surgeries
- pharmacies (chemists).

The UK government is proposing to computerise and network the entire National Health Service (NHS) so that it will be possible to have on-line *access to the system at a level of security relevant to their status* for anyone who

- works for the NHS
- uses its services
- works at a branch of government responsible for the NHS.

Patient records will be stored in multi-user distributed relational databases managed by *Database Management Systems (DBMS)*.

- Every person in the UK is assigned a unique numeric key, *the patient reference number*, and is assigned for primary health care to a doctor in a health centre or a GPs (General Practitioner's or doctor's) surgery located in a single building.
- A person's doctor may, if necessary, arrange for the person to see a specialist doctor in a hospital.
- Drugs prescribed for a person by the person's GP for the treatment of an illness are obtained from a pharmacy.
- Every computer in the service of the NHS will be interconnected in *local area networks* (LANs) and the *local area networks* will be interconnected by a *wide area network* (WAN).

Which network type is most appropriate, WAN or LAN, **within** a health centre or GPs (doctor's) surgery? Justify your choice.

(Total 2 marks)

Q3.

Figure 1 below shows part of the logical layout of an Ethernet-based local area network consisting of several desktop PCs connected using a bus topology. The network is split into two *segments* linked by a bridge.

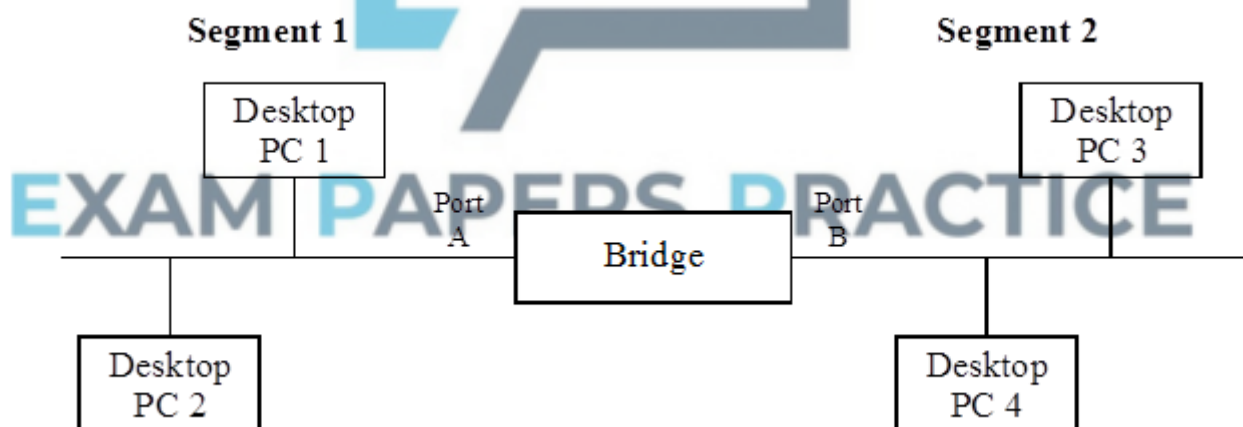


Figure 1

- (a) (i) Why is it necessary sometimes to split local area networks based on a bus topology into two or more segments?

(1)

- (ii) Describe the involvement of the bridge in **Figure 1** in traffic management on the Ethernet segments.

(2)

- (iii) The network in **Figure 1** is physically realised using two hubs, a bridge and twisted-pair **cabling** to interconnect the desktop PCs. Draw a labelled diagram **of** the layout of the network that uses these components.



(2)

- (iv) The network in **Figure 1** is operated as a peer-to-peer network. Explain peer-to-peer networking.

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(1)

- (b) **Figure 2** below shows how three desktop PCs may share via an Ethernet switch and router an ADSL line connection to the Internet.

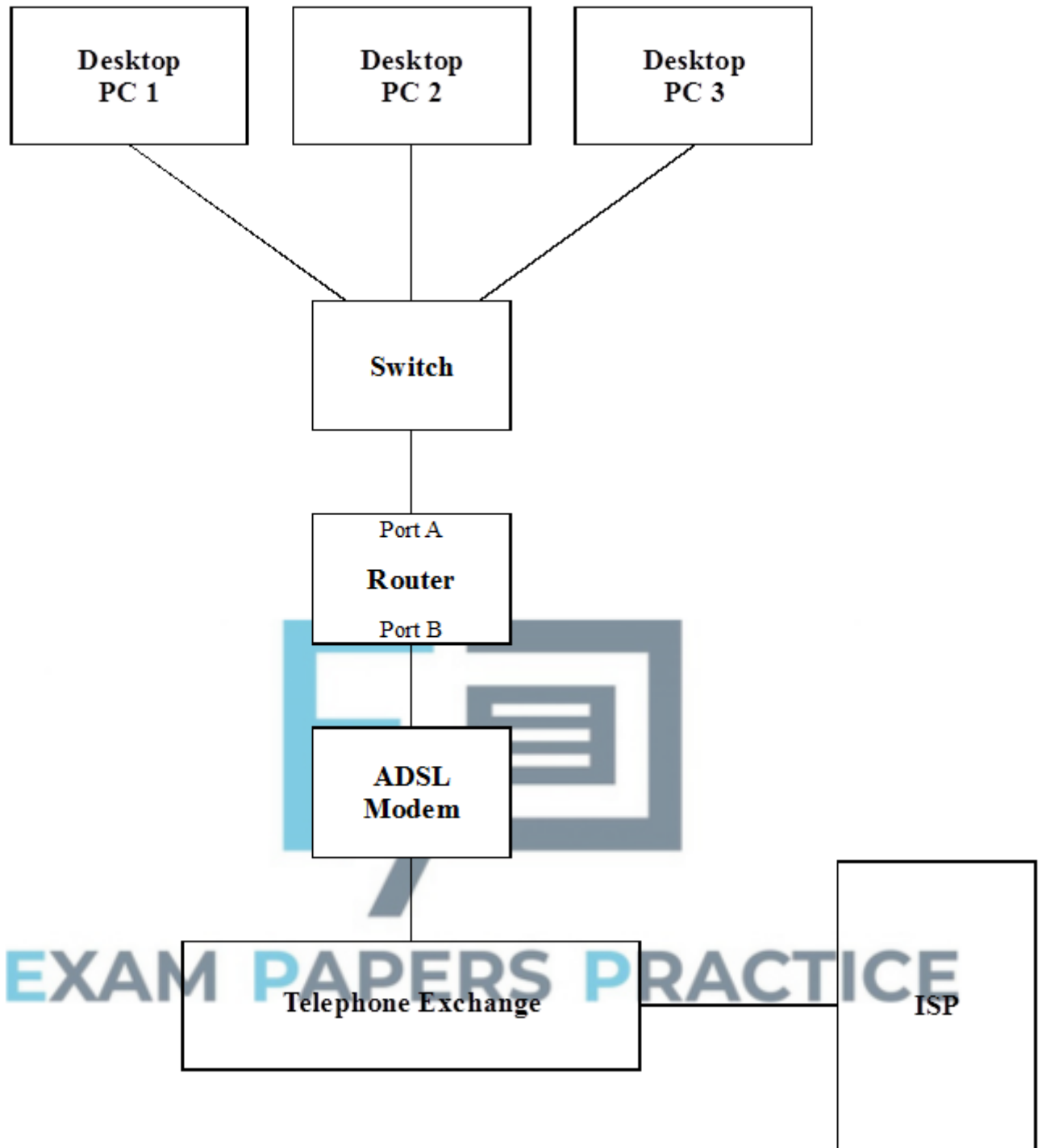


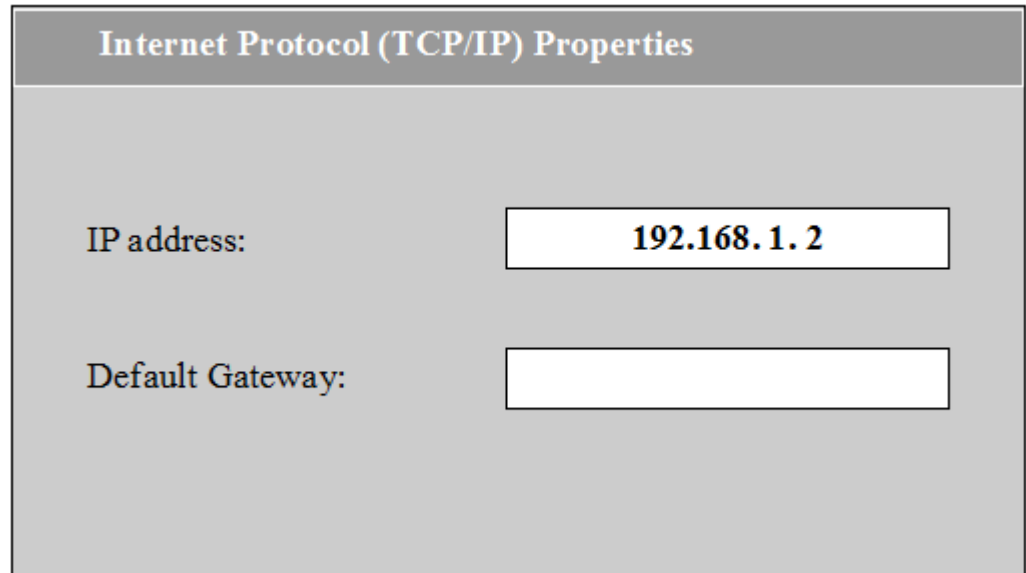
Figure 2

- (i) What is the role of an Internet Service Provider (ISP)?

(1)

- (ii) What is a router?

(1)



Internet Protocol (TCP/IP) Properties

IP address: 192.168.1.2

Default Gateway:

Figure 3

- (iii) **Figure 3** above shows part of the TCP/IP configuration window displayed on the VDU of Desktop PC 1. What IP address should be entered for the Default Gateway?

(1)

(Total 9 marks)

Q4.

- (a) Define a client-server system.

(2)

- (b) Give **three** benefits of a client-server system.

1. _____

2. _____

3. _____

(3)

(Total 5 marks)



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