



EXAMINATIONS 2012 / 2013
ARHOLIADAU 2012 / 2013

Semester 2

FACULTY OF: APPLIED DESIGN AND ENGINEERING
SCHOOL OF APPLIED COMPUTING

NAME OF COURSE/PROGRAMME: B.Sc./BEng (Hons) Computing Portfolio

YEAR OR LEVEL: Level 6

NAME OF MODULE/UNIT/EXAM PAPER: Network Management

MODULE NO: M3X8644
M3X8533

DATE OF EXAMINATION: 24th May 2013

EXAMINATION TIMES:

START TIME: 2:00pm

FINISH TIME: 4:00pm

TIME ALLOWED: 2 hours

INSTRUCTIONS TO CANDIDATES:

Answer three out of the four questions. Each question carries equal marks.

Candidates are not permitted to bring calculators, dictionaries; text books/case studies or any other reference materials into the exam room.

QUESTION ONE

- (a) Figure 1 shows a network with solicited node multicast address. Both R2 and R3 are listening to the same solicited-node multicast address (FF02::1:FFAA:BBBB). The received packet is for R2. How will R2 and R3 respond?

(4 marks)

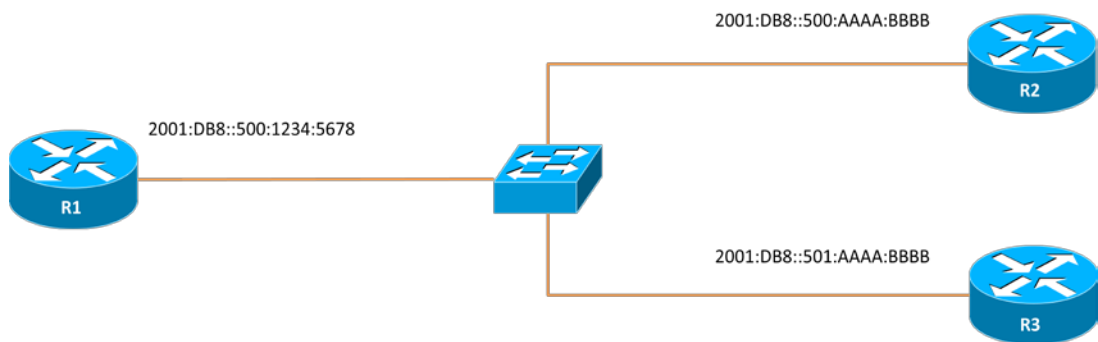


Figure 1

- (b) 2031:0000:130F:0000:0000:09C0:876A:130B is a version 6 IP address. Write it down in abbreviated format, identify subnet prefix and interface ID.

(4 marks)

- (c) Explain the difference between IPv4 header vs IPv6 header. Diagrams can be used to illustrates the difference.

(17 marks)

QUESTION TWO

- (a) Define network management?

(2 marks)

- (b) Name the five areas of network management of the ISO model. Explain each areas in detail.

(15 marks)

- (c) What is SNMP manager and SNMP agent?

QUESTION THREE

(a) You have been asked by Swansea Maritime Consulting Company to propose a new design for their computer network in order for the network administrator to better manage the network. He would also need WiFi to be implemented for each department. The current network is a flat backbone with all departments connected only to a central switch. There are four department:

- Marketing
- HR
- Accounting
- Sales

The maximum number of users in any department is 30. The IP network address used is 172.17.21.0 and subnet mask 255.255.255.0

Outline all the necessary requirements that would be needed for the new design. Provide a labelled network diagram to aid in your proposal.

(25 marks)

QUESTION FOUR

(a) What are the components required to establish a VPN connection for the network in figure 2 and explain how VPN provides security for data?

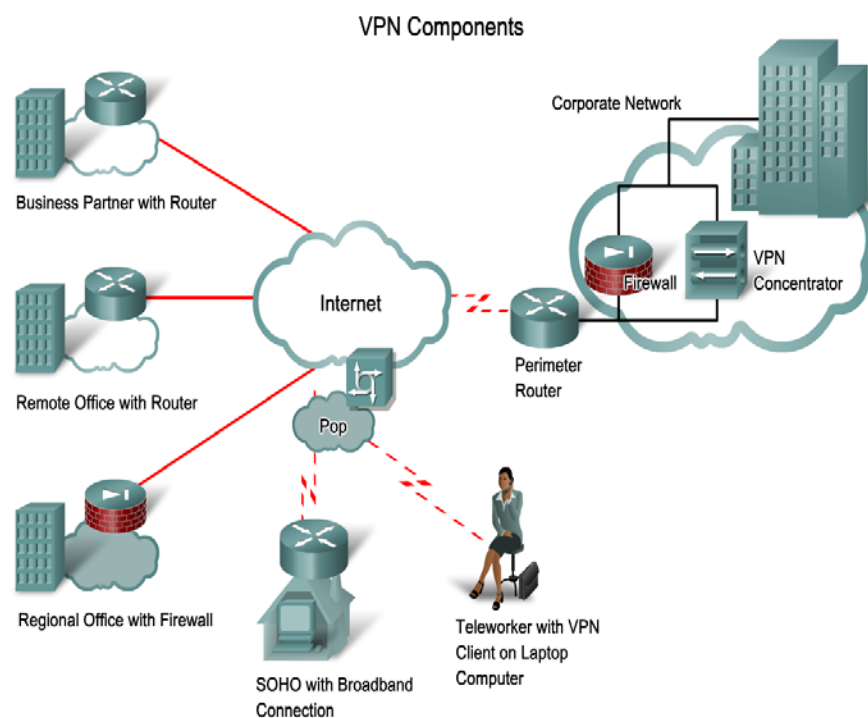


Figure 2

(8 marks)

(b) List and explain the characteristics of secure VPNs

(15 marks)

(c) Why do organizations use VPNs?

(2 marks)