

**LOCATION: SWANSEA**

**LLEOLIAD: ABERTAWE**

**LEVEL 6**

**LEFEL 6**

**EXAMINATION PERIOD**  
**JANUARY 2017**

**CYFNOD ARHOLIADAU**  
**IONAWR 2017**

**MODULE CODE: M6X01104**  
**Network Management**

**TIME: 2 HOURS**

**ANSWER THREE QUESTIONS OUT OF FOUR**

*Equipment or materials required – None*

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## ANSWER THREE QUESTIONS

### Q1.

In reference to IPV6

- Explain the differences between IPv4 header vs IPv6 header. Diagrams may be used to illustrate the differences.  
(17 marks)
- Write down the abbreviated format, identify subnet prefix and interface ID for 2031:0000:130F:0000:0000:09C0:876A:130B version 6 IP address.  
(4 marks)
- In figure 1 below of 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)

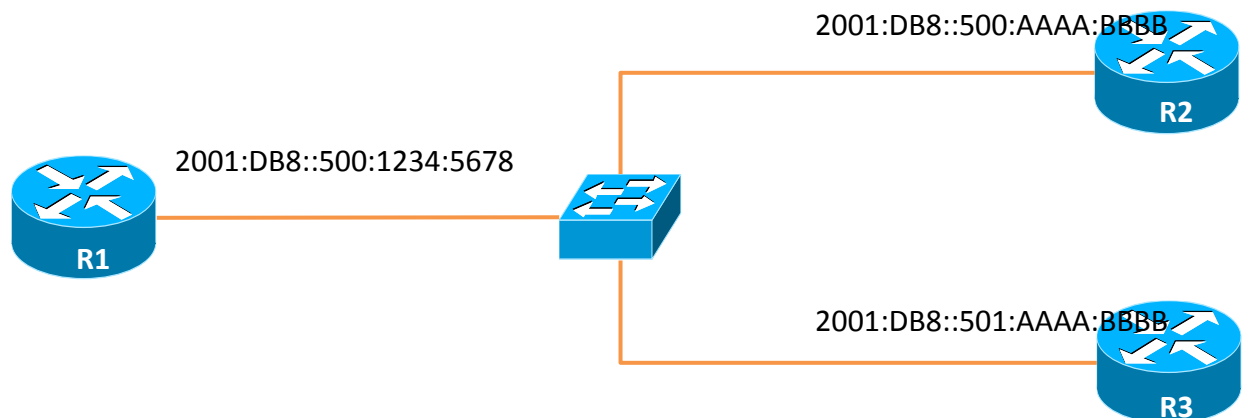


Figure 1

### Q2.

- You have been commissioned by Kapilan Campbell Bashford (KCB) Consultancy Ltd to propose a new design for their computer network. This is to allow the network administrator to better manage the network. KCB 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:
  - IT
  - Sales
  - Finance
  - Research and Development

The maximum number of users in any department is 25. The IP network address used is 192.168.0.0 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)

### Q3.

Referring to managing wireless networks:

- Name and explain three main trouble shooting approaches use to resolve network problems.

(6 marks)

- In figure 2 the wireless client has no connectivity. What are some of the wireless troubleshooting process to be taken to eliminate the connection problem?

(12 marks)

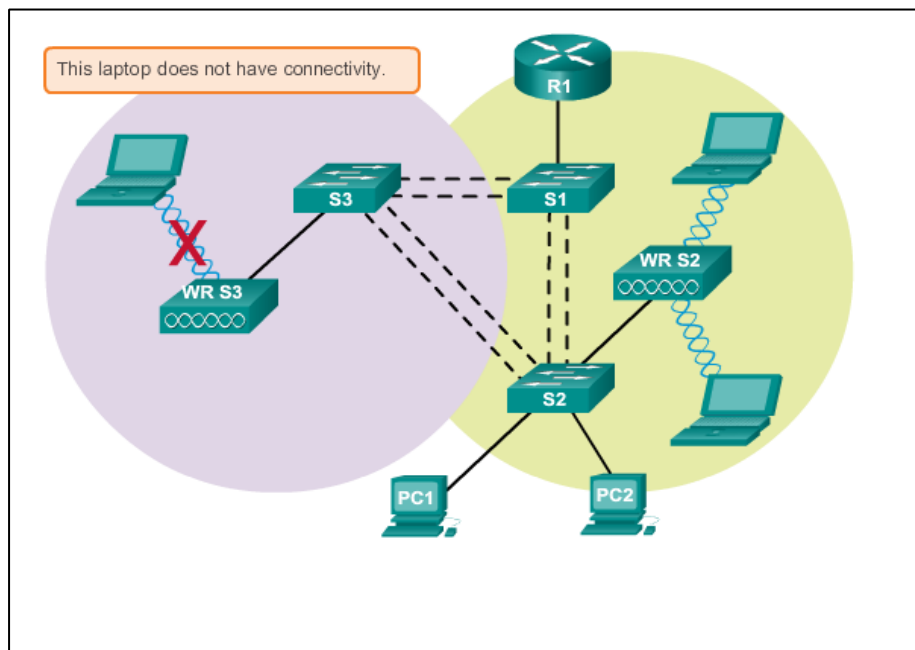


Figure 2: Wireless Client Not Connecting

- Explain steps that can be taken to defend against wireless networks attack.

(7 marks)

### Q4.

- Define network management?

(2 marks)

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

(15 marks)

- In the table 1 below, check the appropriate field to classify each SNMP characteristic version 2c, 3 or both

(8 marks)

|                                                                     | Version 2c | Version 3 | Both |
|---------------------------------------------------------------------|------------|-----------|------|
| Authenticates the source of management messages.                    |            |           |      |
| Provides services for security models.                              |            |           |      |
| Cannot provide encrypted management messages.                       |            |           |      |
| Supported by Cisco IOS software.                                    |            |           |      |
| Provides services for both security models and security levels.     |            |           |      |
| Includes expanded error codes with types.                           |            |           |      |
| Uses community-based forms of security.                             |            |           |      |
| Used for interoperability and includes message integrity reporting. |            |           |      |

**Table 1: SNMP characteristic**

**Diwedd/End**