

Learning Outcomes Mapping

Computer Networks (COMP241)

Second exam

Term I (1432/1433)

No.	Description	Questions					
		Q1	Q2	Q3	Q4	Q5	Q6
LO 1	The principles of computer networks.						
LO 2	Network protocols.						
LO 3	The OSI , TCP models.						
LO 4	The network topologies.						
LO 5	The main features of LAN and WAN.						
LO 6	Ethernet technologies.				X		X
LO 7	Ethernet switching.	X					
LO 8	Networking media and cabling.	X	X				
LO 9	The routing principles.	X					
LO 10	IP addressing, Sub netting.						
LO 11	Network Administration.						
LO 12	Network troubleshooting.						
LO 13	Network configuration.						
LO 14	Install a small LAN.	X					
LO 15	Test cables of a computer network.			X		X	X

Attempt to solve the following questions:

[1] Choose the right answer:

[2 marks]

1. Bridges operate at the layer.

- a) application b) data link c) network d) physical

2. Ethernet uses standards

- a) 802.3 b) 802.4 c) 802.11 d) 802.5

3. A common application of wireless data communication is for use.

- a) games b) mobile c) broadcast d) multicast

4. Repeaters operate at the layer.

- a) application b) transport c) network d) physical

5. No more than repeaters between any two computers

- a) one b) two c) three d) four

6. Routers operate at the layer.

- a) application b) transport c) network d) physical

7. 10BaseT uses the connector.

- a) RJ-11 b) BNC c) RJ-44 d) RJ-45

8. The bandwidth of the fast Ethernet is.....

- a) 1Gbps b) 10Gbps c) 100Mbps d) 10Mbps

[2] State whether the following is true or false:

[2 marks]

1. **10BaseT uses coaxial cables.** ()
2. **Ethernet installation and upgrade is relatively expensive.** ()
3. **A wireless network can be created with much less cabling than other networks.** ()
4. **The minimum size of the frame data field is 50 bits.** ()
5. **10Base5 uses twisted pair cables.** ()
6. **Class II repeater can be used to connect 100BaseTx to 100BaseTx.** ()
7. **The maximum cable distance for 100BaseFx is 100meter.** ()
8. **Straight-through cable is used to connect switch to router.** ()

Answer *three* questions from the following four questions:

[3] (a) 10 millivolts ($10 * .001 = .01$) are measured at the end of a cable. The source voltage was 1 Volt. What is the gain or loss in decibels? [1 mark]

(b) What are the three types of hubs? [1 mark]

[4] Draw the flowchart of the CSMA/CD collision detection.

[2 marks]

[5] (a) What are the advantages of client/server networks?

[1 mark]

(b) If P_{final} is 10 microWatt (10×10^{-6} or .00001 Watts) and P_{ref} is 10 milliWatt (10×10^{-3} or .01 Watts), what is the gain or loss in decibels? Is this value positive or negative? Does the value represent a gain or a loss in power? [1 mark]

[6] (a) State three benefits of switches over hubs.

[1 mark]

(b) Draw the structure of the Ethernet frame.

[1 mark]