King Saud University

College of Computer and Information Sciences

Computer Engineering Department

Boadband and High Speed Networks (CEN 449)

Section Number: ....

Student Name: ....   **Student Number:** ....

Allowed Time: 2 Hours   **Date: (1/1/1437)** (14/10/2015)

Question	Grades	
1	2.5	
2	2.5	
3	3	
4	2	
5	5	
6	2.5	
7	2.5	
Total		

Topic 1 - Introduction to Broadband Networks   **(2.5 Grades)**

Question One - Choose True or False statement :

1. **Narrowband** Refers to technologies that offer high data rates   (False)

2. **Wide Area Networks (WAN)** that optimized for a larger geographic area than a LAN, ranging from several blocks of buildings to entire cities.   (False)

3. The **Access Point** establishes an infrastructure mode for networking between all wireless clients and Ethernet resources.   (True)

4. **Security** means the time it takes a link to recover from failure.   (False)

5. **Rate of transmission** is the amount of time it takes for the head of the signal to travel from the sender to the receiver. It can be computed as link length (s) / propagation speed (v) over the specific medium.   (False)

Question Two - Choose the correct answer a, b, c, d :   **(2.5 Grades)**

1. The maximum data rate for dialup telephone connection lines is 56 Kbps and classified as .... technology.
(a) **Narrowband**   (b) Broadband   (c) Multicast

2. .... Uses the same line as a phone but allows calls to be made at the same time
(a) ATM   (b) Wireless Network   (c) **DSL**

3. It supports multimedia applications such as:Video Telephony and Video Conferencing.
(a) (MAN)   (b) (LAN)   (c) (**WAN**)

4. **..................,** a circuit-switched telephone network system, which also provides access to packet switched networks, designed to allow digital transmission of voice and data over ordinary telephone copper wires, It offers circuit-switched connections (for either voice or data), and packet-switched connections (for data).
(a) ISDN   (b) PSDN   (c) FDDI

 5. ....Low set-up cost as no wiring required.
(a) **Wireless Broadband**   (b) DSL   (c) Dialup connection
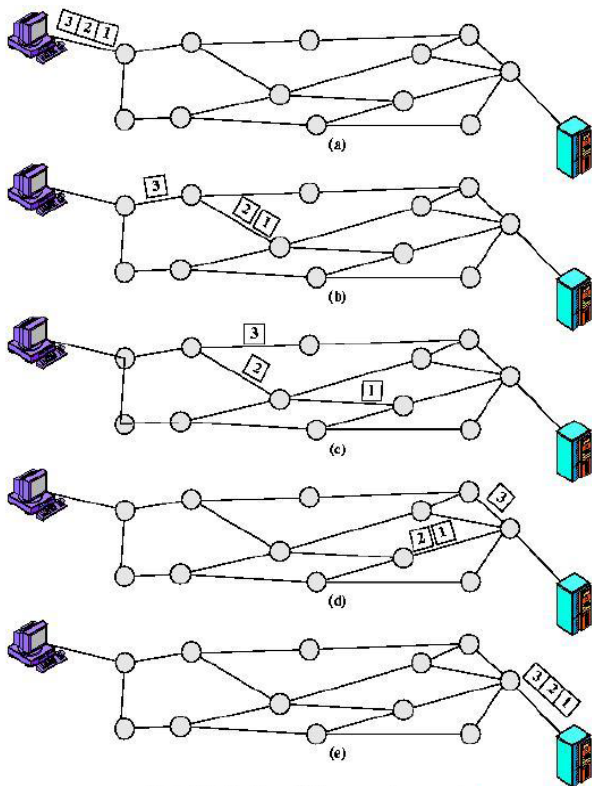
Question Three - Choose True or False statement :

1. Broadband Technologies refer to technologies that offer high data rates, one example of broadband access technologies is **Leased Circuits using modems**.   (False)

2. Frame relay and ATM are variants of **Message Switching.**   (False)

3. **Output contention** occurs when two incoming cells that are destined to different output ports require the same internal link in the switch   (False)
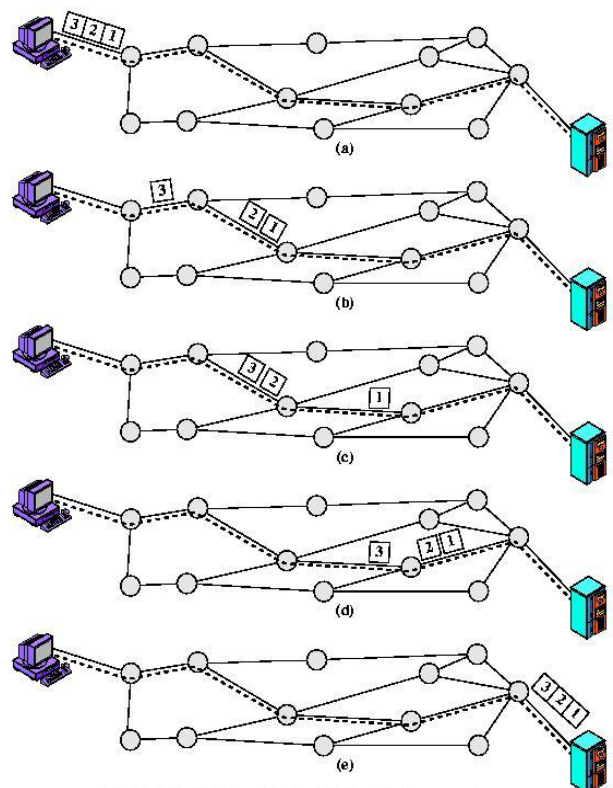---

Question Four- Choose the correct answers :   (2 Grades)

1. .... is a technique by which the total bandwidth available in a communication medium is divided into a series of non-overlapping frequency sub-bands.
(a) FDM   (b) TDM   (c) TST

2. In .... switching, a dedicated line is set up before transmission and is occupied by the user who made that call until the service is terminated.
(a) Circuit   (b) Message   (c) Packet

Question Five- The packet (1), (2), and (3) transferred from sender to receiver, please represent using dotted lines both of datagram and virtual circuit approaches.   (4 Grades)

Packet Switching: Datagram Approach

Packet Switching: Virtual-Circuit Approach

Topic 3 -Network control / Management protocol in High Speed Networks   (2.5 Grades)

Question Six - Choose True or False statement :

1. When two stations (or nodes) using a shared communication, LLC Sublayer determines which is allowed to access the media at any one time.   (False)

2. In adaptive control, the routing path should be determined as the message is routed through the network.   (True)

3. Congestion causes by temporary overload in system.   (True)

4. In virtual-path routing, the basic principle is to group a bundle of connections with the same source and destination   (True)

5. The objectives of flow control/congestion control is to prevent deadlocks.   (True)

Question Seven - Choose the correct answer :   (2.5 Grades)

1. The …………. Providing node-to-node flow and error control
(a) Physical layer   (b) MAC Sublayer   (c) LLC Sublayer

2. In CSMA, The channel is sensed idle while it is actually busy due to…………..
(a) Transmission delay.   (b) Propagation delay.   (c) Collision.

3. In ………….. the route is decided individually.
(a) centralized control   (b) deterministic control   (c)distributed control

4. Flow control/congestion control takes place in ………. To control the flow between two neighboring nodes in the network.
(a) Data Link Layer   (b) Network Layer   (c) Transport Layer

5. …………… protocols are designed for packet recovery due to packet errors or loss
(a) Traffic Policy   (b) Error Control   (c) Congestion Control