IS 171 Introduction to Computer Networks

Test 1 (20 marks)

Date 13th May 2019

Instructions:

1. This test consists of **30** questions
2. Answer ALL questions

QA. For each of the following statements, choose the letter of the most correct statement and write its letter in the answer sheet provided
(10 marks)

1. Telephone systems may be classified as
   A. Simplex and asymmetrical
   B. Simplex and symmetrical
   C. Duplex and symmetrical
   D. Duplex and asymmetrical

2. Which OSI layer header contains the address of a destination host that is on another network?
   A. Application Layer
   B. Data Link Layer
   C. Network Layer
   D. Physical Layer

3. The difference between OSI and TCP/IP models is:
   A. TCP/IP combines Presentation, Session and Application Layers into Network Layer
   B. Data Encoding, Media Access Control and Error handling are performed by one layer in TCP/IP Model.
   C. TCP/IP model is complex to understand and manage due to combination of several layers into fewer layers compared to OSI model.
   D. Internet layer provides connection oriented service

4. Which one of the following is the correct format of a packet header at the Network layer?
   A. Destination logical address, source logical address, destination physical address, source physical address
   B. Destination physical address, source physical address, source logical address, destination logical address
   C. Source physical address, destination physical address, source logical address, destination logical address
   D. Source logical address, destination logical address, source physical address, destination physical address

5. What is the name of the physical path over which a message travels in computer networks?
   A. Communication path
   B. Transmission media
   C. Network path
   D. None of the above

6. Which statement among the following is not true about Wide Area Networks?
   A. It is limited in the use of expensive technologies such as Satellite in its communication
   B. is mostly preferred in Private networks
   C. Facilitates public communication for the nodes in the area where the network covers
   D. Is characterized by slow data transfer due to many collisions involved in the communication

7. Which one among the following is not a well-known port?
   A. 1124
   B. 80
   C. 23
   D. 56

8. Which layer in the OSI reference model is responsible for dialogue control and token management?
   A. Network layer
   B. Session layer
   C. Transport layer
   D. None of the above.

9. Which of the following is not true about physical addresses in LANs?
   A. In unicast addressing, only the addressed network devices will process the sent frame, other devices will not hear the sent frame at all.
   B. In multicast addressing, only a specified group of devices will process the sent frame, other devices not belonging to the group will not hear the sent frame at all.
   C. Broadcast addressing uses a unique address which is used by all network devices to process the sent frame.
   D. None of the above.

10. The addition of information to a protocol data unit as it is passed from one layer to the next is called:
   A. Framing
   B. Decapsulation
   C. Encapsulation.
   D. Conversion

11. Which of the following problems can occur at the Physical layer of the OSI model?
   A. Signal errors caused by noise
   B. Incorrect data format
   C. Incorrect logical address
   D. Incorrect segment size

12. One advantage of a pure p2p over a client/server network architecture is:
   A. Asymmetry data flow
   B. Equal active and passive role provider
   C. Different networking software for both peers
   D. None of the above

13. Which of the following is an Application layer service in the OSI model?
   A. DHCP
   B. Media Access Control
   C. Forwarding Packet to the destinations
   D. None of the above

14. A radio broadcast is an example of which type of transmission?
   A. Full duplex
   B. Simplex
   C. Half duplex
   D. Automatic

15. As a message moves from the lowest layer to the top layer of the OSI reference m
   protocol headers are:
   A. Added
   B. Removed
   C. Rearranged
   D. Modified

16. One of the following is important consideration in wireless ad-hoc networks
   A. There must be access point
   B. End nodes are not required
   C. There is no need of access point
   D. Palmtop devices must replace notebook mobile devices

17. Which one among the following network topologies offers highest reliability?
   A. Bus
   B. Star
   C. Ring
   D. Mesh

18. It is argued that Star topology is preferable in a LAN set up over Mesh topology except that
   A. It lacks robustness in case of central device failure as compared to Mesh topology
   B. It needs fewer cables than mesh but more I/O ports
   C. It allows packets to flow only in one direction (clockwise or anticlockwise) depending on setup
   D. It requires much expertise to manage due to a lot of configurations involved

19. Computer networks can be considered to be consisting of two major parts:
   A. Data representation and Internet
   B. Rules and protocols
   C. Data communications and Structures
   D. None of the above

20. Which layer of the TCP/IP model is used to request hosts to make sure a connection is made to the appropriate port?
   A. Network Layer
   B. Application Layer
   C. Data Link Layer
   D. Physical Layer

Q8. Write **TRUE** for valid and **FALSE** for invalid statements for each of the following statements. **(10 marks)**

1. Physical and Logical network topologies may have the same layout of devices in the network
2. Ports ranging from 0-1023, assigned to the processes that only the operating system or system administrator of the system can access are called registered ports
3. If the data unit at network layer is called a packet and at data link layer is called a frame, then a packet encapsulates a frame
4. Two hosts can have the same logical address in a network
5. During packet or frame transfer, the logical address does not change but physical address may change
6. As a user's message moves from the top layer to the lowest layer of the OSI reference model, the overall data size increases
7. The address on a host where an application or service makes itself available to incoming or outgoing data is known as IP address
8. Star topology and Mesh Topology are topologies in shared media broadcast links category
9. In the context of TCP/IP, a packet is known as a datagram
10. An Application level protocol in which a few manager stations control set of agents is called SNMP/IP