MASENO UNIVERSITY

UNIVERSITY EXAMINATIONS 2015/2016

FIRST YEAR SECOND SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN COMPUTER SCIENCE

WITH INFORMATION TECHNOLOGY

HOMABAY CAMPUS

UCI 102: COMPUTER COMMUNICATIONS SYSTEMS

Date: 22nd April, 2016   Time: 800 - 10.00am

INSTRUCTIONS:

- **Answer ALL Questions in Section A and any other TWO Questions in Section B.**

SECTION A: COMPULSORY (30 MARKS)

Attempt All Questions. Each question in this section carries 1 Mark.

1. The term modem is a composite word that refers to the two functional entities that make up the device: a signal _____ and a signal _____.
   A) modulator; demodulator
   B) demodulator; modulator
   C) modern; demo
   D) none of the above

2. Bluetooth is a _____ technology that connects devices (called gadgets) in a small area.
   A) wired LAN
   B) wireless LAN
   C) VLAN
   D) none of the above

3. A _____ regenerates a signal, connects segments of a LAN, and has no filtering capability.
   A) repeater
   B) bridge
   C) router
   D) none of the above

4. Devices may be arranged in a _____ topology.
   A) Client-server
   B) point-to point
   C) open
   D) None of the above

5. In a _____ connection, two and only two devices are connected by a dedicated link.
   A) Multipoint
   B) point-to-point
   C) (a) and (b)
   D) none of the above

6. Which of the following TCP/IP protocol is used for transferring electronic mail messages from one machine to another?
   A. FTP
   B. SMTP
   C. SNMP
   D. RPC
   E. None of the above

7. A distributed network configuration in which all data/information pass through a central computer is
   A) bus network
   B) star network
   C) ring network
   D) Point-to-point network
   E) None of the above

8. In fiber optics, the signal is _____ waves.
   A) radio
   B) very low frequency
   C) infrared
   D) light

9. The _____ address uniquely defines a host on the Internet.
   A) physical
   B) Specific
   C) port
   D) IP

10. _____ data are continuous and take continuous values
    A) analog
    B) digital
    C) (a) or (b)
    D) none of the above

11. _____ data have discrete states and take discrete values.
    A) Analog
    B) Digital
    C) (a) or (b)
    D) None of the above

12. Which of the following primarily uses guided media?
    A) cellular telephone system
    B) local telephone system
    C) satellite communications
    D) radio broadcasting

13. Which of the following is not a guided medium?
    A) twisted-pair cable
    B) coaxial cable
    C) fiber-optic cable.
    D) atmosphere

14. When a beam of light travels through media of two different densities, if the angle of incidence is greater than the critical angle, _____ occurs.
    A) reflection
    B) refraction
    C) incidence
    D) criticism

15. Which of the following TCP/IP protocol is used for transferring data from one machine to another?
    A. FTP
    B. SMTP
    C. SNMP
    D. RPC
    E. None of the above

16. A distributed network configuration in which all data/information pass through a central computer is
    A)bus network   B) star network   C)ring network   D)Point-to-point network   E)None of the above

17. In fiber optics, the signal is _____ waves.
    A) radio   B) very low frequency   C) infrared   D) light

18. The ____ address uniquely defines a host on the Internet.
    A) physical   B) Specific   C) port   D) IP

19. _____ cables are composed of a glass or plastic inner core surrounded by cladding, all encased in an outside jacket.
    A)Coaxial   B)Fiber-optic   C)Twisted-pair   D)none of the above

20. Data can be _____,
    A) analog   B) digital   C) (a) or (b)   D) none of the above

21. _____ consists of a central conductor and a shield.
    A) Coaxial   B) Fiber-optic   C) Twisted-pair   D) none of the above

22. The _____ is the physical path over which a message travels.
    Protocol   B) Medium   C) Signal   D) All the above

23. To connect a computer with a device in the same room, you might be likely to use
    A. Fiber optic cable   B. Backbone   C. UTP   D. All of the above

24. The slowest transmission speeds are those of
    A. twisted-pair wire   B. coaxial cable   C. fiber-optic cable   D. microwaves

25. Which of the following TCP/IP protocol is used for transferring electronic mail messages from one machine to another?
    A. FTP   B. SMTP   C. SNMP   D. RPC

26. ...Is not internetworking device.
    a)Bridge   b) gateway   c) router   d) all of them

27. A simple bridge does which of the following?
    a)filters a data packet b) forward a data packet   c) extends LAN   d) all of the above

28. Which of the following can be handled by gateway?
    a)protocol conversion b) packet resizing   c) data encryption   d) a and b

29. A repeater takes a weakened or corrupted signal and ... it.
    A) Amplifies   b) regenerates   c) resample   d) reroutes

30. The inner core of an optical fiber is _____ in composition.
    A)   glass or plastic
    B)   copper
    C)   bimetallic
    D)   liquid

QUESTION 2

With the aid of a simple diagram **briefly** discuss the following **four** network topologies. (20 Marks)
- i)   Hybrid Topology
- ii)   Mesh Topology
- iii)   Star Topology
- iv)   Ring Topology
- v)

QUESTION 3

Discuss the features of a survivable system (20 marks)

QUESTION 4

a)   Mention any five elements of communication (5 Marks)

b)   Differentiate between a client-server network and a peer-to-peer network (10 Marks).

c)   What are the advantages of networks? (5 Marks)

QUESTION 5

a)   Give in detail any three network processing modes. (9 Marks)

b)   Which are some of the certifications that a good Network Administrator is supposed to possess? (5 Marks)

c)   Apart from certifications, Network Administrators require skills. Explain some of the skills that a good network administrator should possess. (6 Marks)