Register No: ……

B.TECH DEGREE EXAMINATIONS: APRIL / MAY 2011

Fourth Semester

INFORMATION TECHNOLOGY

U07CS502: Computer Networks

Time: Three Hours **Maximum Marks: 100**

Answer ALL Questions:

PART A (10 x 1 = 10 Marks)

1. Which topology requires a multi-point connection?

   a. Mesh b. Star c. Bus d. Ring

2. In fiber optics, the signal source is ------- waves.

   a. Light b. radio c. infrared d. very low frequency

3. A --------- Connection provides a dedicated link between two devices.

   a. point-to-point b. multipoint c. primary d. secondary

4. In sliding window flow control, the frames to the left of the receiver window are frames------

   a. Received but not acknowledged b. Received and acknowledged

   c. not received d. not sent

5. Which of the following uses the greatest number of layers in OSI model?

   a. bridge b. repeater c. router d. gateway

6. Which of the following is a class A address?

   a. 128.4.5.6 b. 117.4.51 c.192.0.0.0 d. 226.8.0.0

7. The transport layer performs the same type of functions as the ------- layer

   a. Session b. network c. data link d. physical

8. The ------- protocol handles control and error messages in the IP layer.

   a. ICMP b. UDP c. TCP d. SNMP

9. We use an encryption method in which the plaintext HELLO becomes the cipher text KHOOR. This is probably ---------- substitution.

   a. Monoalphabetic b. polyalphabetic c. transpositional d. DES

10. A FTP requires ------- connection for data transfer.

    a. Two b. three c. one d. four

PART B (10 x 2 = 20 Marks)

11. Identify the five basic components of a data communication system.

12. Which OSI layers are the network support layers?
13. List the different rings and their use in FDDI?
14. What is the purpose of the Hamming code?
15. What are the fields contained in LSP?
16. What are the two popular approaches to packet switching?
17. List the phases of TCP connection?
18. How is Resource Reservation Protocol (RSVP) related to Integrated Services?
19. What is DNS?
20. What is MIME? What is its use?

PART C (5 x 14 = 70 Marks)

21. a) Explain in detail the functions of ISO/OSI model in detail.

[OR]

b) (i) Explain the different categories of network topologies? (7)

(ii) Explain about the various guided Medias. (7)

22. a) (i) A system used the Stop-and-Wait ARQ protocol. If each packet carries 1000 bits of data, how long does it take to send 1 million bits of data if the distance between the sender and receiver is 5000 Km and the propagation speed is $2*10^8$ m? Ignore transmission, waiting and processing delays. We assume no data or control frame is lost or damaged. (7)

(ii) Explain in details about the working of IEEE 802.11 (Wireless LAN). (7)

[OR]

b) (i) Explain about the various networking devices. (7)

(ii) Explain Hamming code with example. (7)

23. a) (i) Write the following in slash notation(/n).

a. 255.0.0.0

b. 255.255.224.0

c. 255.255.255.0

d. 255.255.240.0 (7)

(ii) Explain Distance vector routing protocol. (7)

[OR]

b) An organization is granted the block 130.56.0.0/16. The administrator wants to create 1024 subnets.

a. Find the subnet mask.

b. Find the number of addresses in each subnet.

c. Find the first and last addresses in subnet 1.

d. Find the first and last addresses in subnet 1024.

24. a) Explain about the TCP in detail.

[OR]

b) Explain in detail about integrated services.

25. a) Write short notes on SMTP, FTP

[OR]

b) Explain with neat sketches symmetric key cryptography.

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