Roll No.....

Total No. of Questions—8] [Total No. of Printed Pages—3

CO-12401

Fourth Semester Computer Engg.
(N-2012)

(Common to CO & IT)

COMPUTER NETWORKS

Time : 3 hrs. **M.M. 100**

Note :— 1. ***Attempt any Five Questions.***

2. ***Answers should be specific and to the point.***

1. (a) What is Computer Network ? Discuss network topologies in detail. **(10)**

(b) Explain Peer to Peer & Client-Server Model of Networking. **(10)**

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2. (a) Discuss OSI reference Model in detail. **(15)**

(b) What are features of wireless network. **(5)**

3. Write short note on following : (any three)

(i) Repeater

(ii) Router

(iii) Fast Ethernet

(iv) WAN **(20)**

4. (a) Explain IP addressing. Also discuss the concept of sub netting by taking suitable example. **(10)**

(b) Explain IPv4 header format. **(10)**

5. (a) What is the need of IPv6 ? Explain advantages of IPv6 over IPv4. **(10)**

(b) Discuss static channel allocation in LAN & MAN. **(10)**

6. (a) Explain the concept of Non-adaptive routing in detail. **(10)**

(b) How VPN can be implemented, discuss ? What is firewall ? **(10)**

7. (a) What do you mean by the term "cryptography", Explain encryption methods briefly. **(10)**

(b) Explain TCP/IP network Model. **(10)**

8. (a) Explain CSMA & CSMA/CD briefly. **(10)**

(b) Discuss application of Computer Network in various fields. **(10)**

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SECTION - A

1. State True or False :

(a) In OSI Model encryption and decryption are functions of the session layer.

(b) IPv6 has 128 bit addresses.

(c) The Internetworking protocol IP is a connection oriented protocol.

(d) The seven layer ISO model provides guidelines for the development of universally compatible networking protocols.

(e) Traditionally three methods of switching have been important.

(f) A burst error means that two or more bits in the data unit have changed.

(g) All the traffic from inside to out side and vice versa must pass through the firewall.

(h) IEEE standard 802.15.1a is also known as WiMax.

(i) A Bluetooth LAN is an ad Hoc Network.

(j) Hamming distance between two codes 000 and 011 is 2.

(1 × 10 = 10)

2. Fill in the blanks :

(a) ..... is the error detection method which consists of a parity bit for each data unit as well as an entire data unit of partiy bit.

(b) In ..... switching, each packet of a message need not follow the same path from sender to receiver.

(c) ATM is abbreviated as ..... Mode.

(d) ..... are privately owned networks while ..... are usually owned by Government.

(e) Character count uses a field in the header to specify the number of ..... in the frame.

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(f) ..... protocol is used to translate the IP address to MAC address.

(g) IPv4 address consists of ..... bits.

(h) VSAT is abbreviated as ..... .

(i) WiFi is abbreviated as ..... .

(j) ..... standard body created the cables and connector specification used to support Ethernet implementations.

(1 × 10 = 10)

SECTION - B

Attempt any five questions.

3. Explain Mesh Topology. What are its advantages and disadvantages ?

4. How client Server Network differs from Peer to Peer Network ?

5. What is classful addressing ? Explain briefly. What is its limitation ?

6. List various fields in IPv4 datagram.

7. Explain the need for IPv6. How it differs from IPv4 ?

8. Explain various ISDN channels. List various services provided by ISDN.

9. Explain purpose of following commands :

(a) ipconfig/all

(b) traceroute **(5 × 4 = 20)**

SECTION - C

Attempt any Six questions.

10. Consider the following IP address and answer the questions that follow :

210.212.240.31/24

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(a) What is the subnet mask of this network ?

(b) How many hosts can be there in the network ?

(c) What is the address of the network ?

11. Write short note on SIP.

12. Alice meets Bob and says Rjjy rj ts ymj xfggfym. Bj bnqq inxhzxx ymj uqfs. If she is using Caesar Cipher, what does she want to convey ?

13. Name the various protocol in Bluetooth protocol stack. Explain Bluetooth core Protocols.

14. What do you mean by print services ? Explain.

15. Differentiate between static and dynamic routing. What are advantages and disadvantages of static routing ?

16. Explain with example different classes of IP addressing.

17. Write short note on :

(a) Hub

(b) Repeaters **(6 × 5 = 30)**

SECTION - D

Attempt any Three questions.

18. Explain concept of switching. Differentiate between packet and circuit switching.

19. How OSI Model Differs from TCP/IP Model ? Explain functions of Network layer of OSI Model.

20. Generate VRC and LRC with even partiy for the data stream :

11000011 11110011 10110010

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21. What is a firewall ? What are the characteristics of a good firewall implementation ? What are main functions of packet filter ?

(3 × 10 = 30)

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