

B.TECH. DEGREE EXAMINATIONS: APRIL / MAY 2009

Fourth Semester

INFORMATION TECHNOLOGY**U07CS502 Computer Networks****Time: Three Hours****Maximum Marks: 100****Answer ALL the Questions:-****PART A (20 x 1 = 20 Marks)**

1. Logical addressing is the responsibility of which layer in the ISO-OSI model?
(a) physical layer (b) data link layer (c) network layer (d) application layer.
2. An IPv6 address is _____ long.
(a) 128 bits (b) 28 bits (c) 32 bits (d) 132 bits
3. In mesh topology _____ duplex mode links are needed.
(a) $n(n+1)/2$ (b) $n(n-1)/2$ (c) $n(n-1)$ (d) $n(n-1)/4$
4. For multimedia applications fiber optic technology is preferred due to its
(a) cost (b) colour (c) reflections (d) bandwidth
5. _____ is the popular error detecting code used in the Internet.
(a) check sum (b) CRC (c) hamming code (d) LRC
6. To improve the efficiency of bidirectional protocols in data link layer a technique is used namely:
(a) piggy backing (b) balanced mode (c) PPP (d) duplex.
7. IEEE 802.11 has two sub layers equivalent in ISO-OSI data link layer namely
(a) physical and network (b) LLC and MAC
(c) session and presentation (d) BSS and ESS.
8. A Repeater is a network device that operates only in _____ layer.
(a) application (b) session (c) network (d) physical.
9. VCI means
(a) Verilog Channel Identifier (b) Virtual Channel Identifier
(c) Virtual Circuit Identifier (d) Very long Circuit Identifier.
10. Find the class of this address: 252.5.15.111
(a) class A. (b) class B (c) class D (d) class E.
11. RIP is an implementation of _____ protocol.
(a) Distance-vector routing. (b) Link state routing
(c) OSPF routing (d) BGP routing.

12. Switching at the network layer in the Internet uses _____ approach.
- (a) circuit switching (b) message switching
(c) datagram switching (d) cell switching.
13. The combination of an IP address and a port number is called as _____
- (a) socket address (b) port address (c) IPv6 (d) TCP address
14. In TCP, Port 111 uses which of the following protocol:
- (a) HTTP (b) RPC (c) FTP (d) DNS.
15. A _____ packet is a packet sent by a node to the source to inform it of congestion.
- (a) choke (b) window (c) implicit. (d) explicit.
16. The Diffserv model defines PHB for each node that receives a packet. PHB means
- (a) Per Hour Behavior (b) Per Hop Behavior
(c) Pre Hop Behavior (d) Pre Hour Behavior
17. Mapping a name to an address or an address to a name in DNS is called as name-address _____
- (a) solution (b) resolution (c) domain (d) addressing.
18. The mail access protocol POP3 stands for _____ .
- (a) Print Office Protocol (b) Post Online Protocol
(c) Print Online Protocol (d) Post Office Protocol.
19. In cryptography RSA algorithm is a
- (a) public key cryptography (b) private key cryptography
(c) both public and private key cryptography (d) session key
20. DES is designed with _____ key size.
- (a) 24 bit (b) 48 bit (c) 56 bit (d) 64 bit

PART B (5 x 16 = 80 Marks)

21. (a) (i) Explain the ISO-OSI model with neat diagram and the functionalities of each layer. (8)
- (ii) Explain the various network topologies and its advantages (8)
- (OR)**
21. (b) (i) How do you classify the wired transmission media and discuss each of its advantages and disadvantages. (8)
- (ii) Explain the TCP/IP protocol suite and its suitability in Internet. (8)

22. (a) (i) Explain the design principle of CRC mechanism. (8)
(ii) What are the various networking devices. Explain each. (8)
- (OR)**
22. (b) (i) Explain the CSMA/CD approach and its advantages. (8)
(ii) What do you mean by ARQ. Explain the selective repeat method. (8)
23. (a) (i) Explain the techniques of packet switching and discuss its suitability in the present Internet. (8)
(ii) Explain the techniques of subnetting and masking with typical example. (8)
- (OR)**
23. (b) (i) Draw and explain the IPv4 datagram header format. (8)
(ii) Write short notes on following: (8)
(a) Internetworking (b) OSPF
24. (a) (i) What are the various functions of Transport layer. (8)
(ii) What do you mean by Multiplexing and how it is useful in transport layer. Explain it. (8)
- (OR)**
24. (b) (i) What are the techniques used to improve QoS. Discuss it. (8)
(ii) Explain the TCP header format and its fields. (8)
25. (a) (i) Explain the various functionality of DNS and its importance in web. (8)
(ii) Write short notes on following: (8)
(a) SMTP (b) WWW
- (OR)**
- (b) (i) What is DES. How it is useful in security. Explain the DES algorithm. (8)
(ii) Explain the principle of RSA algorithm and discuss its advantages (8)
