Total No. of printed pages = 3

MCA 182501

Roll No. of candidate | | | | | | | | | | |

9/3/2021

M.C.A. 5th Semester End-Term Examination

COMPUTER NETWORKS – II

New Syllabus & Regulation (W.e.f. 2018-19)

Full Marks – 70 Time – Three hours

The figures in the margin indicate full marks for the questions.

Answer question No. 1 and any *four* from the rest.

1. Choice the appropriate answer: (10 × 1 = 10)

(i) Several computers are linked to a server to share programs and storage space which is called a

(a) library (b) network

(c) grouping (d) integrated system

(ii) A distributed network 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

(iii) Frames from one LAN can be transmitted to another LAN via the device

(a) router (b) bridge

(c) repeater (d) modern

(iv) The physical path over which a message travel

(a) protocol (b) path

(c) medium (d) route

(v) Communication channel is shared by all the machines on the network in

(a) unicast network (b) broadcast network

(c) multicast network (d) none of these

(vi) Which of the following is not a function of network layer?

(a) inter networking (b) congestion control

(c) routing (d) none of these

(vii) What statement are true regarding ICMP packets

(1) They acknowledge receipt of a TCP segment

(2) They guarantee datagram delivery.

(3) They can provide hosts with information about network problems.

(4) They are encapsulated within IP datagrams.

(a) 1 only (b) 2 and 3

(c) 3 and 4 (d) 2,3 and 4

(viii) What protocol is used to find the hardware address of a local device?

(a) RARP (b) ARP

(c) IP (d) ICMP

(ix) What is the maximum number of IP addresses that can be assigned to hosts on a local subnet that uses the 255.255.255.224 subnet mask?

(a) 14 (b) 15

(c) 16 (d) 30

(x) How long is an IPv6 address?

(a) 32 bits (b) 128 bits

(c) 64 bits (d) 128 bytes

2. (a) Describe the header of IPv4 protocol with diagram. (5)

(b) What is subnetting? What are the rules for creating a CIDR block? (2+3)

(c) Describe the working of a NAT system. (5)

3. (a) Write about the different types of classful addressing of IP addresses. (5)

(b) Describe the working principle of IGMP protocol. (5)

(c) What is internetworking? What are the different types of internetworking? (5)

4. (a) Given the IP address 20.10.30.35/27. Find the range of IP addresses in that CIDR block. (5)

(b) Describe a protocol for logical to physical address mapping. (5)

(c) Write briefly about two fundamentals of cryptographic principles. (5)

5. (a) Differentiate ARP, RARP, BOOTP and DHCP. (7)

(b) Describe the tunneling process of transition from IPv4 to IPv6. (5)

(c) State features of UDP. (3)

6. (a) Describe the working of DNS protocol service. (5)

(b) What is congestion in network? write about the general principles of congestion control services. (5)

(c) Write about the use of Digital signature. Differentiate between symmetric key signature and public key signature. (5)

7. Write short notes on (any *three*) from the followings : (3 × 5 = 15)

(a) Symmetric-Key vs Asymmetric-Key Cryptography

(b) Dual stack routers

(c) IPv6 header

(d) DNS

(e) SMTP