

Seat No. : _____

N24-126

December-2014

4th Year M. Sc. (CA & IT) (Integrated)

Advanced Networking

Time : 3 Hours]

[Max. Marks : 100

1. (A) Answer any **four** : **4**

- (i) Which address is temporarily used while booting, where a host needs to communicate but does not have an IP address ?
- (ii) What is use of MTU and fragmentation offset ?
- (iii) A packet originated from host with IP address 172.16.114.148 is discarded. What can be reason behind that ?
- (iv) What process is used in ARP to avoid jitter ?
- (v) What is use of RARP ?

(B) Answer any **two** : **6**

- (i) Explain record route option in used in IP option.
- (ii) Draw ARP message format and explain its fields in brief.
- (iii) Explain limited broadcast address.

(C) Answer any **two** : **10**

- (i) Explain Glassful Addressing scheme in detail. Also state any three weakness found in this scheme.
- (ii) Draw IP datagram format. Explain type of service and differential service.
- (iii) Explain ARP Cache, soft state technique and its advantages–disadvantages.

2. (A) Answer any **four** : **4**
- (i) What can be the subnet mask if Class A address block is divided into 128 subnetworks ?
 - (ii) Define how many subnetworks are created if the subnet mask for class B address is 255.255.255.0.
 - (iii) What is the subnet address if one of the hosts address is 197.197.97.97 and subnet mask given is 255.255.255.224 ?
 - (iv) Which ICMP message is used in ping command ?
 - (v) What is the use of router solicitation and Advertisement ICMP message ?
- (B) Answer any **two** : **6**
- (i) Why does IP software avoid using physical address when storing and computing routes ?
 - (ii) Write Unified Forwarding algorithm.
 - (iii) How Multiplexing and DE multiplexing is used in UDP ?
- (C) Answer any **two** : **10**
- (i) Which ICMP message format is used in case of circular or excessive long routes ? Explain in detail.
 - (ii) Explain process of Next -Hop forwarding with example.
 - (iii) Explain process of subnetting and how its address scheme differ from original 32-bit IP address scheme.
3. (A) Answer any **four** : **4**
- (i) What is Slirp ?
 - (ii) POP3 uses which TCP port ?
 - (iii) What is NAPT ?
 - (iv) Which are two basic technique that makes VPN possible ?
 - (v) What is RED ?

- (B) Answer any **two** : **6**
- (i) Explain process of NAT translation table creation.
 - (ii) Explain the VPN addressing and routing process with example.
 - (iii) List the properties of Reliable delivery service and explain in brief.
- (C) Answer any **two** : **10**
- (i) Explain different states through which client goes in DHCP using state transit diagram.
 - (ii) Explain sliding window in case of TCP.
 - (iii) Draw DHCP message format and explain its fields in detail.
4. (A) Answer any **four** : **4**
- (i) For FTP Data transmission which port is used ?
 - (ii) What is the use of “pro” domain ?
 - (iii) What is VNC ?
 - (iv) What is RFC 2822 ?
 - (v) What does the client query contains in case of DNS ?
- (B) Answer any **two** : **6**
- (i) Explain the use and structure of pointer query in case of DNS.
 - (ii) What are the different criteria that should be match for obtaining authority for a subdomain ?
 - (iii) What is TELNET ? How does it works in heterogeneous environment ?
- (C) Answer any **two** : **10**
- (i) Explain the DNS message format with explanation of Question section and resource record.
 - (ii) What is DNSSEC ? Explain in detail.
 - (iii) Explain NFS and its implementation with RPC and XDR.

5. (A) Answer any **four** : **4**
- (i) What is CGI ?
 - (ii) What is the format of URL that follows http scheme ?
 - (iii) What is the port used for https ?
 - (iv) What is HMAC with SHA-1 and HMAC with MD5 ?
 - (v) What are mutable fields ?
- (B) Answer any **two** : **6**
- (i) What are the different aspects in information security which should be considering while drafting security policy ?
 - (ii) Explain persistent connection with its advantage and disadvantage ?
 - (iii) What is the use of caching in http ? How HTTP allow servers to control caching ?
- (C) Answer any **two** : **10**
- (i) List the general characteristics of IPSEC. Explain IPSEC authentication header with SA.
 - (ii) What are the consequences of Restricted access for clients in firewall implementation ? Explain Stateful firewall working and its management.
 - (iii) List and explain the characteristics of HTTP ?
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