

Name :

Roll No. :

Invigilator's Signature :

CS/B.Tech(ECE)/SEPARATE SUPPLE/SEM-8/EC-804A/2011

2011

INTERNET TECHNOLOGY

Time Allotted : 3 Hours

Full Marks : 70

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

GROUP – A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for any *ten* of the following :

10 × 1 = 10

i) Maximum size of IP Datagram is equal to MTU of

- | | |
|-----------------|------------------|
| a) Hyperchannel | b) Ethernet |
| c) Token Ring | d) Wireless Lan. |

ii) Distance vector routing protocol is an example of

- | |
|---------------------|
| a) Next hop routing |
| b) Source routing |
| c) LLC |
| d) Network. |



iii) The ICMP is a protocol.

- a) Network layer
- b) Transport layer
- c) Application Layer
- d) Physical Layer.

iv) RARP server send the RARP reply to

- a) Unicast address
- b) Broadcast address
- c) Multicast address
- d) None of these.

v) protocol used for exterior routing.

- a) RIP
- b) OSPF
- c) BGP
- d) None of these.

vi) is a switched WAN technology which has 53 byte cell as end product.

- a) ATM
- b) X.25
- c) ISDN
- d) Frame Relay.



vii) Which of the following can be the beginning address of a block that contains 1024 addresses ?

- a) 205.16.37.32
- b) 190.162.42.0
- c) 17.17.32.0
- d) 123.45.24.52.

viii) DNS protocol is a

- a) Data link layer protocol
- b) Network layer protocol
- c) Transport layer protocol
- d) Application layer protocol.

ix) Internet Protocol datagram Time to Live field is used for

- a) Discard datagram
- b) routing
- c) Type of service selection
- d) error detection.



- x) Direct Delivery use for routing between two
- a) Host
 - b) Physical network
 - c) Internet
 - d) None of these.
- xi) Internet Protocol datagram differentiated services field is used for
- a) discard datagram
 - b) routing
 - c) type of service selection
 - d) error detection.
- xii) DHCP has similar purpose as
- a) ARP
 - b) RARP
 - c) TELNET
 - d) BOOTP.

GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following. $3 \times 5 = 15$

2. What is the broadcast address for Ethernet ? What are the advantages of Classless IP address over Class-full IP address ?

2 + 3



3. What is the difference between unicast and multicast routing ? Why would an Internet need an Autonomous System ? 2 + 3
4. The ATM standard defines how many layers ? Briefly explain each of them ? 1 + 4
5. What is the main drawback of RARP ? How BOOTP overcome those drawback ? 1 + 4
6. Briefly describe different types of packet format of Border Gateway Protocol's messages.

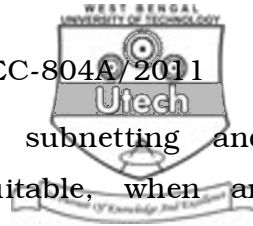
GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following. 3 × 15 = 45

7. a) An ISP is granted a block of address starting with 150.80.0.0/16. The ISP wants to distributes these blocks to customers as follows :
 - i) The first group has 200 medium-size business, each needs 128 addresses.
 - ii) The second group has 400 small businesses, each needs 16 addresses.
 - iii) The third group has 2048 households, each needs 4 addresses.

Design the subblocks and give the slash notation for each subblock. Find out how many addresses are still available after this allocations.



- b) What is the difference between subnetting and supernetting ? Which one is suitable, when an organization wants to divide its own network into some small networks ? Explain your answer.
- c) Explain the RARP frame format. What is the size of an RARP packet when the protocol is IP and the hardware is Ethernet ?
 $5 + (2 + 2) + (4 + 2)$
8. a) What is the minimum length of a BOOTP packet ? A BOOTP packet is encapsulated in a UDP packet, which is encapsulated in an IP packet, which is encapsulated in frame. A RARP packet, on the other hand, is encapsulated only in a frame. Find the efficiency of a BOOTP packet versus a RARP packet.
- b) Briefly describe TCP segment format.
- c) What are the drawbacks of routing with partial information ? What is Core Routers ? What is the necessity of automatic route propagation ?
 $(2 + 4) + 3 + (2 + 2 + 2)$
9. a) List RIP shortcomings and their corresponding fixes. Describe the message format of RIP1 ?
- b) Why OSPF is much more efficient than RIP ? What is the basis of classification for the four types of links defined by OSPF ?
- c) Describe the link state routing algorithm and also state the advantages of link state routing algorithm ?
 $(2 + 3) + (2 + 2) + (4 + 2)$



10. a) How switched WAN technology differs from LAN technology ?

b) What is ISDN ? Draw and explain the B-ISDN functional architecture.

c) Explain how security Association in IPSec is used in VPN Technology.

d) What are the sub-protocols used by SSL ? Briefly describe the working principle of Handshake protocol of SSL ?

$$2 + (1 + 3) + 4 + (1 + 4)$$

11. Write short notes on any *three* of the following : 3 × 5

a) ATM

b) DHCP

c) DNS

d) VOIP

e) FRAME RELAY.

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