CS/B.TECH(ECE) (SUPPLE)/SEM-8/EC-804A/09
INTERNET TECHNOLOGY (SEMESTER - 8)

1. ..... *Signature of Invigilator*

2. ..... *Signature of the Officer-in-Charge*

Reg. No. | | | | | | | | | | | | | | |

Roll No. of the Candidate | | | | | | | | | | | | | | |

CS/B.TECH(ECE) (SUPPLE)/SEM-8/EC-804A/09

ENGINEERING & MANAGEMENT EXAMINATIONS, JULY – 2009

INTERNET TECHNOLOGY (SEMESTER - 8)

Time : 3 Hours] [Full Marks : 70

INSTRUCTIONS TO THE CANDIDATES :

1. This Booklet is a Question-cum-Answer Booklet. The Booklet consists of **32 pages**. The questions of this concerned subject commence from Page No. 3.
2. a) In **Group – A**, Questions are of Multiple Choice type. You have to write the correct choice in the box provided **against each question**.
   b) For **Groups – B** & **C** you have to answer the questions in the space provided marked 'Answer Sheet'. Questions of **Group – B** are Short answer type. Questions of **Group – C** are Long answer type. Write on both sides of the paper.
3. **Fill in your Roll No. in the box** provided as in your Admit Card before answering the questions.
4. Read the instructions given inside carefully before answering.
5. You should not forget to write the corresponding question numbers while answering.
6. Do not write your name or put any special mark in the booklet that may disclose your identity, which will render you liable to disqualification. Any candidate found copying will be subject to Disciplinary Action under the relevant rules.
7. **Use of Mobile Phone and Programmable Calculator is totally prohibited in the examination hall.**
8. You should return the booklet to the invigilator at the end of the examination and should not take any page of this booklet with you outside the examination hall, **which will lead to disqualification**.
9. Rough work, if necessary is to be done in this booklet only and cross it through.

No additional sheets are to be used and no loose paper will be provided

FOR OFFICE USE / EVALUATION ONLY

Marks Obtained

	Group – A										Group – B			Group – C				
Question Number																	***Total Marks***	***Examiner's Signature***
Marks Obtained																		

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Head-Examiner/Co-Ordinator/Scrutineer

S-53039 (30/07)

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GROUP – A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for any *ten* of the following : 10 × 1 = 10

i) Two dissimilar networks can be connected using

a) a router

b) a gateway

c) a bridge

d) all of these, depending on network types. ☐

ii) IP standards available in the market are

a) IPV4 b) IPV6

c) both (a) & (b) d) none of these. ☐

iii) Internet can operate in

a) connection oriented number

b) connectionless number

c) both (a) & (b)

d) none of these. ☐

iv) Internet may use

a) unicasting b) multicasting

c) broadcasting d) all of these. ☐

v) Internet performance can be evaluated using metrics (es)

a) delay

b) throughput

c) delay throughput product

d) all of these.

vi) Important components in the internet architecture are

a) host computers b) routers

c) servers d) protocol layers

e) (a), (b) & (d) f) (a) – (d).

vii) A classful network can use network numbers represented only in

a) octets b) nibbles

c) bits d) all of these.

viii) A routing table needs

a) host IP addresses b) subnet mask specifier

c) congestion status information d) all of these.

ix) IPV4 *vs* IPV6

a) dotted decimal notation *vs* dotted hexadecimal notation

b) old *vs* new

c) 32 *vs* 128

d) all of these.

x) RIP uses

a) TCP for all message transmissions

b) UDP for all message transmissions

c) all of these

d) none of these.

xi) TCP/IP protocol software needs configuring

a) IP address (es) b) default IP router address

c) address mark (s) d) DNS server address

e) all of these f) (a), (b) & (d).

GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following. 3 × 5 = 15

2. a) If a satellite is exactly 20,000 miles above the earth's surface, how long does it take a radio signal to reach the satellite and be transmitted back and if the satellite is at exactly 22,236 miles ? (Assume that the signal propagates at the speed of light and the satellite takes 53 microseconds to retransmit a signal). $2\frac{1}{2}$

b) Explain why each radio station in an area must be assigned a unique carrier frequency. $2\frac{1}{2}$

3. a) Write a *C*-program to evaluate a check sum.

Take $G(x) = x^6 + x^3 + x + 1$. 4

b) Why can *CRC*-32 be better preferred to *CRC*-16 in a long-distance network ? 1

4. a) Why is Ethernet inappropriate for use in a WAN ? 2

b) Would you expect queueing delays, access delays and propagation delays to be longer in a LAN or on a WAN ? Explain. 3

5. a) What is the major advantage of using virtual packets instead of frames ? 1

b) Describe all fields in an IPV4 header. 4

6. a) What is the primary advantage of allowing HTML to choose display details such as the size of items on the display ? What is the major disadvantage ? $1 + \frac{1}{2}$

b) What interpreters can a browser contain besides HTML and FTP ? 2

c) Explain the working principle of a DNS server. $1\frac{1}{2}$

GROUP – C

(Long Answer Type Questions)

Answer any *three* questions. 3 × 15 = 45

7. a) What is multicasting ?

b) With reference to IPV4 discuss multicast addressing.

c) Compare & contrust multicasting in IPV4 and IPV6.

d) Discuss on a multicast routing protocol.

e) Discuss on a broadcast routing protocol. 1 + 2 + 2 + 5 + 5

8. Write a detailed note on classful and classless adressing as used in IPV4. 15

9. Write short notes on the following : 5 + 5 + 5

a) Client-server architecture

b) Socket programming

c) UDP.

10. a) What is static routing ?

b) What is dynamic routing ?

c) What is a static router ?

d) What is a dynamic router ?

e) Describe the Border Gateway Protocol (BGP)

f) Discuss on RIP and OSPF.

g) How do you prepare and send an *e*-mail ? 1 + 1 + 1 + 1 + 3 + (3 + 3) + 2

11. Write a detailed note on SNMP (Simple Network Management Protocol). 15

12. a) How does Bootp work ?

b) What is DHCP ?

c) Discuss on the optimizations in DHCP.

d) Describe IPV6 features.

e) What is QOS(Quality of Service) ?

f) How is QOS maintained ? Discuss. 5 + 2 + 3 + 2 + 1 + 2

END