CS/BCA (Supple)/SEM-6/BCAE-601A/09
ADVANCED NETWORKING AND COMMUNICATION (SEMESTER - 6)

1. ....
Signature of Invigilator

2. ....   **Reg. No.**
Signature of the Officer-in-Charge

Roll No. of the Candidate

CS/BCA (Supple)/SEM-6/BCAE-601A/09
ENGINEERING & MANAGEMENT EXAMINATIONS, AUGUST – 2009
ADVANCED NETWORKING AND COMMUNICATION (SEMESTER - 6)

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 Objective type. You have to answer the answer in the space provided marked **"Answer Sheet".**

   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				Total Marks	Examiner's Signature
Question Number															
Marks Obtained															

....
Head-Examiner/Co-Ordinator/Scrutineer

S–54002 (17/08)

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GROUP – A

(Objective Type Questions)

1. Answer any *ten* of the following questions :   10 ∞ 1 = 10

   A. Choose the correct alternatives for the following :

   i) DNS is a/an .... layer protocol.

      a) transport

      b) between application and transport

      c) application

      d) between transport and network.

   ii) The .... nameserver certainly has the IP address of a host.

      a) Local   b) Root

      c) Intermediate   d) Authoritative.

   iii) If one were to describe the mapping between IP address and host names, the mapping would be

      a) one-one   b) one-many

      c) many-one   d) many-many.

iv)   The default mode of HTTP 1.1 is

   a)   persistent connections without pipelining

   b)   persistent connection with pipelining

   c)   non-persistent connection with pipelining

   d)   non-persistent connection without pipelining.

v)   Bit stuffing is needed for address, data and FCS fields of the HDLC frame.

   a)   True   b)   False.

vi)   Switches also work as repeaters.

   a)   True   b)   False.

vii)   Which is not an application layer protocol ?

   a)   HTTP   b)   FTP

   c)   RARP   d)   SMTP.

viii)   ARP protocol is used to map

   a)   hardware address to hardware address

   b)   physical address to logical address

   c)   IP network address to hardware address

   d)   none of these.

ix)   TCP is a/an

   a)   reliable connection oriented protocol

   b)   unreliable connection oriented protocol

   c)   reliable connectionless protocol

   d)   unreliable connectionless protocol.

B.   Fill in the blanks :

    x)   DHCP means ....

    xi)   Layer-3 switches work on .... layers of

         IP model.

    xii)   CIDR stands for ....

    xiii)   MAC address stands for ....

GROUP – B

(Short Answer Type Questions)

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

2.   What do you mean by connectionless and connection oriented delivery of packets ? What are the protocols responsible for it in TCP/IP ?   3 + 2

3.   Explain different types of line coding scheme.

4.   Explain RSA algorithm.   1 + 4

5.   What is Data Encryption Standard (DES) ? How does it work ?   1 + 4

6.   What do you mean by routing ? Compare link state routing and distance vector routing.   1 + 4

7.   What is Datagram ? When is it used ? Discuss the difference between ARP & RARP.

                    1 + 1 + 3

GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following. $3 \times 15 = 45$

8. a) How many bits are used to represent the netid and hostid part of an IP address in Class A, B and C networks ?   6

b) What is multi-cast address and why is it used ?   3

c) Explain IP routing. How does it take place ?   6

9. a) Describe the characteristics and application of the following network devices :   6

     i) Routers

     ii) Bridges

     iii) Switches.

b) Answer the following : $2 \times 4\frac{1}{2}$

     i) Explain ISDN BRI services.

     ii) Differentiate between broadband and baseband services.

10. Explain any *three* of the following with the help of a suitable diagram/example : 3×5

     a) 3-way handshaking for connection establishment

     b) Flow control at transport layer

     c) IP subnetting

     d) UDP Header Format.

11. a) Describe and compare the following routing algorithms 8

      i)   Shortest path routing

      ii)   Flooding

      iii)   How does ATM differ from frame relay ?

    b) List and briefly define the ATM service classes. 7

12. a) What is congestion control ? How does it occur ? 5

    b) How does TCP handle connection establishment and crash recovery ? 5

    c) List and explain any five ISDN applications. 5

13. a) Describe the characteristics of physical layer and ATM adaptation layer. Also show the ATM protocol model. 7

    b) What is the difference between N-ISDN and B-ISDN ? Discuss five applications of ISDN. 8

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END