Code: AE71/AC67/AT67   Subject: DATA COMM. & COMPUTER NETWORK

AMIETE – ET/CS/IT (NEW SCHEME)

Time: 3 Hours	**DECEMBER 2011**	Max. Marks: 100

NOTE: There are 9 Questions in all.

- **Please write your Roll No. at the space provided on each page immediately after receiving the Question Paper.**
- **Question 1 is compulsory and carries 20 marks. Answer to Q.1 must be written in the space provided for it in the answer book supplied and nowhere else.**
- **The answer sheet for the Q.1 will be collected by the invigilator after 45 Minutes of the commencement of the examination.**
- **Out of the remaining EIGHT Questions answer any FIVE Questions. Each question carries 16 marks.**
- **Any required data not explicitly given, may be suitably assumed and stated.**

Q.1   **Choose the correct or the best alternative in the following:**   (2×10)

a. Which of the following is not a type of network?

   (A) Intranet   (B) Ad Hoc network
   (C) Extranet   (D) Simple network

b. Which of the following characteristics of a carrier signal is changed to load information on it?

   (A) Phase   (B) SNR
   (C) Signal strength   (D) Bandwidth

c. Which of the following is not a transmission media in a wire line network?

   (A) Co-axial cable   (B) Twisted pair
   (C) Optical Fiber   (D) Microwave

d. The Multiple access of a transmission media is NOT achieved through

   (A) FDM   (B) CDMA
   (C) TDM   (D) ADM

e. In PCM quantization level 16 is represented by _____ bits.

   (A) 8   (B) 5
   (C) 4   (D) 16

f. Which of the following is mail transfer protocol?

   (A) SMTP   (B) PEM
   (C) MIME   (D) PGP

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g. FDDI is a type of

(A) Satellite   **(B)** MAN
(C) WAN   **(D)** LAN

h. Which of the following remote access method does not use TCP/IP?

(A) SMS   **(B)** telnet
(C) rlogin   **(D)** ftp

i. Even parity is achieved by padding additional

(A) Even number high bits to make number of high bits even
(B) Odd number of low bits to make number of high bits even
(C) Odd number of high bits to make number of high bits even
(D) Odd number of low bits to make number of low bits even.

j. Sliding Window protocol is a

(A) Routing protocol   **(B)** Configuration mechanism
(C) Multiple access method   **(D)** Resource sharing method

Answer any FIVE Questions out of EIGHT Questions.
Each question carries 16 marks.

Q.2 a. Give the main function of all seven layers of OSI model   **(8)**

         b. What are the different components of a network communication system?   **(8)**

Q.3 a. What are transmission impairments? Explain the term SNR.   **(8)**

         b. Differentiate between wireless and wire line communication.   **(8)**

Q.4 a. How the synchronous transmission differs from asynchronous transmission? What is overhead in synchronous transmission?   **(8)**

         b. What are the different types of possible errors in asynchronous transmission?   **(8)**

Q.5 a. What is multiplexing? Explain the FDM methodology to allow sharing of single resources among various users.   **(8)**

         b. Describe the HDLC protocol. How does it control the flow of data in network traffic?   **(8)**

Q.6 a. Describe the least cost algorithm used in packet switching.   **(8)**

         b. How congestion is managed in a packet switched network?   **(8)**

Q.7 a. What is the role of transmission media in communication network? Give three examples of transmission media used in LAN? **(8)**

     b. Explain the architecture of WLAN. **(8)**

Q.8 a. Discuss IPv6 protocol and its structure. **(8)**

     b. Briefly explain the principles of Internetworking. **(8)**

Q.9 Write short notes on **TWO** of the followings:

         (i) SMTP
         (ii) TCP/IP
         (iii) DNS operation. **(8+8)**