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

AMIETE – ET/CS/IT (NEW SCHEME)

Time: 3 Hours   **JUNE 2012**   **Max. Marks: 100**

PLEASE WRITE YOUR ROLL NO. AT THE SPACE PROVIDED ON EACH PAGE IMMEDIATELY AFTER RECEIVING THE QUESTION PAPER.

NOTE: There are 9 Questions in all.

- **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 is not a transmission media for wire line communication network?

(A) Twisted pair   (B) Fiber optics Cable
(C) Coaxial cable   (D) Radio wave

b. E-mail is the task performed at which of the following layer of OSI?

(A) Session Layer   (B) Physical Layer
(C) Application Layer   (D) Presentation layer

c. Number of channels of 100 kHz in a frequency range from 1800 MHz to 1862 MHz is equal to

(A) 62   (B) 612
(C) 620   (D) 310

d. Which of the following modulation is used to convert analog data into digital?

(A) PSK   (B) DPCM
(C) QPSK   (D) FSK

e. Which of the following is not transmission impairment?

(A) Fading   (B) Thermal effect
(C) Light   (D) Noise

f. IP address in IPv4 is of

(A) 4 Bytes
(B) 32 bits
(C) <1 to 3 bytes for net address><3 to 1 bytes for host address>
(D) All the above

g. Which is of the following is a network component to connect two networks?

(**A**) Bridge   (**B**) Hub
(**C**) Modem   (**D**) Router

h. Which of the following is not true about session layer in OSI model? Session layer comes.

(**A**) Above transport layer
(**B**) Below presentation layer
(**C**) Between transport and network layer
(**D**) Between transport and network layer

i. Odd parity is achieved by padding additional

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

j. UDP is implemented over _____protocol

(**A**) Connection oriented   (**B**) Connectionless
(**C**) Only of wired network   (**D**) None of these

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

Q.2   a.   What is communication protocol and why is it required?   **(8)**

b.   Define the concept of Internet. Discuss the addressing schemes generally used in internetworking.   .   **(8)**

Q.3   a.   What is multi path fading? What is the effect of multi path fading on network communication?   **(8)**

b.   What is difference between base band and broadband transmission? Explain the term channel capacity.   **(8)**

Q.4   a.   Explain Synchronous Transmission. Discuss CRC.   **(8)**

b.   How the analog signal is converted into digital data? Explain ADC quantization level.   **(8)**

Q.5   a.   How single resource is shared among many users? Explain the technique of statistical TDM.   **(8)**

b. Why flow control is required in network communication? Discuss the role of buffer in the control of flow. **(8)**

Q.6 a. Explain Bellman-Ford Least Cost Algorithm. **(8)**

b. Explain the effect of congestion on network traffic and its control mechanism. **(8)**

Q.7 a. Describe the mechanism of accessibility of transmission media in BUS topology of LAN. **(8)**

b. Is it possible for multiple users to access and use the transmission media at the same time in BUS topology? Discuss. **(8)**

Q.8 a. Describe the addressing format used in IPv6. How the multicast packet is addressed in IPv6? **(8)**

b. How the TELNET differs from FTP? Explain the command used to upload multiple files using FTP. **(8)**

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

(i)   Directory Service
(ii)   POP up email server
(iii)   UDP. **(8+8)**