



(Following Paper ID and Roll No. to be filled in your Answer Book)

**PAPER ID : 131702**

Roll No. 

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**B. Tech.**

(SEM. VII) (ODD SEM.) THEORY  
EXAMINATION, 2014-15  
**DATA COMMUNICATION NETWORKS**

Time : 3 Hours]

[Total Marks : 100

- Note :**
- (1) Attempt **all** questions.
  - (2) All questions carry **equal** marks.
  - (3) Assume any data missing.

- 1 Answer any **four** parts of the following : **5×4=20**
- (a) Compare TCP/IP and OSI model on basis of services, protocols and interfaces.
  - (b) Explain function of Transport layer of TCP/IP model.
  - (c) Explain bit stuffing in data with suitable example.
  - (d) What are the conceptual pieces of a Data communications system? Briefly explain.
  - (e) What do you mean by layered architecture?
  - (f) Explain types of addressing. Give some examples of port address.

- 2 Answer any **four** of the following : **5×4=20**
- (a) Explain Datagram switching.
  - (b) Explain the CRC error detection technique using generator polynomial  $X^4+X^3+1$  and data is 111100011.
  - (c) Explain the concept of sliding window technique for error control.
  - (d) What do you understand by switch fabric? Define Banyan switch fabric.
  - (e) Define and explain the various frame type in HDLC.
  - (f) What do you mean by framing? Explain bit oriented framing and character oriented framing.
- 3 Answer any **two** of the following : **10×2=20**
- (a) Explain controlled access method.
  - (b) Write short note on ethernet.
  - (c) Define MAC layer of data link layer. Discuss CSMA and CSMA/CA random access method.
- 4 Answer any **two** parts of the following : **10×2=20**
- (a) What is the difference between network layer delivery and transport layer delivery? Explain the congestion control techniques.
  - (b) Explain IPv4 and IPv6 addressing.
  - (c) What do you mean by intradomain and interdomain routing techniques? Explain link state routing.
- 5 Answer any **two** parts of the following : **10×2=20**
- (a) Write short note on digital signature and authentication.
  - (b) Write short note on Cryptography.
  - (c) Define connectionless and connection oriented services. Explain header format of TCP protocol.