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Total number of printed pages – 2

B. Tech  
PCCS 4302

**Fifth Semester (Back/Special) Examination – 2013**  
**DATA COMMUNICATION AND COMPUTER NETWORK**

**BRANCH : CSE, IT**

**QUESTION CODE : D259**

**Full Marks – 70**

**Time : 3 Hours**

*Answer Question No. 1 which are compulsory and any **five** from the rest.  
The figures in the right-hand margin indicate marks.*

1. Answer the following questions : 2×10
- List the major design issues at transport layer level.
  - Show the relationship between IP, Port and Socket addresses.
  - For n devices in a network, what is the number of cable links required for a mesh and ring topology ?
  - List the salient features of IEEE 802 for LAN.
  - What is bit stuffing ?
  - Why network standardization is too important in today's world ?
  - Write the difference between connection oriented and connection less network service.
  - What is token ring ?
  - How router is different from switch ?
  - Why are protocols needed ?
2. (a) What is the need for layered architecture ? Explain the features of various protocols used in TCP/IP reference model. 5
- (b) What is meant by simplex, half duplex and full duplex communication system ? Give representative examples of each. 5

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3. (a) What is ARQ ? Explain stop and wait ARQ and Go-back-N ARQ. 5  
(b) Explain time division multiplexing technique and compare with frequency division multiplexing. 5
4. (a) What is piggy backing ? Discuss Working Principle and its advantages. 5  
(b) Compare TCP/IP and OSI reference models. 5
5. (a) How are the guided media differing from unguided transmission media ? 5  
(b) Compare frame relay and ATM networks. 5
6. (a) What is logical addressing ? Give the services and header format of IPV4 and compare with IPv6. 5  
(b) Discuss the CSMA/CD with algorithm. What are the advantages of it over CSMA ? 5
7. (a) What are the drawbacks of SLIP and how to overcome these problems ? Draw the state transition diagram of PPP and explain briefly. 5  
(b) Explain TCP segment format? Differentiate between TCP and UDP. 5
8. Write short notes on any **two** of the following : 5×2  
(a) Domain Name System  
(b) FTP  
(c) Bluetooth virtual circuits  
(d) Gigabit Ethernet.

