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**MCA DEGREE V SEMESTER EXAMINATION NOVEMBER 2015**

**CAS 2501 NETWORKS AND DATA COMMUNICATIONS**

*(Regular and Supplementary)*

Time: 3 Hours

Maximum Marks: 50

**PART A**

(Answer *ALL* questions)

(15 × 2 = 30)

- I. (a) Write a note on data rate and baud rate.  
(b) What is the roll of satellite in data communication?  
(c) Write a note on various types of computer networks.
- II. (a) What are the various data link protocols?  
(b) What is meant by channel allocation problem?  
(c) Describe any one error correction mechanism.
- III. (a) Write the functions of network layer.  
(b) What are the network layer design issues?  
(c) Write a note on internetworking.
- IV. (a) What is meant by option negotiation?  
(b) Write a short note on socket primitives for TCP.  
(c) Compare the upward multiplexing and downward multiplexing.
- V. (a) What is the difference between substitution cipher and transposition cipher?  
(b) Write short note on domain name system.  
(c) Write the two fundamental cryptographic principles.

**PART B**

(5 × 4 = 20)

- VI. What is the need of network standardization? Compare various network standards.  
**OR**
- VII. Explain any two guided transmission media and compare their merits and demerits.
- VIII. Explain the sliding window protocol in detail.  
**OR**
- IX. A channel has a bit rate of 4 Kbps and a propagation delay of 20 msec. For what range of frame sizes does stop-n-wait give an efficiency of at least 50 percent?
- X. Describe the link state routing algorithm in detail.  
**OR**
- XI. (a) Give three examples of protocols parameters that might be negotiated when a connection is setup?  
(b) Convert the IP address whose hexadecimal representation is C22F1582 to dotted decimal notation.
- XII. Give a potential disadvantage when Nagle's algorithm is used on a badly congested network.  
**OR**
- XIII. Write a short note on flow control and buffering.
- XIV. Explain RSA algorithm with an example.  
**OR**
- XV. (a) When web pages are sent out, they are prefixed by MIME headers. Why?  
(b) Write the roll of user agents and message transfer agents in electronic mail.