

**BACHELOR OF COMPUTER APPLICATIONS
(BCA) (Revised)**

Term-End Examination

June, 2016

01826

**BCS-041 : FUNDAMENTALS OF COMPUTER
NETWORKS**

Time : 3 hours

Maximum Marks : 100

Note : Question no. 1 is compulsory. Attempt any three questions from the rest. Use of calculator is allowed.

1. (a) Compare Hub and Switch. Give the advantages and disadvantages of both Hub and Switch. Briefly discuss the functions of layer-2 switch and layer-3 switch. 10
- (b) Write the components of Address field in the Frame Relay Protocol Data Unit (PDU). Also, explain the significance of each component. 10
- (c) Write the step-by-step working of Link State Routing. Also, compare it with Distance Vector Routing. 10

- (d) Discuss the concept of Sliding Window Protocols with the help of an example. Also, explain how piggybacking technique works. 10
2. (a) Explain POP and IMAP. How does POP work ? What are the advantages of IMAP over POP ? 10
- (b) Assume Data frame is 1101011011 and generator polynomial, $G(x)$ is $x^4 + x + 1$. Calculate the transmitted frame using CRC method. 10
3. (a) Compare between CSMA/CD and Ethernet protocol. How does CSMA/CD resolve the problem of line connection ? Explain. 10
- (b) Draw the format of IP Header and explain the significance of each field. 10
4. (a) Discuss circuit switching and packet switching methods. Also, discuss their merits and demerits. 10
- (b) Assume two prime numbers p and q are 3 and 5 respectively. Calculate private key and public key using RSA algorithm. 10

5. Write short notes on the following :

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- (a) ATM Cell
 - (b) GSM Architecture
 - (c) OSI Model
 - (d) Frequency Modulation
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