

(i) Printed Pages: 3

Roll No. ....

(ii) Questions : 9

Sub. Code :

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Exam. Code :

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Bachelor of Computer Applications 6<sup>th</sup> Semester

1048

## COMPUTER NETWORKS

Paper—BCA-603

Time Allowed : Three Hours]

[Maximum Marks : 90

Note :— Attempt *one* question each from Sections A, B, C and D. Section E is compulsory.

### SECTION—A

1. (a) What is the meaning of point-to-point and broadband transmission technologies? Explain various network types on the basis of scale. 9
- (b) Explain the functions of various layers of TCP/IP model. How it is different from OSI reference model? 9
2. (a) What is the meaning of unguided transmission media? What are the benefits of using unguided transmission media over guided media? Explain the working of microwave transmission. 9
- (b) What is switching in computer networks? Explain circuit switching and message switching in detail. 9

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1

[Turn over

**SECTION—B**

3. (a) What are the design issues of Data Link Layer ? 9  
(b) What is an error in Computer Networks ? Explain CRC and Checksum Error Detection techniques with the help of suitable examples. 9
4. (a) What are the various assumptions of dynamic channel allocation ? 4  
(b) What are the Sliding Windows protocols ? Explain One-bit Sliding, Go-Back-N and Selective-Repeat Sliding Windows protocols along with their advantages and disadvantages. 14

**SECTION—C**

5. (a) What are the various design issues of Network Layer ? 6  
(b) Explain Dijkstra's algorithm for shortest path. 6  
(c) What do you understand by Internetworking ? What are the different devices used in internet working ? 6
6. (a) What is congestion ? What are the factors that lead to congestion in a network ? Explain the difference between Leaky Bucket and Token Leaky Bucket algorithms. 9  
(b) What is IP protocol ? Differentiate between IPv4 and IPv6 protocols. 9

**SECTION—D**

7. (a) How can you secure a Computer Network ? What are the various methods of privacy and security in Network Communications ? 8  
(b) Explain Substitution and Transposition Ciphers. Explain with suitable examples. 10
8. Write short notes on the following terms :  
(i) Data compression  
(ii) Electronic mail  
(iii) File transfer. 3×6=18

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2

**SECTION—E**

9. Attempt ALL questions :
- (a) How computer networks are useful in home ?  
(b) Explain Half Duplex transmission. Give two examples of half duplex transmission.  
(c) What is a protocol ?  
(d) Define modulation.  
(e) What is token ring ?  
(f) What is an IP address ?  
(g) What are the light emitting sources used in fiber optics ?  
(h) What are the drawbacks of infrared transmission ?  
(i) What are various techniques of image compression ?

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3

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