(i) Printed Pages : 3 Roll No. .....

(ii) Questions : 9 Sub. Code : 1 7 9 4 7

Exam. Code : 0 0 3 1

Bachelor of Computer Applications 5th Semester

(2124)

COMPUTER NETWORKS

Paper : BCA-16-501

Time Allowed : Three Hours] **[Maximum Marks : 65**

Note :— Attempt **five** questions in all, including Q. No. **9** in Section-E, which is compulsory and taking **one** each from Sections–A, B, C, & D.

SECTION—A

1. What is computer networking ? Discuss the various types of computer networking. Briefly differentiate between ISO-OSI reference model and TCP-IP model. According to you which model is better and why ? 13

2. (a) What do you mean by wireless transmission ? Briefly describe the various media that support wireless transmission.

   (b) Differentiate among packet switching, message switching and circuit switching techniques. Why circuit switching cannot be used for packet transmission ? Discuss. 7,6

SECTION—B

3. What is framing ? How are errors controlled in data link layer ? Explain sliding window protocol with an example. 13

4. Describe static and dynamic channel allocation in LAN's and MAN's. Discuss IEEE standard 802.3 for LANs. 13

SECTION—C

5. (a) What is IP addressing ? How is it classified ? How is subnet addressing performed ?

   (b) In what way is Link State Routing better than Distance Vector Routing ? Explain in detail. 7,6

6. What is network congestion control ? What are its general principles ? Explain the working of Leaky Bucket Algorithm for congestion control with the help of suitable example. How is leaky bucket algorithm different from token bucket algorithm ? 13

SECTION—D

7. Describe how email works. Describe the key components and flows. Identify key standards that apply. Use figures as needed. 13

8. (a) What is Domain Name System (DNS) ? How does DNS perform name resolution ? What are different types of name servers ?

   (b) Distinguish between the http://and https:// protocols. What is the main advantage of persistent connections in HTTP ? 7,6

SECTION—E

(Compulsory Question)

9. (a) What do you mean by ISDN ? Discuss its services and architecture.

(b) A network with bandwidth of 10 Mbps can pass only an average of 12000 frames/ minute with each frame carrying an average of 10000 bits. What is throughput of this network ?

(c) What do you mean by baud rate and bit rate ? Is there any relation between these two ?

(d) What is Encryption ? What is a public and private key ? What are the main strategies to provide the security to a network system ? 3,3,3,4