

(i) Printed Pages: 4]

Roll No.

(ii) Questions : 9]

Sub. Code :

0	9	3	3
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Exam. Code :

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**Bachelor of Computer Applications
6th Semester Examination**

1047

COMPUTER NETWORKS

Paper : BCA-603

Time : 3 Hours]

[Max. Marks : 90

Note :- Attempt *five* questions in all. Select *one* question each from Sections A-D. Section E is compulsory.

Section-A

1. (a) What do you mean by computer networks ?

What are various areas where computer networks are used popularly ? Describe with live examples.

(b) What do you mean by wireless transmission?

How is it carried out? What advantages does it offer over wired transmission? Discuss.

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N-313

(1)

Turn Over

2. (a) What is the significance of layering in OSI reference model ? What important tasks are assigned to each layer in OSI model ? Discuss with the help of a diagram.

(b) What is multiplexing ? What are various multiplexing techniques ? Draw a brief comparison of them.

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Section-B

3. (a) How frame boundaries are marked at data link layer ? What different techniques are used for it ? Explain with small examples.

(b) What is one-bit Sliding Window protocol ? How does it carry out frame transmission ? Describe with examples. Also mention its limitations.

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4. (a) Briefly compare and contrast various IEEE standards used for wired Local Area Network.

(b) What approaches are commonly used for error correction at data link layer ? Illustrate with relevant examples.

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Section-C

5. (a) What is congestion ? When does it occur in networks ? How can it be prevented ? Describe.
- (b) What do you mean by routing tables ? How are they updated in dynamic (adaptive) routing algorithms ? Elaborate with an example. 9,9
6. (a) What do you mean by IP address ? How are they classified ? What is the possible range of IP addresses for different classes ? Describe.
- (b) Differentiate between the following :
- (i) Hub and Switch
- (ii) IPv4 and IPv6
- (iii) Unicast and broadcast routing 9,9

Section-D

7. (a) What is Electronic Mail (email) ? What steps are followed in the delivery process of an email message from a sender to a receiver ? Describe with a suitable diagram.
- (b) What are major security concerns for networks in current era ? How can they be handled ? Discuss. 9,9

8. (a) What is Asymmetric Cryptography ? How does it ensure safe transmission of data ? Elaborate with an example.
- (b) What is data compression ? Why is it required ? Discuss any *two* common techniques used for data compression.

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Section-E

(Compulsory Question)

9. Attempt the following :

- (a) What are the limitations of static channel allocation ?
- (b) Why star topology is considered better than other topologies ?
- (c) How can you calculate data rate for a noisy channel ?
- (d) How lost frames are handled in Go Back n approach of Sliding Window ?
- (e) What is internetworking ?
- (f) What is subnetting ?
- (g) Why network privacy is important ?
- (h) What is the use of Remote Login ?
- (i) List some services of ISDN.

$9 \times 2 = 18$