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## Fifth Semester B.E. Degree Examination, Jan./Feb. 2023

### Computer Networks & Cryptography

Time: 3 hrs.

Max. Marks: 100

*Note: Answer any FIVE full questions, choosing ONE full question from each module.*

#### Module-1

- 1 a. Explain persistent and non-persistent connections of HTTP. (07 Marks)
- b. Explain how cookies are helpful to identify users in websites. (07 Marks)
- c. Explain the concept of webcaching. (06 Marks)

OR

- 2 a. With a neat sketch explain how electronic mail works in the Internet. (10 Marks)
- b. Explain how FTP protocol can transfer files from local file system to remote file system? Explain different types of FTP commands and replies. (10 Marks)

#### Module-2

- 3 a. Define multiplexing and demultiplexing? Explain connectionless multiplexing and demultiplexing and connection oriented multiplexing and demultiplexing. (10 Marks)
- b. Explain the following Reliable Datatransfer protocols:
  - (i) rdt 1.0
  - (ii) rdt 2.0
 (10 Marks)

OR

- 4 a. Explain the following concepts of TCP :
  - (i) TCP connection
  - (ii) TCP segment structure
  - (iii) Reliable Data transfer
 (10 Marks)
- b. Explain the causes and costs of congestion and approaches to congestion control. Explain ATM ABR congestion control. (10 Marks)

#### Module-3

- 5 a. Write a short note on Distance-Vector Routing Algorithm. (10 Marks)
- b. Briefly explain about inter-AS Routing Protocol BGP. (10 Marks)

OR

- 6 a. Explain the concept of Hierarchical Routing. (10 Marks)
- b. Write a short note on Broadcast and Multicast Routing. (10 Marks)

#### Module-4

- 7 a. Write a short note on Cryptanalysis and Brute-Force Attack. (07 Marks)
- b. What is DES? Explain DES encryption. (07 Marks)
- c. Write a short note on strength of DES. (06 Marks)

OR

- 8 a. Briefly explain about public key cryptosystems. (10 Marks)
- b. Explain five ingredients of symmetric encryption scheme? Explain the essential elements of a symmetric encryption scheme. (10 Marks)

**Module-5**

- 9 a. Explain the concept of Man-in-the-Middle Attack. (10 Marks)  
b. Explain the following concepts of symmetric encryption :  
(i) Key distribution Scenario.  
(ii) Controlling key usage. (10 Marks)

**OR**

- 10 a. Briefly explain different techniques for the distribution of public keys. (15 Marks)  
b. Explain the following concepts of symmetric encryption:  
(i) Hierarchical key control.  
(ii) Decentralized key control. (05 Marks)

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