

GUJARAT TECHNOLOGICAL UNIVERSITY
BE SEMESTER-VIII(OLD) • EXAMINATION – WINTER 2017

Subject Code: 181101

Date: 07-11-2017

Subject Name: Data Communication & Networks

Time: 02:30 pm to 05:00 pm

Total Marks: 70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Discussed the significance of switching in communication networks? Briefly, describe the circuit switching, message switching and packet switching with suitable example. **07**
- (b) Explain in detail the OSI reference model with the diagram. Also enlist its various applications. **07**
- Q.2** (a) Why the Sliding Window Protocol is more suitable at Data Link Layer. Justify that “selective repeat achieves minimum channel overhead criteria” than all its different variants. **07**
- (b) Enlist the data link layer design issues. Define framing and describe any two methods used for framing. **07**
- OR**
- (b) Explain in detail the Ethernet technology. **07**
- Q.3** (a) Discuss the issue of channel allocation .Also describe the static and dynamic channel allocation mechanism. **07**
- (b) Verify the statement: “the collision is unavoidable fact in the CSMA/CD protocols during contention period”. What are collision free protocols and explain anyone using neat diagram. **07**
- OR**
- Q.3** (a) Explain in details the DSL technology. **07**
- (b) Enlist the multiple access protocols used for the wireless network and Explain in detail any two of them. **07**
- Q.4** (a) Describe the distance vector routing algorithm in detail. Also, present comparative overview of the static and dynamic routing with examples. **07**
- (b) Explain in detail the working of ARP and RARP with neat diagram at network layer. **07**
- OR**
- Q.4** (a) Describe the IPv4 and IPv6 in detail. **07**
- (b) Write a short note on services provided by the TCP at Transport layer. **07**
- Q.5** (a) Define cryptography? Explain symmetric key algorithms in detail. **07**
- (b) Define domain name system? Explain the process of keeping resource records and domain name server in details. **07**
- OR**
- Q.5** (a) Highlight the significance of VoIP? Compare and contrast the H.323 and SIP protocol for Voice over IP Applications. **07**
- (b) Write a short note on Digital Signature. **07**
