

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-VII(NEW) EXAMINATION – SUMMER 2019****Subject Code:2171008****Date:18/05/2019****Subject Name:Data Communication and Networking****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) Briefly explain uses of computer networks. **03**
 (b) What is data communication? List and explain fundamental characteristics of data communication system. **04**
 (c) Explain OSI reference model in detail. **07**
- Q.2** (a) Briefly explain co-axial cable with diagram. **03**
 (b) What is framing. List and explain types of framing. **04**
 (c) Write short note on digital subscriber line. **07**
- OR**
- (c) Explain Go-Back-N ARQ using neat and clean flow diagrams. **07**
- Q.3** (a) Explain fundamental difference between CSMA/CA and CSMA/CD. **03**
 (b) Comparatively explain vulnerable time and throughputs of pure and slotted ALOHA. **04**
 (c) Write short note on standard Ethernet. **07**
- OR**
- Q.3** (a) What is Gateway? **03**
 (b) Explain addressing mechanism in IEEE 802.11 standard for wireless LAN. **04**
 (c) Explain Bluetooth layers in detail. **07**
- Q.4** (a) Write full forms: ARP, RARP, DHCP, DNS, ISDN and ATM. **03**
 (b) Define: Repeater, Hub, Bridges and Router. **04**
 (c) Explain UDP operation. Also enlist the uses of UDP. **07**
- OR**
- Q.4** (a) Explain TCP connection establishment process with neat figure. **03**
 (b) Briefly explain virtual LAN. **04**
 (c) Explain ICMP error reporting in detail. **07**
- Q.5** (a) Explain duties performed by network layer. **03**
 (b) Explain process of public key distribution. **04**
 (c) Write short note on Voice Over IP. **07**
- OR**
- Q.5** (a) Enlist and explain services provided by network security. **03**
 (b) Comparatively explain symmetric and asymmetric key cryptography. **04**
 (c) Explain in detail: Digital signature. **07**

