

GUJARAT TECHNOLOGICAL UNIVERSITY
BACHELOR OF ENGINEERING – SEMESTER 5 – EXAMINATION – SUMMER 2026

Subject Code: 3153204

Date: 25/05/2026

Subject Name: Advanced Network Protocols

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.**
- 4. Simple and non-programmable scientific calculators are allowed.**

- Q.1**
- (a) Discuss briefly how the recursive DNS works. **03**
 - (b) How email delivery works using SMTP. **04**
 - (c) Explain the concept of Routing. How does the Distance Vector routing work? **07**
- Q.2**
- (a) Differentiate Variable bit rate and Constant bit rate service with an example of each. **03**
 - (b) Discuss Unicast, Multicast, Anycast, and Broadcast addresses. **04**
 - (c) Explain various protocols associated with the layers of the TCP/IP protocol suite with a proper diagram. **07**
- OR
- Q.2**
- (c) Describe the Open Shortest Path First (OSPF) Protocol with a suitable example. **07**
- Q.3**
- (a) Explain Gigabit Ethernet in detail. **03**
 - (b) Write down the steps of moving from IPv4 to IPv6 with a proper example. **04**
 - (c) Discuss the purpose of the ATM adaptation layer. Briefly explain the various ATM adaptation layers. **07**
- OR
- Q.3**
- (a) Briefly discuss the characteristics of FDDI. **03**
 - (b) Differentiate between intra-domain and inter-domain routing. **04**
 - (c) Discuss the ATM Cell header format with a proper diagram. **07**
- Q.4**
- (a) Discuss VOIP in brief. **03**
 - (b) Discuss Simple Network Management Protocol (SNMP) and its application. **04**
 - (c) Discuss features, implementation, and working of the RSVP protocol. **07**
- OR
- Q.4**
- (a) Discuss TCP Congestion policy in brief. **03**
 - (b) Compare IPV4 and IPV6 with their header format. **04**
 - (c) Discuss Neighbour discovery and auto-configuration in IPv6. **07**
- Q.5**
- (a) Discuss 6bone in brief. **03**
 - (b) Compare the RIP protocol with IGRP. **04**
 - (c) Discuss the features and working of the real-time transport protocol. **07**

OR

Q.5	(a) Compare Software-defined Networking with traditional networking.	03
	(b) Explain the working of TCP Tahoe.	04
	(c) Discuss the functionalities of the Structure of Management Information (SMI) and Management Information Base (MIB).	07
