

Roll No.

3551

**B. Tech. 7th Semester (ECE) Professional
Elective-IV Examination – February, 2022**

DATA COMMUNICATION NETWORKING & SECURITY

Paper : PEC-ECE-411-G

Time : Three Hours]

[Maximum Marks : 75

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Q. No. 1 is compulsory and attempt any one question from each unit.

1. Write short notes on the following : 15
- (a) OSI model
 - (b) FDM
 - (c) IP address
 - (d) RSP

UNIT – I

2. (a) Define TCP/IP model in detail. 8
(b) Explain various protocols of data communication. 7

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P. T. O.

3. (a) Describe analog and digital signal in detail. 8
(b) What is transmission impairment ? Explain. 7

UNIT – II

4. (a) Describe various transmission media in detail. 8
(b) Compare circuit switched and packet switched. 7
5. (a) Describe data link layer design issues. 8
(b) Explain error detection and correction codes. 7

UNIT – III

6. (a) Describe multicast routing protocols in detail. 8
(b) Discuss the IPV6 in the network layer. 7
7. (a) Compare UDP and TCP in detail. 8
(b) What is quality of service ? Explain. 7

UNIT – IV

8. (a) Explain Audio and video compression. 8
(b) Describe the concept of electronic mail. 7
9. Explain various network security in detail. 15

B.Tech. (ECE) 7th Semester, Professional Elective-IV
 (G-Scheme) Examination, December-2022
DATA COMMUNICATION NETWORKING & SECURITY
Paper-PEC-ECE-411G

Time allowed : 3 hours]

[Maximum marks : 75

Note: The students have to attempt five questions in total, first being compulsory and sections one from each unit.

1. (a) Give any four difference in digital and Analog signals. 2.5
- (b) What do you mean by multiplexing? What is its advantages and disadvantages. 2.5
- (c) What do you mean by quality of services. 2.5
- (d) Explain integrated services. 2.5
- (e) What is firewall. Explain. 2.5

Unit-I

2. Explain the OSI model in detail, also compare it with TCP/IP model and also discuss their advantages and disadvantages. 15
3. Write short notes on:
 - (i) Digital to Analog conversion 5
 - (ii) Analog to Digital conversion 5
 - (iii) Transmission Impairment 5

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Unit-II

4. (a) Discuss the FDM, WPM and TDM in details. 7½
 (b) Explain the circuit - switched Network 7½
5. Discuss the error deletion and correction code with taking a suitable example. Also discuss the different types of errors. 1.5

Unit-III

6. Write the short notes on:
- (i) IP Address Classes 5
 (ii) ICMP 5
 (iii) Multicast routing 5
7. Discuss the following:
- (i) User datagram protocol 7½
 (ii) Various Techniques to improve QOS 7½

Unit-IV

8. Explain the following:
- (i) Electronics mail, File Transfer. 7½
 (ii) Digitizing audio and video 7½
9. Discuss the following in details:
- (i) Cryptography 5
 (ii) Digital Signatures 5
 (iii) DES and AES 5