NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI-15

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

V SEMESTER B.TECH, CYCLE TEST 1

CSPC53 COMPUTER NETWORKS

DATE: 07/09/2021   **Answer All Questions**   **MAX. MARKS: 15**

Instructions:

1. Answer ALL questions
2. Write your roll number, your name, page number on each page.
3. Create a PDF file for your answer book and name it as yourrollno_CT1 (eg. 111222333_CT1.pdf)
4. Use the Google form for the submission of your answer sheets.
   https://forms.gle/58DKAyKrNnjZwS4u8
5. Submissions after 11.15am will not be considered **(whatever the reason)**.
6. Only one submission is allowed.

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1.   The TCP source and destination devices are connected with five intermediate devices. How many times the TCP checksum and IP checksum are calculated? Justify your answer.   (2)

2.   In monoalphabetic substitution technique (which we discussed in the class), what is the range of key (k)? Justify your answer.   (2)

3.   Use your name to construct a plaintext of 26 characters. Repeat your name to match the required length without full stop and space. The key is 5 3 2 6 4 1. Do the encryption and decryption with transposition technique.   (3)

4.   Consider the following activities related to E-Mail.   (2)

A1: S1 sends an email using Gmail to D1.

A2: This email is transferred to mail server of D1(both mail server and D1 are in the same network)

A3: D1 has created a new folder to store the mails from S1. It downloads the mail and put it into the newly created folder.

Draw the architecture diagram and mention the name of the application layer protocol used in each of these activities? (No need to Explain, Only diagram with protocol names)

5. Develop and answer a question

      a. Related with UDP topics that we have discussed in the class. (2+1)

      b. Related with TCP topics that we have discussed in the class. (2+1)

For this, the following instructions must be considered

❖ It should not be copied/reframed from your classmates and should not be available in any of the resources such as Net, any materials and Text books.

❖ The question with the keywords such as *Explain, What, Which, Mention, Discuss, Define, Illustrate, List out, Write short/long notes on, Program, and similar to these*, will not be considered.

❖ The problematic questions should not be reproduced just by changing the values.

❖ Moderate level of complexity (only 50% of the students can be able to answer) should be considered.