

Assignment 01

[50 Marks]

This is the first assignment for the coursework of Computer Networks. Kindly attempt each question on your own. Refrain from cheating, You may consult the TA regarding the assignment.

Prepare a PDF document in the format “BSEF22M0**_CN_Assignment_01” and submit as requested within the deadline. The assignment should include a cover page with your name, roll number, and course title. Use appropriate headings and subheadings for each question.

Question 01:

[20]

Explain the differences between UDP and TCP. You shouldn't ordinarily type the differences but illustrate all differences in their working starting from their segment structures and then getting deep into their working. You may take help of some assumed scenario to explain your difference. All on your creativity.

Question 02:

[20]

Look at this HTTP request message

```
POST /submit-data HTTP/1.1
Host: example.com
Date: Thu, 07 Dec 2024 15:30:45 GMT
User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/91.0.4472.124 Safari/537.36
Authorization: Bearer a1b2c3d4e5f67890
Content-Type: application/json
Accept: application/json
Content-Length: 521
X-Request-ID: abc123xyz456
X-Client-Version: 2.0
Cache-Control: no-cache
Connection: keep-alive

{
  "username": "something",
  "password": "something",
  "email": "something@omething.com",
  "preferences": {
    "notifications": true,
    "theme": "dark"
  },
  "devices": [
    {
      "device_id": "12345",
      "device_name": "something",
      "device_type": "something"
    },
    {
      "device_id": "67890",
      "device_name": "something",
      "device_type": "something"
    }
  ]
}
```

You have to do two tasks.

- 1) Explain the general format of HTTP request message.
 - 2) Explain explicitly the above-mentioned HTTP request message.
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Question 03:

[10]

Q: how did transport layer know to deliver message to Firefox browser process rather than Netflix process or Skype process?

This question is somewhere in your slides. Find it, study it, understand it and then thoroughly write your answer.