

CN lab Midsem Set 1:Solutions

PART-1

1. Application layer: HTTP, DNS

2.

a. $118792+178999+77793+24772+3714=404070$ bytes

b. 5

44	1.290698009	10.250.61.113	10.250.200.15	HTTP	409	GET / HTTP/1.1
185	1.340497160	10.250.61.113	10.250.200.15	HTTP	359	GET /css/bootstrap.css
						HTTP/1.1
302	1.341854762	10.250.61.113	10.250.200.15	HTTP	355	GET /css/iitdc.css HTTP/1.1
309	1.341888916	10.250.61.113	10.250.200.15	HTTP	355	GET /css/uikit.css HTTP/1.1
357	1.342173749	10.250.61.113	10.250.200.15	HTTP	358	GET /css/lightbox.css HTTP/1.1

3.,,

Sl No.	Source IP	Dest. IP	Type of Query	No. of Answers	Source port	Destination Port
1.	10.250.61.113	10.250.200.3	AAAA	0	55969	53
2.	10.250.200.3	10.250.61.113	AAAA	0	53	55969
3.	10.250.61.113	10.250.200.3	A	0	39827	53
4.	10.250.200.3	10.250.61.113	A	3	53	39827

4.

a. 80,119111 bytes

b.

- i. Source port : 51844
- ii. Destination port: 80
- iii. segment length: 343
- iv. Sequence number: 1
- v. Next sequence number: 344
- vi. Acknowledgment number: 1
- vii. Header length: 32

c. RTT: 0.000005524

Mathematical Calculation= $1.292996708 - 1.292991184 = 0.000005524$

5.

a. 20 bytes(Length) - 8 bytes(header length)= 12 bytes

b. $2^{16} - 1 = 65535$

- c. UDP- 17(0x0011)
- d. The length (in bytes) of each of the UDP header fields:
 Source and destination port: 2 Bytes each
 Length: 2 bytes
 Check sum: 2 bytes

3) DNS Requests ->

Source IP	Destination IP	Type of Query	No. of Answers	Source Port	Destination Port
10.250.61.113	10.250.200.3	Standard Query AAAA	0	55969	53
10.250.61.113	10.250.200.3	Standard Query A	0	39287	53
10.250.61.113	10.250.200.3	Standard Query AAAA	0	37844	53
10.250.61.113	10.250.200.3	Standard Query A	0	43821	53
10.250.61.113	10.250.200.3	Standard Query AAAA	0	49263	53

DNS Responses ->

Source IP	Destination IP	Type of Query	No. of Answers	Source Port	Destination Port
10.250.200.3	10.250.61.113	Standard Query AAAA	0	53	55969
10.250.200.3	10.250.61.113	Standard Query A	3	53	39287
10.250.200.3	10.250.61.113	Standard Query AAAA	2	53	37844
10.250.200.3	10.250.61.113	Standard Query A	1	53	43821
10.250.200.3	10.250.61.113	Standard Query AAAA	1	53	49263

Part 2: Solutions

The server program is `set_1_chat_app_server_file.py` and client program is `set_1_chat_app_client_file.py`.