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University of Dhaka  
Department of Computer Science and Engineering  
Mid Term Examination 2020  
Computer Networks

Full Marks: 30

1. IP is considered as a best-effort protocol? Comment on that. (2)
2. How does a local DNS server get the IP addresses of root DNS servers? (2)
3. What can you infer from the following wireshark screenshot: (5)

▼ Domain Name System (response)

Transaction ID: 0x7e28

► Flags: 0x8180 Standard query response, No error

Questions: 1

Answer RRs: 5

Authority RRs: 0

Additional RRs: 0

▼ Queries

▼ cse.du.ac.bd: type MX, class IN

Name: cse.du.ac.bd

[Name Length: 12]

[Label Count: 4]

Type: MX (Mail eXchange) (15)

Class: IN (0x0001)

▼ Answers

- cse.du.ac.bd: type MX, class IN, preference 10, mx ASPMX3.GOOGLEMAIL.COM
- cse.du.ac.bd: type MX, class IN, preference 1, mx ASPMX.L.GOOGLE.COM
- cse.du.ac.bd: type MX, class IN, preference 10, mx ASPMX2.GOOGLEMAIL.COM

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 Answer RRs: 5  
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▼ Queries

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- cse.du.ac.bd: type MX, class IN, preference 10, mx ASPMX2.GOOGLEMAIL.COM
- cse.du.ac.bd: type MX, class IN, preference 5, mx ALT2.ASPMX.L.GOOGLE.COM
- cse.du.ac.bd: type MX, class IN, preference 5, mx ALT1.ASPMX.L.GOOGLE.COM

[Request In: 379]

[Time: 0.170901000 seconds]

0030	00	05	00	00	00	03	63	73	65	02	64	75	02	61	63	.....c se.du.ac	
0040	02	62	64	00	00	0f	00	01	c0	0c	00	0f	00	01	00	00	.bd.....

4. Consider distributing a file of 20 Gbits to 12 peers. The server has an upload rate of 10 Mbps, and each peer has a download rate of 2 Mbps and an upload rate of 1 Mbps. Calculate the minimum distribution time for both client-server and P2P file distribution systems. (5)
5. What is the significance of the *bandwidth-delay product*? (2)
6. You are trying to debug your webserver settings. You used 'telnet' client to make a TCP connection at port 80 of gw.univdhaka.edu. When you typed 'GET / HTTP/1.0' and pressed the 'Enter' key twice, you got the following text:

HTTP/1.1 302 Found  
 Date: Tue, 08 Sep 2015 17:52:01 GMT  
 Server: Apache/2.2.15 (CentOS)  
 Location: https://cloud.cse.univdhaka.edu/cloud  
 Content-Length: 310  
 Connection: close

Content-Type: text/html; charset=iso-8859-1

```
<!DOCTYPE HTML PUBLIC "-//IETF//DTD HTML 2.0//EN">
<html><head>
<title>302 Found</title>
</head><body>
<h1>Found</h1>
<p>The document has moved <a href="https://cloud.cse.univdhaka.edu/cloud">here</a>.</p>
<hr>
<address>Apache/2.2.15 (CentOS) Server at cloud.cse.univdhaka.edu Port 80</address>
</body></html>
Connection closed by foreign host.
```

However, when you tried to view the same web site using a browser, you received a completely different web page. Give a possible reason for that. (4)

7. Suppose that your department has a local DNS server for all computers in the department. You are an ordinary user (i.e. no a network/system admin). Can you determine if an external Web site was likely accessed from a computer in your department a couple of seconds ago? Explain. (3)
8. In BitTorrent, a new peer Alice joins without possessing any chunk. Without any chunks, she cannot become a top-four uploaders for any of the other peers, since she has nothing to upload. How then will Alice get her first chunk? (2)
9. A system admin was trying to debug his FTP server installation. The screen capture of his

8. In BitTorrent, a new peer Alice joins without possessing any chunk. Without any chunks, she cannot become a top-four uploaders for any of the other peers, since she has nothing to upload. How then will Alice get her first chunk? (2)
9. A system admin was trying to debug his FTP server installation. The screen capture of his communication history with FTP server is given below. Comment on the actions he performed with the FTP server. (5)

```
xyz@xyz-700T1C:~$ telnet localhost 21
Trying 127.0.0.1...
Connected to localhost.
Escape character is '^]'.
220 700T1C FTP server ready.
user xyz
331 Password required for xyz.
pass 1234xxxx
230 User xyz logged in.
help
```

214- The following commands are recognized (\* =>'s unimplemented) .

USER	QUIT	STOR	ABOR	SITE	XPWD	MLFL*	EPRT	CONF*
PASS	PORT	STOU	DELE	SYST	XCUP	MAIL*	EPSV	ENC*
ACCT*	PASV	APPE	RMD	STAT	XCWD	MSND*	LPRT	MIC*
CWD	TYPE	ALLO	MKD	HELP	FEAT	MSOM*	LPSV	PBSZ*
CDUP	STRU	REST	PWD	NOOP	OPTS	MSAM*	ADAT*	PROT*
SMNT*	MODE	RNFR	LIST	XMKD	SIZE	MRSQ*	AUTH*	
REIN*	RETR	RNTO	NLST	XRMD	MDTM	MRCP*	CCC*	

214 Direct comments to ftp-bugs@shabbir-700T1C.

LIST  
425 Can't build data connection: Connection refused.