Q1. a) John wants to try a new hacking tool on his Linux system. As the application comes from a site in his untrusted zone, John wants to ensure that the downloaded tool has not been trojaned. What is recommended way to avoid being getting trojaned this way?

b) While querying whois database for thapur.edu, following information was gathered, study the output given below and comment about Name Servers block.

<table>
<thead>
<tr>
<th>Domain Name: THAPAR.EDU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name Servers:</td>
</tr>
<tr>
<td>NS1.EASYDNS.COM</td>
</tr>
<tr>
<td>NS2.EASYDNS.COM</td>
</tr>
</tbody>
</table>

c) Study the output given below and explain what hacker is trying to accomplish

```
C:\>nslookup
> set q=MX
> thapur.edu
Server: ns1.comc.com
Address: 202.164.32.81
```

Non-authoritative answer:

```
thapur.edu MX preference = 5, mail exchanger = mail.thapur.edu
thapur.edu MX preference = 100, mail exchanger = smtp2.easydns.com
```

```
thapur.edu nameserver = ns1.easydns.com
thapur.edu nameserver = ns2.easydns.com
mail.thapur.edu internet address = 202.164.41.18
smtp2.easydns.com internet address = 205.210.42.53
```

```
> 
```
d) Study the following diagrams/snapshots and elaborate on the processes, which are being carried out.

![Diagram of network flow](image1)

![Diagram of packet capture](image2)
Q1. a) John wants to try a new hacking tool on his Linux system. As the application comes from a site in his untrusted zone, John wants to ensure that the downloaded tool has not been trojaned. What is recommended way to avoid being getting trojaned this way?

b) While querying whois database for thapar.edu, following information was gathered, study the output given below and comment about Name Servers block.

```
Domain Name: THAPAR.EDU
Name Servers:
NS1.EASYDNS.COM
NS2.EASYDNS.COM
```

c) Study the output given below and explain what hacker is trying to accomplish

```
C:\>nslookup
> set q=MX
> thapar.edu
Server: nsl.comcomconnect.com
Address: 202.164.32.81

Non-authoritative answer:
thapar.edu MX preference = 5, mail exchanger = mail.thapar.edu
thapar.edu MX preference = 100, mail exchanger = smtp2.easydns.com

thapar.edu nameserver = ns1.easydns.com
thapar.edu nameserver = ns2.easydns.com
mail.thapar.edu internet address = 202.164.41.18
smtp2.easydns.com internet address = 205.210.42.53
```

d) Study the following diagrams/snapshots and elaborate on the processes, which are being carried out.
Q2. a) Find following for: 202.164.41.0/255.255.255.240
   Default Address Class:
   Mask Bits: ____  Host Bits: ____  Number of Subnets: ____  Hosts per Subnet: ____
   Subnet Address: ____  Subnet Mask: ____
   Inverse Mask: ____  Subnet Size: ____
   Host Range: ____
   Broadcast Address: ____

b) Identify each IP address by class, designate network and broadcast addresses by using their classfull default network masks for each:

<table>
<thead>
<tr>
<th>Address</th>
<th>Class</th>
<th>Default Netmask</th>
<th>Network Address</th>
<th>Broadcast Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>202.164.41.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.10.10.10</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

c) Convert the given IP address in dotted decimal notation to its equivalent 10 digit decimal number & given decimal number to its equivalent dotted decimal notation.
   i) 172.31.1.6  ii) 2887713029

d) I am 192.168.4.94/255.255.255.224 – Who is on my network?
   192.168.4.72  192.168.4.97  192.168.4.98  192.168.4.119

e) In each set of four addresses, two of them are on the same network.
   Find the addresses that are part of the same network:
   206.145.48.57/255.255.255.248  206.145.48.61/255.255.255.248
   206.145.48.54/255.255.255.248  206.145.48.65/255.255.255.248
   (4, 2, 2, 1, 1)

Q3. a) Differentiate between
   i) Method Overloading and Method Overriding.
   ii) throw and throws exception clause.
   b) i) Illustrate the concept of Dynamic method dispatch in java.
   ii) How applets differs from application programs. Explain the lifecycle methods of applet in detail with the help of a program.

(4, 4)

Q4. a) Write a program whose task is to retrieve a specified number of bytes from the middle part of the data file Sample1.dat by using the random access, the starting position of the retrieval and the number of bytes to be retrieved are received from the user in the form of two command line arguments. Then the pointer is positioned at the desired position and the requested number of bytes are retrieved and displayed.
   b) i) Differentiate between XML and HTML.
   ii) Differentiate between Website and Webservice.

(4, 4)

Q5. Define the following in detail
   i) UDDI  ii) SOAP  iii) WSDL  iv) Wimport

(8)

Q6. a) Four people are working for an organization. One day they decided to know their average salary. However they want to ensure that no one comes to know about the salary of anyone else. Unfortunately there is no arbitrator, who can take this task. How can this be achieved? Describe a Protocol to accomplish the task.
   b) You don’t want remote sites to receive responses if they ping you. Generally in this case we use DROP instead of REJECT. Why?

(6, 2)