Prepared by – Teran Subasinghe

Model Paper 1 - MCQ - Answers					
1	2	**21**	4	**41**	4
2	1	**22**	4	**42**	4
3	2	**23**	1	**43**	2
4	1	**24**	5	**44**	5
5	3	**25**	1	**45**	2
6	1	**26**	2	**46**	2
7	3	**27**	4	**47**	2
8	5	**28**	1	**48**	4
9	3	**29**	5	**49**	2
10	5	**30**	2	**50**	5
11	5	**31**	2		
12	3	**32**	5		
13	1	**33**	3		
14	2	**34**	2		
15	5	**35**	3		
16	3	**36**	4		
17	3	**37**	2		
18	1	**38**	2		
19	2	**39**	2		
20	1	**40**	1		

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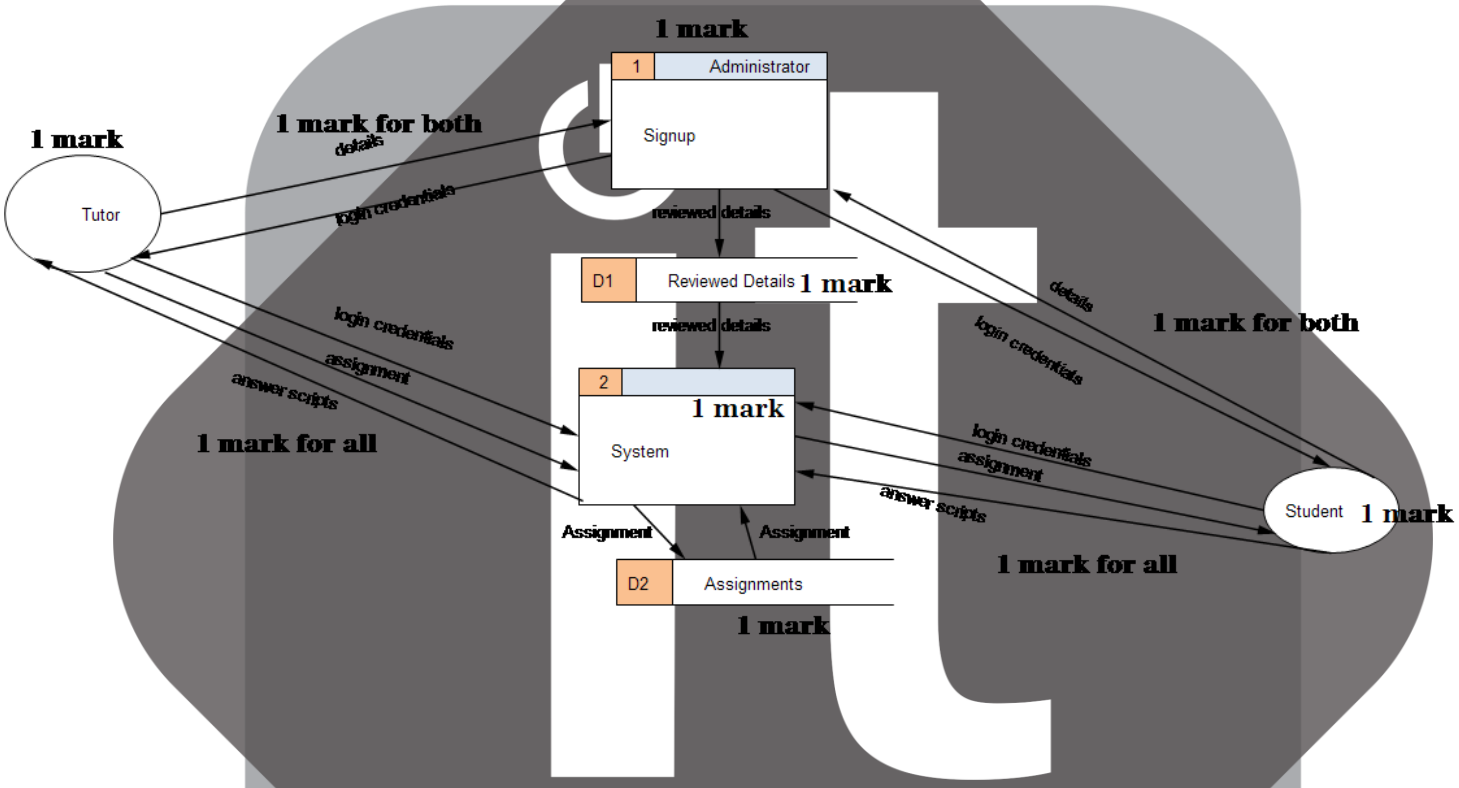
Model Paper 1 – Paper II

Marking Scheme

Note - Please read the instructions carefully when marking. Consider the highlighted points in the answers.

Part – A

1. **(10 Marks)**



2.

(a) Store the current state of the running process in the PCB.
Suspend the Ongoing Process.
Transfer the control to an Interrupt Service Routine. **(3 marks)**

(b) **Multiple programs can be loaded to the memory** at the same time for execution. **(2 marks)**

(c) **The Monitor software sequence the jobs**
Jobs with similar needs were batched together (2 marks in Total)

(d) Power ON Self Test (POST) => BIOS => Bootstrap Loader => OS is loaded and transfer of control. **(4 marks = each step 1 mark)**

3.

(a) CREATE TABLE employee (***1 mark with closing bracket**

ID INT, ***1 mark**
name VARCHAR(100) *NOT NULL*, ***1 mark**
dept_id INT, ***1 mark**
country VARCHAR(100) ***1 mark**

)

***5 Marks in Total [Note :- if FOREIGN KEY statement is given deduct 1 mark]**

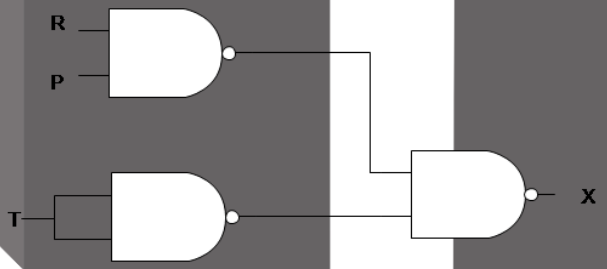
(b) **INSERT INTO Employee** (id,name,dept_id,country) ****1 Mark***
VALUES ****1 Mark***
('E01','John','D1','SL'), ****1 Mark with ,***
('E02','Angi','D2','US'), ****1 Mark with ,***
('E03','Paul','D1','UK') ****1 Mark without ,***

[5 Marks in Total Under following conditions]

***Note if the values are not enclosed with in single or double quotes deduct 1 mark**
***Note if multiple INSERT statements are written only 1 mark is given if the first statement is correct**

4.

(a)



3 Marks in Total (1 Mark for each correct NAND gate)

(b) **Address Bus width = 24 bits**
Address Space = 2^{24} (2 Marks)
Maximum usable size of memory = 2^{20} x 2^4
= 1 MB x 2^4 (2 Marks)
= 16 MB (1 Mark)

(5 marks in Total)

(c)
```
def findHighest(nums):
    highest=nums[0]
    for n in nums:   (1 Mark)
        if(n>highest):   (1 Mark)
            highest=n
    return highest
```
(2 marks in Total)

Part – B

1.

(a) Correct Truth table inputs[2] + outputs[3-0s] **(5 marks)**

A= pressure sensor, B= light sensor, C = motion sensor, X = security alarm

A	B	C	X
0	0	0	0
0	0	1	0
0	1	0	1
0	1	1	1
1	0	0	1
1	0	1	0
1	1	0	1
1	1	1	1

(b) $X = (A + B + C) \cdot (A + B + \cdot \bar{C}) \cdot (\bar{A} + B + \bar{C})$

(without X= NO MARKS) (1 mark)

(c) $X = (A + B + C) \cdot (A + B + \cdot \bar{C}) \cdot (\bar{A} + B + \bar{C})$

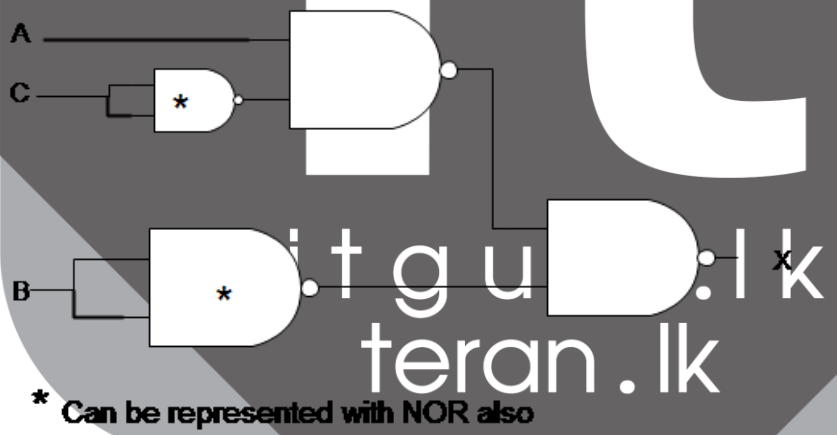
Simplification steps may differ however,
at least 4 rules with steps should be included

$\mathbf{B + A\bar{C}}$

(5 marks in Total)

- **Final Answer 1 mark**
- **4 rules with steps each 1 mark**

(d)



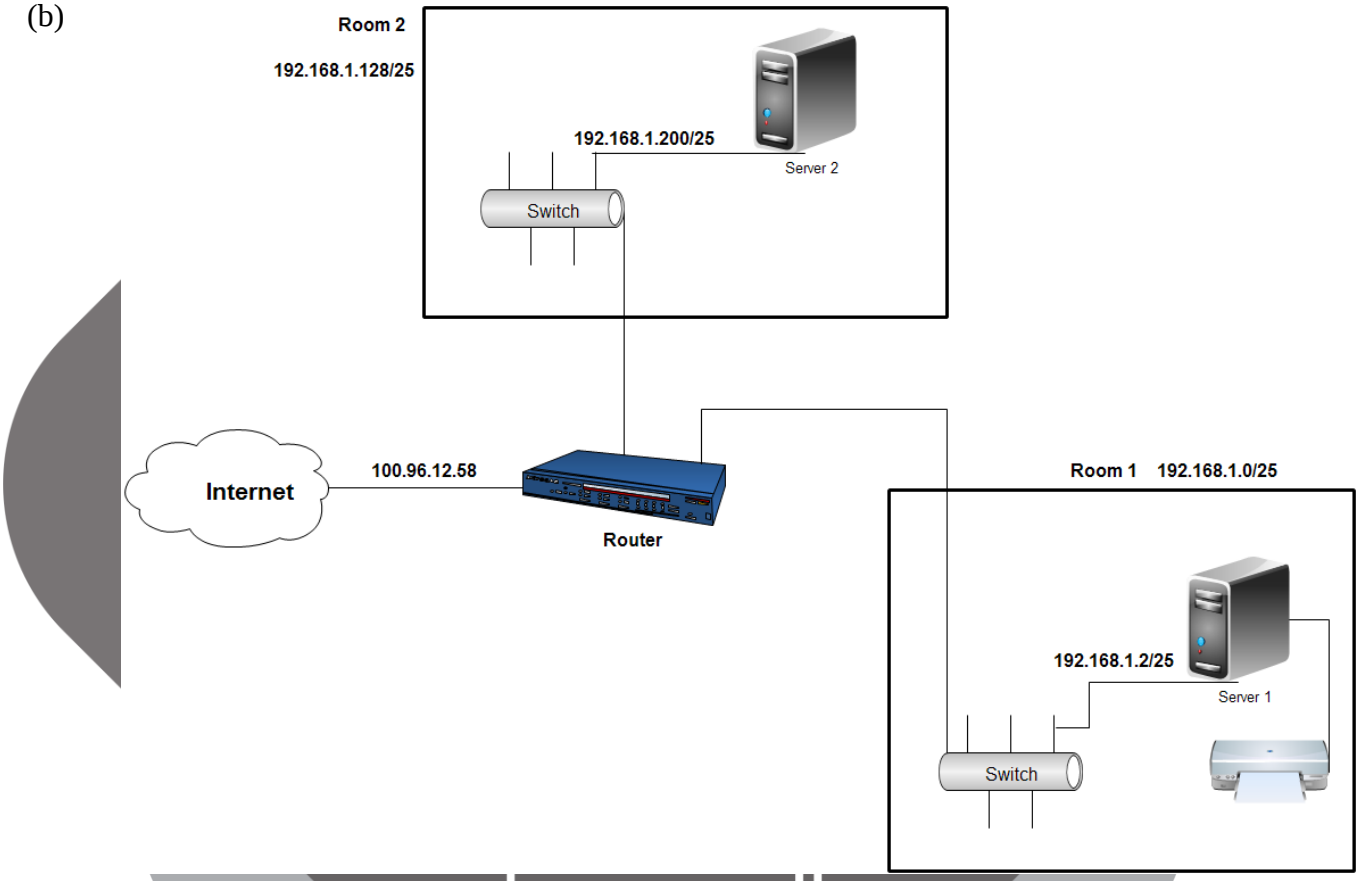
(4 Marks *Note –Each gate 1 Mark)

2.

(a) Class of the IP Address = C
No. of Bits for Host = 8 bits
No. of Bits taken for subnet = 1 bit (1 Mark)
No. of Bits remaining in the host ID = 7 bits (1 Mark)
No. of Hosts per network = 2^7-2
No. of Computers per room at maximum = 126 (2 Marks)

(Total 4 marks)

(b)



Marking Criteria:

(8 marks = 2 marks for networks addresses + 2 Marks for Servers + 2 Marks for Server IP addresses + 2 Marks for Switches)
(2 marks = Router with IP Address)
(1 mark for Printer connected to a server)
(11 marks in Total)

3.

(a)

(i) Waterfall Model **(2 marks)**
(ii) Spiral Model or Evolutionary Model **(2 marks)**
(iii) Rapid Application Development Model or Spiral Model **(2 marks)**

(b) **Yes (1 mark), The younger generation is consuming more time on electronic business methods rather than conventional strategies (or any other justification)**
(3 marks in Total)

(c) **Simple Mail Transfer Protocol (1 Mark) = SMTP is used when an email is delivered from a mail server to a client or to a server (1 mark for description)**
(2 Marks in Total)

(d)

(i) C2G(Citizen to Government) and G2C(Government to Citizen) **(2 Marks in Total)**
(ii) **National Health Authority can inform the Business Organizations** about the Process **(2 Marks in Total)**

4.

```
totalDistance = float(input("Total Distance = "))
totalTripFare = ((totalDistance-1)*30)+100
billFile = open("bill.csv","w")
content = "Your Trip Distance = "+str(totalDistance)+"KMs\nTotal Fare=Rs. "+str(totalTripFare)
billFile.write(content)
billFile.close()
```

1 mark = Total distance input

1 mark = Total distance float conversion

3 mark = Total Trip Fare Calculation

2 mark = Opening the bill.csv file in write or append mode

6 marks = Preparing the content to write to the file [Each line 3 marks]

1 mark= Write content to the file

1 mark= Closing the file

(15 marks)

5.

(a)

StdId	SName	Fid	Fname	BookID	Bname	Author	Brdate
7887	John	f1	I.T.	b01	Networking	Paul	6/5/2014
7887	John	f1	I.T.	b02	Web Eng	Helena	24/6/2014
5467	Angi	f1	I.T.	b01	Networking	Paul	26/5/2014
5467	Angi	f1	I.T.	b02	Web Eng	Helena	14/6/2014
6789	Mauchy	f2	H.R.	b01	Networking	Paul	7/5/2014
6789	Mauchy	f2	H.R.	b03	Management	Paulina	3/6/2014

***2 Marks for student details**
***2 Marks for Faculty details**
***2 Marks for Book details**
(6 Marks in Total)

(b) Repeating attributes = BookID, BName, Author, Brdate **(1 mark for all identified)**

StudentFaculty(StdId, SName, Fid, Fname)

StudentBook(StdId, BookID, Bname, Author, Brdate)

(1 mark for both structures with Foreign Keys shown)
(2 marks in Total)

(c) Partial dependencies = Bname and Author **(1 mark for identification)**

StudentFaculty(StdId, SName, Fid, Fname)

StudentBook (StdId, BookID, Brdate) **(1 Mark with Foreign Keys shown)**

Book (BookID, Bname, Author) **(1 Mark with Foreign Keys shown)**
(3 Marks in Total)

(d) Non-key dependencies = Fname **(1 mark for identification)**

Faculty(Fid, Fname) **(1 Mark)**

Student(StdId, SName, Fid) **(1 Mark with Foreign Key shown)**

StudentBook (StdId, BookID, Brdate)

Book (BookID, Bname, Author) **(1 Mark for StudentBook and Book Structures)**
(4 Marks in Total)

6.

(a) **9 marks in Total**

```
<html>
<head>
    <title></title>
</head>
<body>
    <h1>Personal Info</h1>
    <form action="" method="GET">
        Name <input type="text" name="name"/><br/><br/>
        Contact <input type="telephone" name="contact"/><br/><br/>
        Gender <input type="radio" name="gender" value="m" checked/> Male
               <input type="radio" name="gender" value="f"/> Female<br/><br/>
        Communication <input type="checkbox" name="communication" value="email" checked/> Email
                      <input type="checkbox" name="communication" value="phone"/> Phone <br/><br/>
        Level
        <select name="level">
            <option value="Postgraduate">Postgraduate</option>
            <option value="Undergraduate" selected>Undergraduate</option>
            <option value="AL">A/L</option>
        </select><br/><br/>
        <input type="submit" value="Send"/>
        <input type="reset" value="Clear"/>
    </form>
</body>
</html>
```

1 Mark for each input and option element except submit and reset

(b)

(i) body { background-color:black;} **(1 mark)**

(ii) a {font-family:'Calibri';} **(1 mark)**

(iii) .anyClassName{width:100%;} **(1 mark)**

(c) CSS Box model defines **Margin, Border and Padding** Properties. **(3 Marks)**

END