Mock Examination 2 – Paper 2 – Marking Scheme

Part A

1)

a) two (2) **(1 Mark)**

b) Student(stdNo,name,gender)

StudentProject(stdNo,projNo,status)

Project(projNo,pName)

***5 Marks = 1 Mark for each table with Primary Keys Underlined + 2 Marks for showing the Foreign Keys**

c)

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Teran Subasinghe

***4 Marks = 1 Mark for each Entity with all the attributes and primary keys underlined + 1 Mark for Descriptive Attribute + 1 Mark for Cardinality with Relationship**

2)

a)

i) 2 **(1 Mark)**

ii) To find the lowest number from the numbers inputted. **(2 Marks)**

b)

Total addressable memory space = 2^{32} bytes (**1 Mark)**
Memory Frame size = 2^{14} bytes **(1 Mark)**
Total Number of Frames in Physical Memory = $2^{32}/2^{14}$
= **2^{18} frames (1 mark)**

c)

ALTER TABLE student **(1 Mark)**
DROP COLUMN contact, **(1 Mark)**
ADD COLUMN age INT CHECK (age >10) **(2 Marks – COLUMN Statement is optional)**
****Note – Only One Alter Statement is allowed***

3)

a)

```
<?php
    $conn = new mysqli('localhost',root , usbw , abc_inst)
    if($conn->connect_error){
        die("Connection Failed : ".$conn->connect_error)
    }
    $sql =" INSERT INTO student (name,class) VALUES ('John','12NatA')";

    if($conn->query($sql)==true){
        echo "Record Inserted";
    }else{
        echo "Error". $conn->error;
    }
    $conn->close();
?>
```

5 Marks = 1 Mark for each highlighted filled entries.

b)

To **display the message** and **discontinue** the code and **if an error occurs** when connecting to the database.
(3 Marks)

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TERAN SUBASINGHE

c)

i) HTML **or** CSS **or** Javascript **(1 Mark)**

ii) PHP **or** JSP **or** ASP **(1 Mark)**

4)

a)
A = Ready
B = Running
C = I/O event wait
D = I/O event completed
E = Waiting
F =Interrupt
G =New
H =Terminate
I =Admit
J =Dispatch

(10 marks)

Part B

1)

a) **(Truth table is not required for the answer)**

A	B	C	F
0	0	0	0
0	0	1	1
0	1	0	0
0	1	1	1
1	0	0	0
1	0	1	1
1	1	0	0
1	1	1	0

F = A'B'C + A'BC+AB'C **(1 Mark)**

b) F = A'B'C + A'BC+AB'C

// Steps may differ

= C . (A'+B')

(4 Marks = 2 Marks for Steps with Laws + 2 Marks for the final answer)

c)

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(5 Marks)

d)

(5 Marks)

2)

a) SSL protection **, Protection against DDoS attacks , or any acceptable (2 Marks)**

b) G2C (Government to Citizen) **(1 Mark)**

c) Service Provider **Must be a Government Organization** and All the **Transactions should be carried out online**.
(4 Marks = each feature 2 marks)

d) Saves printing cost (stationary cost) , Marking can be automated which saves both cost and time
(4 marks = each benefit 2 marks)

e) Technical Strategies expected in the answer are:
- Use of Screen Recording or Agent Technology to verify user identity
- Make sure the web site is secured (SSL)

Non-Technical Strategies expected in the answer are:
- Conducting the exams under the supervision of examination authority
- Conduct examinations at a common location

3)
```
nums = [9,6,7,5,1,4,3,2,8] #2 Marks
for passnum in range(len(nums)-1,0,-1): #2 Marks
    for i in range(passnum): #2 Marks
        if nums[i]>nums[i+1]: #3 Marks
            temp = nums[i]  #2 Marks
            nums[i] = nums[i+1] #2 Marks
            nums[i+1] = temp #2 Marks
print(nums)#Optional Doesn't Carry Marks
```

By
TERAN SUBASINGHE

4)

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Teran Subasinghe

The above defines the structure of the ER diagram. In addition to the above, each entity must consist of the following attributes **.**

- Software Engineer Entity - <u>EPF Number</u>, Name, Contact Number, Qualifications (Multivalued)
- Senior Entity – salary
- Junior Entity – fee
- Project Entity – <u>number</u>, name, deadline, requirements(Multivalued), cost, started date
- Project Manger Entity – project management fee

Marking Guideline for 15 Marks

- **6 Marks = 1 Mark for Each Entity with respective attributes**
- **5 Marks = 1 Mark for Each Relationship with Correct Cardinality**
- **4 Marks = 2 Marks for Each IS-A Relationship Identified with Correct Entities Connected**

5) ***Names of Foreign Keys May Differ***

chairsName may appear in either Department or Faculty Tables Linked to either Primary Key

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Marking Guideline for 15 Marks

- **9 Marks =** 1 Mark for Each Table Structure with Attributes
  (The above mark applied even without Foreign Keys except for the TextbookAuthor Table)
- **6 Marks =** 1 Mark for Foreign Keys of Each Table (Except TextbookAuthor)

6) i)

```html
<html>
<head>
    <link href="style.css" rel="stylesheet"/>   #1 Mark
</head>
<body>
   <img src="img/apple.png" id="myapple" alt="No Apple" />  #1 Mark
   <h1 id="slogan">An Apple a Day Keeps the Doctor Away</h1>  #1 Mark

   <table border=1>  #1 Mark
       <caption>Just a Table</caption>  #1 Mark
       <tr>
           <td colspan=4>Life</td> #1 Mark
           <td colspan=3>is</td> #1 Mark
       </tr>
        <tr><td>S</td><td>c</td><td>i</td><td>e</td><td>n</td><td>c</td><td>e</td></tr> #1 Mark
    </table> #1 Mark
<body>
</html>
```

ii)

```css
#myapple{
    width: 100px; #1 Mark under ID myapple
}
#slogan{
   font-family: sans-serif; #1 Mark under ID slogan
   border-radius: 20px;     #1 Mark under ID slogan
   border:5px solid black;  #1 Mark under ID slogan
   padding: 10px;           #1 Mark under ID slogan
   text-align: center;      #1 Mark under ID slogan
}
```

By
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