

Common Techniques of Marking Answer Scripts.

It is compulsory to adhere to the following standard method in marking answer scripts and entering marks into the mark sheets.

1. Use a red color ball point pen for marking. (Only Chief/Additional Chief Examiner may use a mauve color pen.)
2. Note down Examiner's Code Number and initials on the front page of each answer script.
3. Write off any numerals written wrong with a clear single line and authenticate the alterations with Examiner's initials.
4. Write down marks of each subsection in a \triangle and write the final marks of each question as a rational number in a \square with the question number. Use the column assigned for Examiners to write down marks.

Example: Question No. 03

(i)	✓	\triangle $\frac{4}{5}$
		
		
(ii)	✓	\triangle $\frac{3}{5}$
		
		
(iii)	✓	\triangle $\frac{3}{5}$
		
		

$$03 \quad (i) \quad \frac{4}{5} \quad + \quad (ii) \quad \frac{3}{5} \quad + \quad \frac{3}{5} \quad = \quad \frac{10}{15}$$

MCQ answer scripts: (Template)

1. Marking templets for G.C.E.(A/L) and GIT examination will be provided by the Department of Examinations itself. Marking examiners bear the responsibility of using correctly prepared and certified templates.
2. Then, check the answer scripts carefully. If there are more than one or no answers Marked to a certain question write off the options with a line. Sometimes candidates may have erased an option marked previously and selected another option. In such occasions, if the erasure is not clear write off those options too.
3. Place the template on the answer script correctly. Mark the right answers with a 'v' and the wrong answers with a 'X' against the options column. Write down the number of correct answers inside the cage given under each column. Then, add those numbers and write the number of correct answers in the relevant cage.

structured essay type and assay type answer scripts:

1. Cross off any pages left blank by candidates. Underline wrong or unsuitable answers. Show areas where marks can be offered with check marks.
2. Use the right margin of the overland paper to write down the marks.
3. Write down the marks given for each question against the question number in the relevant cage on the front page in two digits. Selection of questions should be in accordance with the instructions given in the question paper. Mark all answers and transfer the marks to the front page, and write off answers with lower marks if extra questions have been answered against instructions.
4. Add the total carefully and write in the relevant cage on the front page. Turn pages of answer script and add all the marks given for all answers again. Check whether that total tallies with the total marks written on the front page.

Preparation of Mark Sheets.

Except for the subjects with a single question paper, final marks of two papers will not be calculated within the evaluation board this time. Therefore, add separate mark sheets for each of the question paper. Write paper 01 marks in the paper 01 column of the mark sheet and write them in words too. Write paper II Marks in the paper II Column and write the relevant details. For the subject 51 Art, marks for Papers 01, 02 and 03 should be entered numerically in the mark sheets.

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Instructions:

1. Acceptable alternatives for a given mark are separated by *slashes (/)*.
2. Important keywords that are essential in an answer are underlined.

Paper I

Qn	Answer
1	4
2	1
3	1
4	5
5	2
6	4
7	4
8	5
9	2
10	2
11	5
12	5
13	3
14	4
15	2
16	1
17	All
18	1
19	3
20	3
21	5
22	5
23	4
24	3
25	3

Qn	Answer
26	3
27	4
28	4
29	3
30	1
31	3
32	4
33	3
34	3
35	1
36	5
37	5
38	S,E: 4 T:1
39	4
40	4
41	3
42	5
43	All
44	5
45	5
46	4
47	3
48	1
49	1
50	4

Paper II (Part A)

1 (a) (i) Social networking has advantages and disadvantages [1]

(ii) Ignore border style. [2]

Schedule

Time	Event
8 am	Drama
10 am	News
Lunch	

Marks allocated as follows:

A: **1 mark** for centered caption, two bold headings and three rows with correct data

B: **1 mark** for the merged last row with *Lunch* left aligned

(b) (i) **Two** points from [2]

- It is easy to keep one standard throughout the page.
- Less code lines to manage (modification in one place can be applied to the whole web site or multiple web pages) / Easy maintenance
- Reduced code complexity / Easy to understand
- Efficiency as it reduces the code lines / Page will load quicker when the main CSS file has been cached

(ii) Exact syntax and spellings essential. [2]
Ignore *spacing* defects and case.

p, h1, h2 {color: red; font-family:Calibri;}

p, h2 {text-align:justify;}

Marks allocated as follows:

A: **1 mark** for row 1

B: **1 mark** for row 2

(c) **One mark** for **each** correct row. [3]
Ignore case of INSERT.

Double or single quotations can be used.

Row 1: 'admin' , 'A!2t*' , 'school_db'

Row 2: INSERT, student, name, class

Row 3: \$sql

2 (a) One mark per each correct row. [6]

No mark for a row if more than one item in that row.

Ignore spelling defects and case.

Phrase no.	Item
(i)	traditional marketplace
(ii)	harmful explosives
(iii)	subscription as a revenue model
(iv)	social commerce
(v)	payment gateway
(vi)	Government to Citizen (G2C) service / G2C service / G2C

(b) (i) 8 [2]

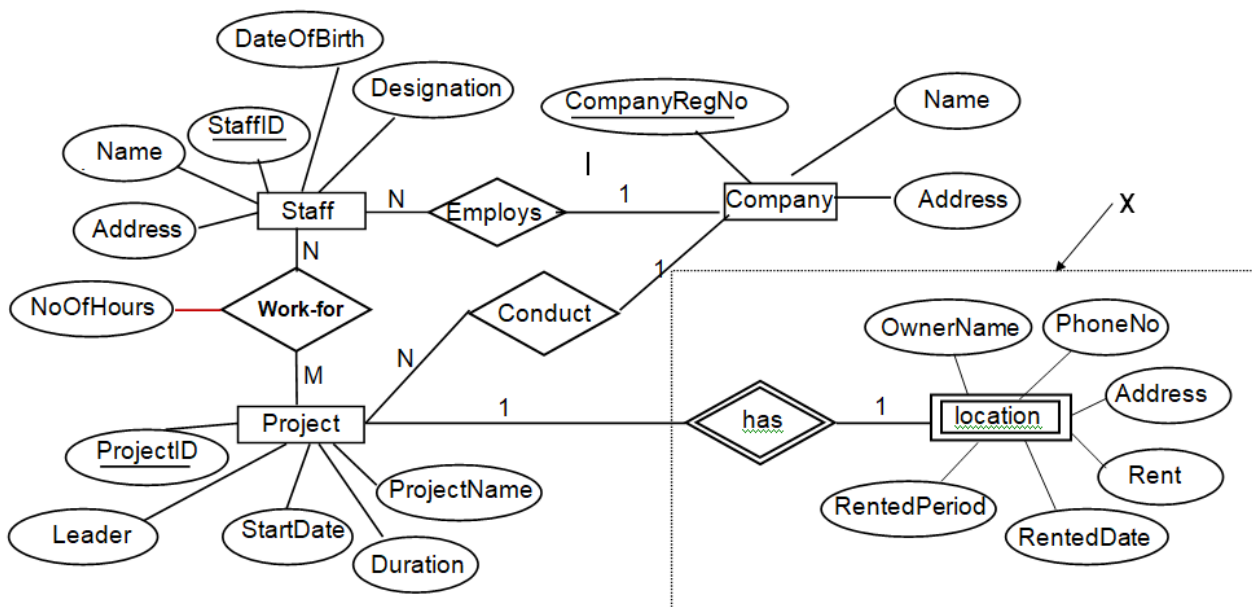
(ii) Any purpose from [2]

- Finding the maximum / largest / highest / greatest in a list of positive numbers
- Find the maximum / largest / highest / greatest from a given input

3 (a) (i) NoOfHours [1]

(Correct symbol, exact spelling, case and proper positioning is **essential**. Ignore spacing defects.)

(ii) [4]



Marks allocated as follows:

- A: 1 mark for Location with correct symbol and label
- B: 1 mark for has relationship with correct symbol and linked to Project entity with proper cardinality
- C: 1 mark for all six Location attributes with correct symbols
- D: 1 mark for completeness (full marks for A,B,C, exact spellings and case with no spaces)

Note: If Company entity is linked to Location entity, do not deduct marks.

(b) One mark per each correct row. [5]

No mark if more than one term in any row.

Ignore spelling defects.

- (i) Domain Name System / DNS
- (ii) Application Layer
- (iii) DHCP
- (iv) CIDR
- (v) Parity Bit

- 4 (a) (i) Address of the next instruction to be executed [1]
- (ii) Ready [1]
- (No mark if more than one state given.)
- (b) (i) Space for a file is allocated as a collection of consecutive / adjacent / contiguous / continuous blocks [1]
- (ii) Any one point from [1]
- Extending the file size is difficult
 - May result in fragmentation / external fragmentation / Defragmentation can take up a lot of time and may need the system to be down
 - The expected final file size must be known at the time of creation
 - Finding space for a new file is difficult
- (iii) Any one point from [2]
- Final sizes of the files to be stored are known
 - On a CDROM, there is no deletion of files thus there is no danger of fragmentation
 - There is no need to extend file sizes
- (iv) Any one point from [1]
- Address of the next block of the file / next block number
 - End-of-File marker
 - Pointer to the next block
- (c) (i) Any one from [1]
- 8200_{10}
 - 010000000001000_2 / 10000000001000_2
- (Students need not write the bases.)
- (ii) The program size could be larger than the size of the physical memory [1]
- (iii) Any one point from [1]
- That page would not have been accessed before
 - That page would have got evicted / removed / expelled from physical memory

Paper II (Part B)

1 (a)

[4]

A	B	C	Z
0	0	0	0
0	0	1	0
0	1	0	0
0	1	1	1
1	0	0	0
1	0	1	1
1	1	0	1
1	1	1	1

Marks allocated as follows:

- Four marks for all 8 rows correct
- Three marks for maximum 6,7 rows correct
- Two marks for maximum 4,5 rows correct
- One mark for maximum 3 rows correct

(b)

[6]

		AB			
		00	01	11	10
C	0	0	0	1	0
	1	0	1	1	1
		$Z = AB + BC + AC$			

Marks allocated as follows:

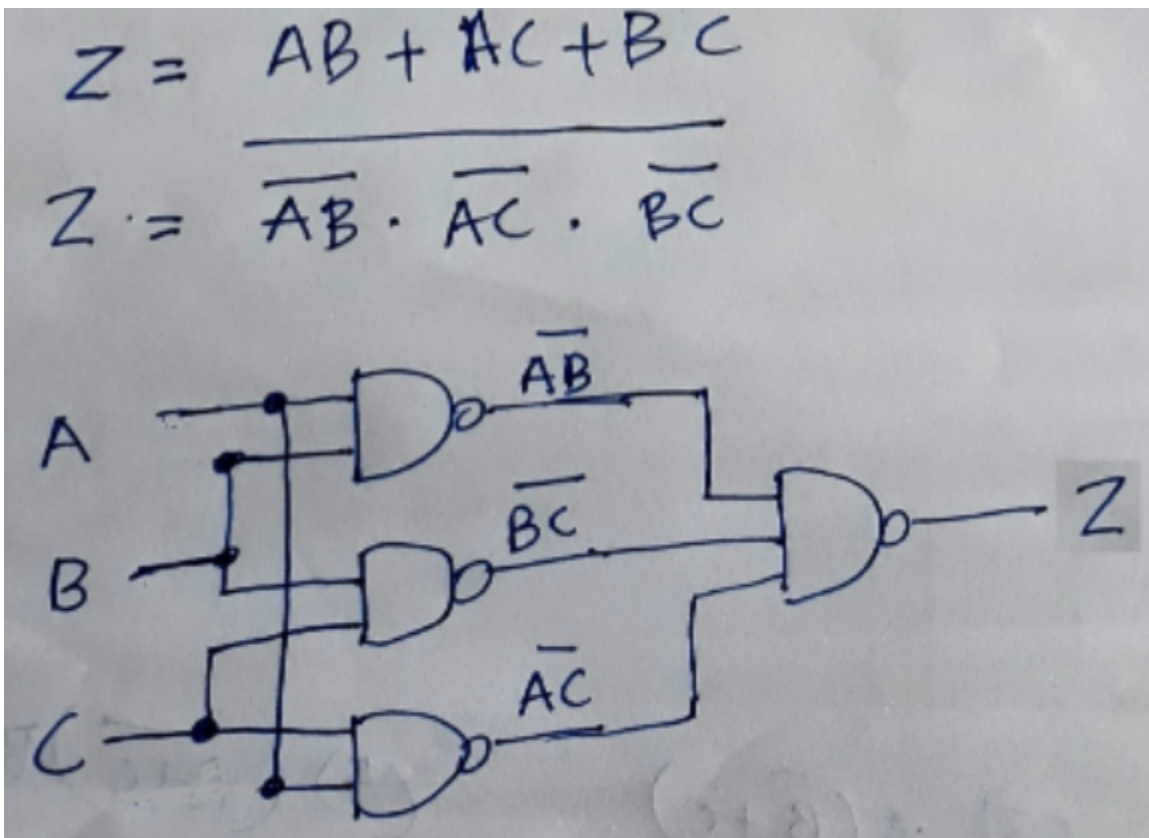
- A: 1 mark for correct map entries
- B: 3 marks for the three correct loops (1 mark X 3)
- C: 2 marks for the final simplified expression

(c)

[5]

Zero marks if any other gate is used or if **all the inputs** are not labelled. Deduct **1 mark** if the output is not labelled.

Equation not essential.



Marks allocated as follows:

5 marks if the diagram is as above (ignore intermediate terms)

Alternative:

For a logically correct but an unoptimized NAND gate arrangement (using many gates) give a total of **2 marks**

2 (a) 2 marks per correct row

[6]

Building order may be different.

Building	Network address	Subnet mask	IP Address range
Admin	192.248.16.0	255.255.255.192	192.248.16.1 - 192.248.16.62 or 192.248.16.0 - 192.248.16.63
Lab	192.248.16.64	255.255.255.192	192.248.16.65 - 192.248.16.126 or 192.248.16.64 - 192.248.16.127
Lib	192.248.16.128	255.255.255.192	192.248.16.129 - 192.248.16.190 or 192.248.16.128 - 192.248.16.191

Alternative answer for **any row**:

Network address	Subnet mask	IP Address range
192.248.16.192	255.255.255.192	192.248.16.193 - 192.248.16.254 or 192.248.16.192 - 192.248.16.255

Alternative answer 1:

Building	Network address	Subnet mask	IP Address range
Admin	192.248.16.0	255.255.255.128	192.248.16.1 - 192.248.16.126 or 192.248.16.0 - 192.248.16.127
Lab	192.248.16.128	255.255.255.192	192.248.16.129 - 192.248.16.190 or 192.248.16.128 - 192.248.16.191
Lib	192.248.16.192	255.255.255.192	192.248.16.193 - 192.248.16.254 or 192.248.16.192 - 192.248.16.255

Alternative answer 2:

Building	Network address	Subnet mask	IP Address range
Admin	192.248.16.0	255.255.255.192	192.248.16.1 - 192.248.16.62 or 192.248.16.0 - 192.248.16.63
Lab	192.248.16.64	255.255.255.192	192.248.16.65 - 192.248.16.126 or 192.248.16.64 - 192.248.16.127
Lib	192.248.16.128	255.255.255.128	192.248.16.129 - 192.248.16.254 or 192.248.16.128 - 192.248.16.255

(From the two ranges given for each *IP Address Range*, only the first one gives the range of *usable* IP addresses.)

Note:

If only **two columns** correct in a row, give **one mark** for that row.

(E.g., if only 2 columns are correct in each of the three rows, then give a total of **three marks** [1 mark X 3] for this part.)

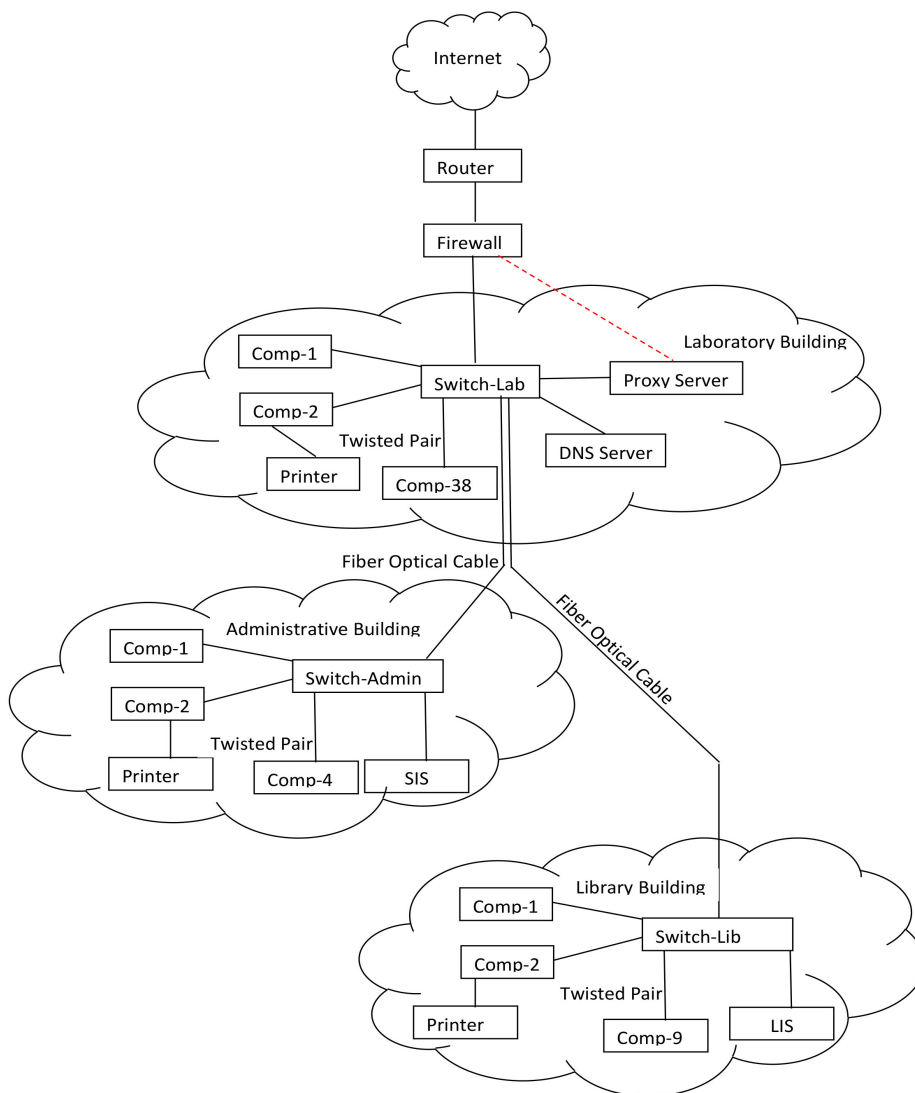
(b) Any one point from

[1]

- Costly / difficult to install / impractical due to buildings being geographically separated
- Difficult to configure
- There is no such connectivity requirement for the school

(c)

[7]



Marks allocated as follows:

- A: **1 mark** for Internet – Router – Firewall link
 - B: **1 mark** for getting the Internet connection to the Lab switch
 - C: **1 mark** for interconnecting the Admin and Lib switches to the Lab switch
 - D: **1 mark** for properly locating Proxy and the DNS servers
 - E: **1 mark** for properly connecting SIS to Admin switch **and** LIS to Lib switch
 - F: **1 mark** for properly identifying the number of nodes in each building
 - G: **1 mark** for properly connecting the printer[†] **and** for not using unnecessary devices
- † As the printer type is not indicated, connecting each printer directly to the relevant switch is also acceptable

(d) Any one point from [1]

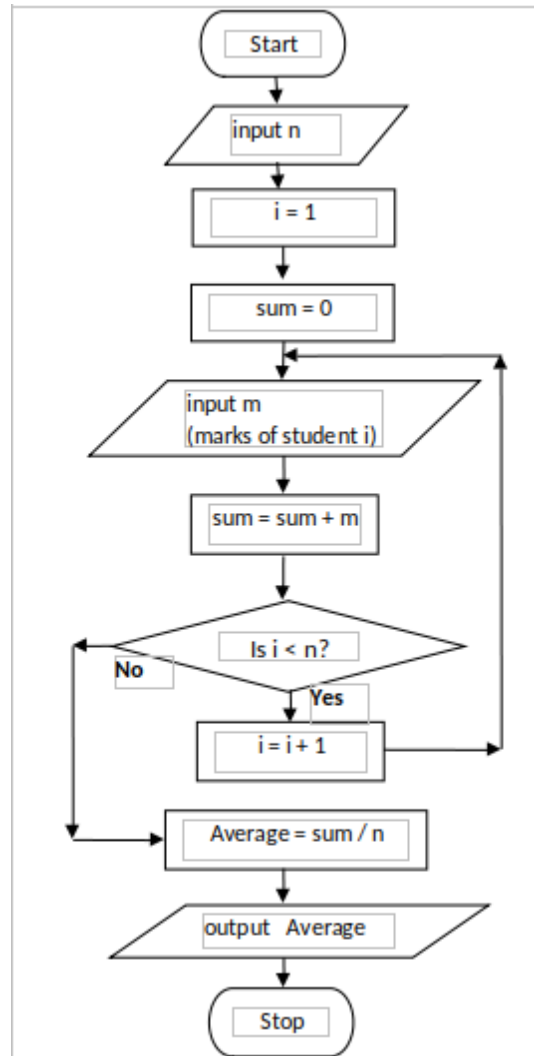
- The applications that the school will be using will benefit from the many desirable features of TCP such as reliability, in-order delivery, connection oriented nature, flow-control, congestion control, error recovery and re-transmission of packets when necessary
- The transmission time required for the school applications is not very critical
- TCP is used for the *web* and *email* applications

- 3 (a) (i) Online sales [1]
- (ii) Any one from [1]
- Customers being reluctant to buy second hand books online as they do not have the ability to inspect their quality
 - Having to compete against online sellers of new books / e-books
- (iii) 1 mark for each [3]
- A: B2C – Between ABC Books and its customers / Between a business and its customers
- B: B2B – Between ABC Books and other businesses / Between two other businesses
- C: C2C – Between individual customers of the marketplace
- (iv) Any one from [1]
- Advertising support / revenue
 - Subscription fees
 - Transaction fees / commissions
- (v) Any one from [1]
- through credit/debit cards / payment gateways / electronic payment cards
 - through e-banking / Internet banking
 - transactions using mobile phones
 - through third party payment facility providers
- (vi) Any one from [1]
- Analyzing high demand books
 - Analyzing the purchase trends
 - Analyzing customer preferences

- (b) (i) Agent 2 [1]
- (ignore spelling defects and case)
- (ii) [2]
- Sense – A
Compute – C
Control - B
- Marks allocated as follows:*
- Two marks** for all **three** correct
One mark for **one or two** correct
- (iii) **1 mark** for each [2]
- C – Database read and write operations
R – Camera input feed and Camera control commands
- (iv) P: informing Agent 2 to operate [1]
- (v) [1]
- CCTV raw data input need to be processed before storage in the DB.
Processing allows data reduction, annotations and other value added functions.

4 (a)

[8]



Marks allocated as follows:

- A - **1 mark** for the *input of n*
- B - **1 mark** for both initializations
- C - **1 mark** for the *loop check*
- D - **1 mark** for the *input of a mark* (if properly inside loop)
- E - **1 mark** for the *summation computation* and *computing next loop index* (if properly inside loop)
- F - **1 mark** for the *correct average computation*
- G - **1 mark** for *printing the correct average*
- H - **1 mark** for correct symbols and arrows

(b) (i) 3 [1]

(ii) Any one from [1]

- Count the number of even numbers in a list
- Print the number of even numbers in a list

(iii) [5]

```
n= int(input())
a = 0
while (n > 0):
    x = int(input())
    if (x % 2 == 0):
        a = a + 1
    n = n - 1
print (a)
```

An alternative code:

```
n = int(input())
a = 0
while True:
    if n <= 0:
        break
    x = int(input())
    if x%2 == 0:
        a = a + 1
    n = n - 1
print (a)
```

Note: Any other correct Python program that correctly implements the algorithm is also acceptable (E.g., Through the use of a *for* loop)

Marks allocated as follows:

A: **1 mark** for correctly placed `n= int(input())`

B: **1 mark** for correctly placed `while (n > 0):`

`n = n - 1`

C: **1 mark** for the following if correctly placed inside loop

`x= int(input())`

D: **1 mark** for the correctly placed `a = 0`

and for the following if correctly placed inside loop

```
if (x % 2 == 0):
    a = a + 1
```

and for the correctly placed

`print (a)`

E: **1 mark** for correct *indentation*

5 (a)

[2]

Relation I:

Normal form	Justification
2	As all non-key attributes are fully functionally dependent on the primary key / There are transitive dependencies

Relation II and Relation III: **Any one** or **both** from

•

Normal form	Justification
2	As all non-key attributes are fully functionally dependent on the primary key / There are transitive dependencies

•

Normal form	Justification
3	No transitive dependencies

Marks allocated as follows:

Two marks for all **three** relations correct
One mark for **one or two** relations correct

(b)

[5]

Relation I: P: 3 / 3 NF
 S: Customer (Customer_NIC, Customer_Name, City)
 Customer_City (City, Postal_Code)

Relation II: **Any one** from

- Q: 3 / 3 NF
 T: Vehicle_Owner (Owner_Id, Owner_Name, Contact_No)
- Q: It cannot be normalized further from 3 NF
 T: - / Vehicle_Owner (Owner_Id, Owner_Name, Contact_No)

Relation III: **Any one** from

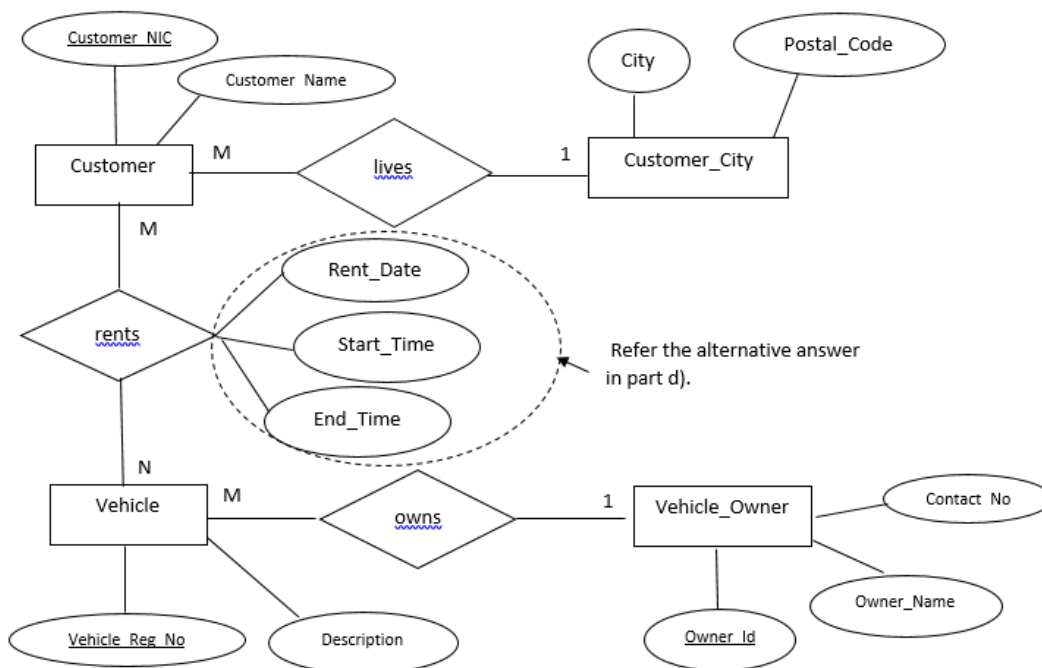
- R: 3 / 3 NF
 U: Vehicle(Vehicle_Reg_No, Description, Owner_Id)
- R: It cannot be normalized further from 3 NF
 U: - / Vehicle(Vehicle_Reg_No, Description, Owner_Id)

Marks allocated as follows:

P - **1 mark**
 S – **2 marks** (one mark per relation with primary keys marked)
 Q and T - **1 mark**
 R and U - **1 mark**

(c)

[5]



Marks allocated as follows:

- A: **1 mark** per relationship (*rents*, *owns*) with correct cardinality (Total **2 marks**)
- B: **1 mark** for Customer, Vehicle and Vehicle_Owner entities with all attributes
- C: **1 mark** for correctly denoting all three keys
- D: **1 mark** for completeness (spellings, case, spacing)

(d)

[1]

Rent(Customer_NIC, Vehicle_Reg_No, Rent_Date, Start_Time, End_Time)

Alternative answers:

1. This relationship may also be incorporated to the ER diagram in (c) **with** the keys correctly marked.

2. CREATE TABLE Rent

(Customer_NIC varchar(10),

Vehicle_Reg_No varchar (8), Rent_Date date, Start_Time time, End_Time time,

PRIMARY KEY (Customer_NIC, Vehicle_Reg_No);

Note: The primary key can also be introduced as a constraint.

(e)

Any one answer from

[2]

- SELECT Owner_Id, Vehicle_Reg_No FROM Vehicle GROUP BY Owner_Id;
- SELECT Owner_Id, Vehicle_Reg_No FROM Vehicle;

Marks allocated as follows:

A: **1 mark** for correct query (ignore case of SELECT)

B: **1 mark** for completeness (correct syntax, correct names, semicolon use)

6 (a) (i) One mark per each. [5]

- P - Test request slip / Request slip
 Q - Invoice
 R - Receipt
 S - Updated receipt
 T - Report

(ii) One mark per each. [2]

- (A) W - Payments
 (B) X - Approved invoice + payment

(b) (i) Any one point from [1]

- Analysing / finding the requirements of an information system before its development
- Finding the functional and non-functional requirements of a system
- Analysing the requirements of a proposed system
- Studying and analyzing the user needs to define the problem domain and system requirements
- Determining user expectations for a new or modified product

(ii) Any two advantages from [2]

- Allows to discover the system scope/boundary and the nature of system interaction within its environment
- Allows to detect and resolve conflicts between the requirements
- Allows to prioritize requirements relatively to each other
- Helps in deciding the critical success factors
- Reduces project / implementation risks
- Helps in distinguishing *functional* and *non-functional* requirements

(iii) Any one point from [1]

- Through testing based on functional requirements (**Except** system/integration testing)
- Through validation / verification

(iv) One mark per each correct requirement (Max. two marks per set). [4]

Functional requirements: A, B
 Non-functional requirements: **Any two** from D, F, G

(Deduct 1 mark for any incorrect **extra** label. Note: Minimum 0 marks)