# G.C.E. (A/L) ICT

## 2017 Batch

# June Examination
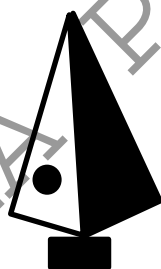
# Field Work Center (FWC)

# Marking Scheme
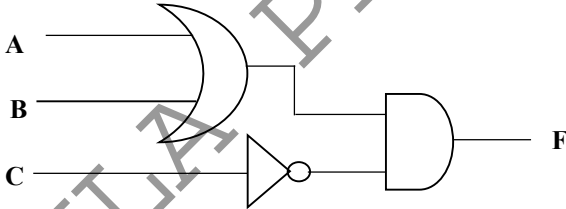
## Part – I

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

## Part – II A    Structured Essay – All questions

| Question No. | | Marks |
|---|---|---|
| (1) (a) | Shared memory , Message passing | 2 marks [1+1] |
| (1) (b)(i) | Size of address space = 16 bits<br>No. of address spaces / addresses = $2^{16}$<br>Max. usable virtual memory size = $2^{16}$ bytes = 64 KB | 4 marks – steps needed |
| (1) (b)(ii) | 0 → $2^{16}$ -1 | 2 marks  or 0 |
| (1)(b)(iii) | 0101111001 | 2 marks  or 0 |
| (2) (a) | `<table border="1">`<br>` <tr>`<br>`  <th>Name:</th>`<br>`  <td>Bill Gates</td>`<br>` </tr>`<br>` <tr>`<br>`  <th rowspan="2">Telephone:</th>`<br>`  <td>555 77 854</td>`<br>` </tr>`<br>` <tr>`<br>`  <td>555 77 855</td>`<br>` </tr>`<br>`</table>` | 3 marks [6 x 0.5] |

| | | |
|---|---|---|
| **(2) (b)** | External CSS **saves a lot of work**. / It can **control the layout of multiple web pages all at once**. | 2 marks or 0 |
| **(2) (c)** | **(i)** element selector<br>**(ii)** id selector<br>**(iii)** element selector<br>**(iv)** class selector<br>**(v)** group selector | 1 x 5 = 5 marks |

| | | |
|---|---|---|
| **(3) (a)** | $16_{10} = 00010000_2$<br>$-12_{10} = 11110100_2$   $+$<br><u>     $00000100_2$  </u> | 3 marks [1, 1, 1] |
| **(3) (b)** | • Entity integrity constraints<br>• Domain integrity constraints<br>• Referential integrity constraints | 3 marks [1 x 3] |
| **(3)(c)** | **(i)** "Expoline" sells electronic goods to customers via the Internet. This is a B2C service model of e-commerce.<br>**(ii)** No direct experience / testing about electronic goods.<br>    Sometimes no guaranteed of delivery of exact goods. | 4 marks [2 + 2] |

| | | |
|---|---|---|
| **(4) (a)** | • Syntax / compile-time error<br>• Run-time error<br>• Logical / semantic error | 3 marks |
| **(4) (b)** | i=1<br>while i<=10:<br>  print(i,end=' ')<br>  i=i+2<br>**: expected / no need ; / right indent needed for i = i +2** | 4 marks<br><br>Partial marks given |
| **(4) (c)** | i=2<br>s=0<br>while i<=10:<br>  s=s+i<br>  i=i+2<br>print(s,end=' ') | 3 marks<br><br>Partial marks given |

| Question No. | Suggested Answers | Marks |
|---|---|---|
| (1)(a) | <br> | <thead>| A | B | C | F |</thead> ... | 4 marks [4 columns – 4 marks, Inputs in order] |

| A | B | C | F |
|---|---|---|---|
| 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 0 |
| 0 | 1 | 0 | 1 |
| 0 | 1 | 1 | 0 |
| 1 | 0 | 0 | 1 |
| 1 | 0 | 1 | 0 |
| 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 0 |

F - Output

**(1)(b)** — 3 marks

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

**(1)(c)** — 4 marks, Partial marks given

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

$\bar{A}B\bar{C} + A\bar{C}(\bar{B} + B)$ , Distributive Law

$\bar{A}B\bar{C} + A\bar{C}.1$ , Identity Law

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

$\bar{C}(A + \bar{A}B)$ , $A + \bar{A}B = A + B$

$\bar{C}(A + B)$

**(1)(d)** — 4 marks



**(2) (a)** — 6 marks [3 x 2]

- Internet banking system shall be able to allow customers to pay electricity /water/ telecommunication bills
- Internet banking system shall be able to allow customers to know account balance
- Internet banking system shall be able to allow customers to do money transactions

**(2) (b)** — 4 marks [2 x 2]

B2C service.

Bank is a business that provides the internet banking services for its customers.

**(2) (c)** — 3 marks

- Money security
- Data privacy
- Reliability

| | | | |
|---|---|---|---|
| **(2) (d)** | Data mining agents could be used to find trends and patterns of customers' saving in an abundance of information from many different sources. Monitoring / surveillance /predictive agents could be used to monitor customers' saving status and habits. [Or any appropriate answers] | | 2 marks |
| **(3) (a)** | Application layer<br>Presentation layer<br>Session layer<br>Transport layer<br>Network layer<br>Data link layer<br>Physical layer | | 4 marks 0r 0<br><br>Full answer expected |
| **(3) (b)** | **TCP**<br><br>A file to be transmitted in its _**entirety without any errors**_, therefore the error _**detection and correction properties**_ of TCP are needed.<br><br>**UDP**<br><br>When watching a movie, _**delay is critical**_ and therefore there isn't any time to seek the retransmission of any errors.<br><br>**TCP**<br><br>Web pages need to be delivered _**without error**_ so that all content is properly formatted and presented. Therefore the _**error detection and correction properties**_ of TCP are needed. | | 6 marks [2 x 3] |
| **(3) (c)** | There is a problem with DNS. | | 3 marks or 0 |
| **(3) (d)** | 192.133.219.1 | | 2 marks or 0 |
| **(4) (a)** | **1GL**<br>Machine code is used to write programs<br>No program translator is needed to execute programs<br>**2GL**<br>Assembly code is used to write programs<br>Program translator (Assembler) is needed to execute programs | | 4 marks [4 x 1] |

**(4) (b)**



Start

Open file object marks.txt

Open file object result.txt

Write in file result.txt as 'Total-Average-Remarks'

Write in file result.txt as '---------------'

Read marks.txt until EOF? — No → Stop

Yes

Read name, marks

Calculate total marks

Calculate average marks

Average >75? — Yes → Write "Excellent"

No

Write "To be improved"
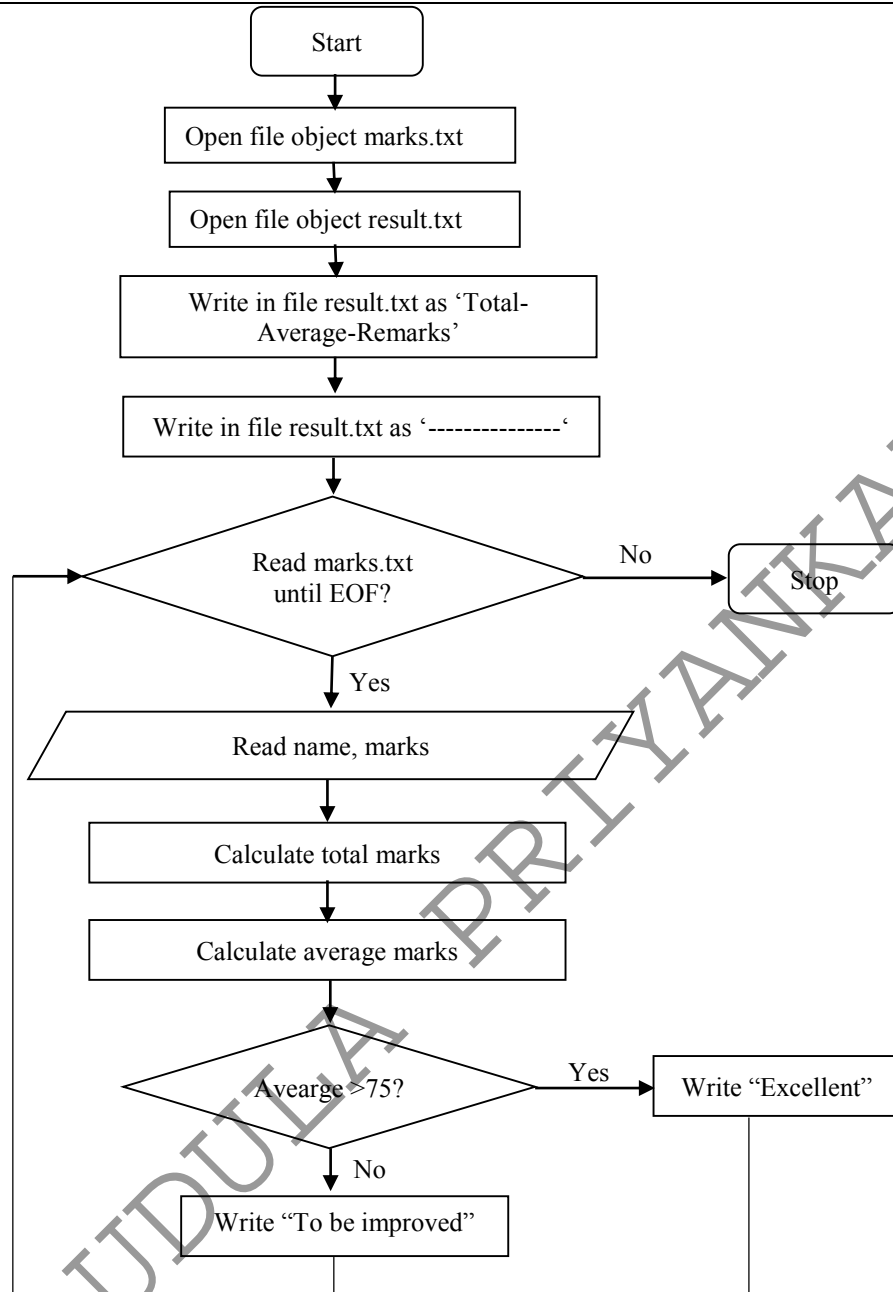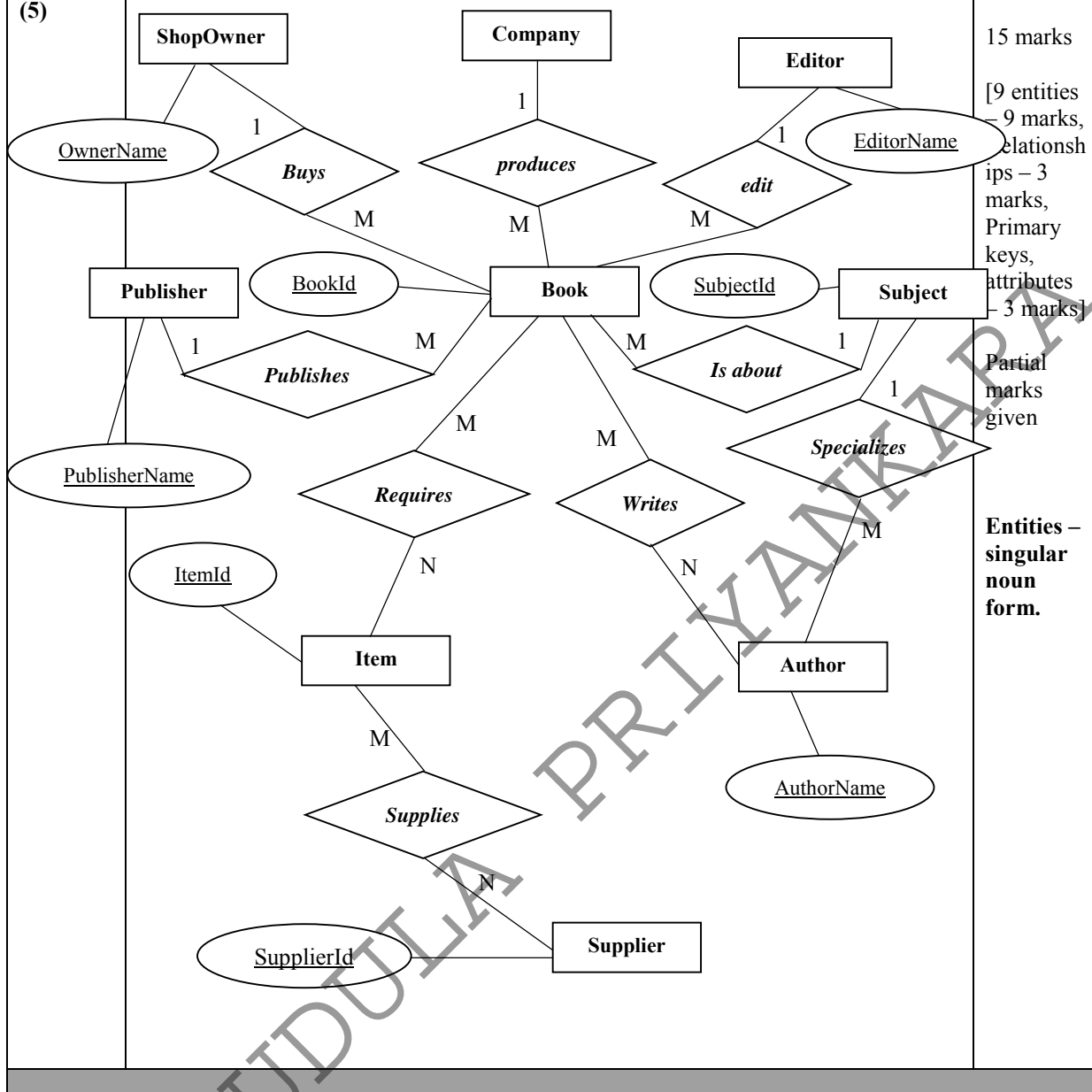
5 marks

Partial marks given

**(4) (c)**

```
f1=open('marks.txt','r')
f2=open('result.txt','w')
f2.write('Total-Average-Remarks\n')
f2.write('--------------------\n')
for line in f1:
    data=(line.strip()).split(",")
    total=int(data[1])+int(data[2])+int(data[3])
    average=total/3
    f2.write(str(data[0])+'-'+str(total)+'-'+str(average)+'-')
    if average>75:
        f2.write('Excellent\n')
    else:
        f2.write('To be improved\n')
f1.close()
f2.close()
```

6 marks
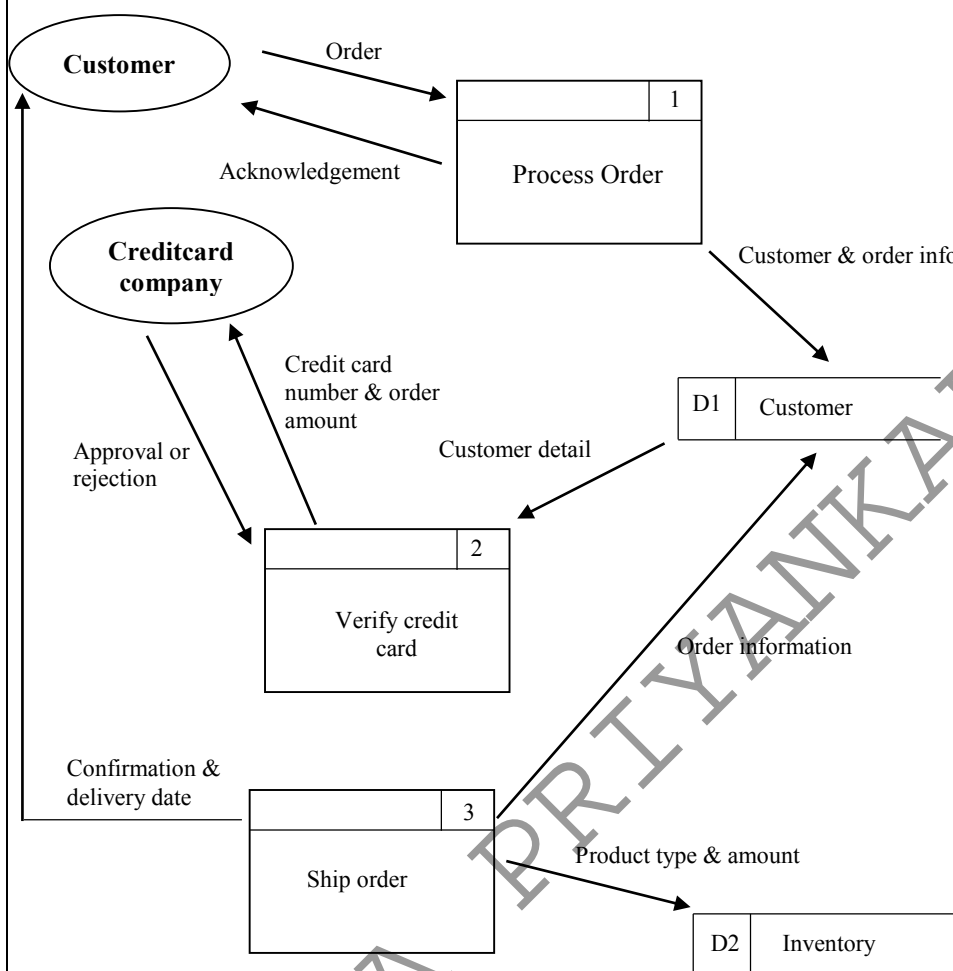
Partial marks given

**(5)**



ShopOwner

Company

Editor

OwnerName

1

*Buys*

M

*produces*

M

1

*edit*

M

EditorName

Publisher

BookId

Book

SubjectId

Subject

1

*Publishes*

M

M

*Is about*

1

PublisherName

M

*Requires*

M

*Writes*

1

*Specializes*

ItemId

N

N

M

Item

Author

M

*Supplies*

AuthorName

N

SupplierId

Supplier

15 marks

[9 entities
– 9 marks,
relationsh
ips – 3
marks,
Primary
keys,
attributes
– 3 marks]

Partial
marks
given

**Entities –
singular
noun
form.**

**(6)**



External entities – 2 marks, processes – 3 marks, data stores – 2 marks, data flows – 8 marks

Partial marks given

Process – verbal form

Data store / external entity / data flow – noun form

**Part – I**     2 x 40 = 80 marks

**Part – II A**     15 x 4 = 60 marks

**Part – II B**     20 x 3 = 60 marks

**Total**          **= 200 marks is divided by 2**

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