



Grade 13

### G.C.E. (A/L) PRACTICE TEST 2017

#### Information & Communication Technology I Answers

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

#### Information & Communication Technology II Part A

1.
  - i. B2C (1 mark)  
 Nayana is the consumer. (1/2 mark)  
 She has purchased a wrist watch through a web site( which sells products). (1/2 mark)  
 This is a B2C transaction. (1 mark)
  - ii. Nayana has used her to pay for the wrist watch, so there is a risk of stealing her credit card details –security issue (2 marks)  
 risk of using credit card details to steal personal details –privacy issue (2 marks)
  - iii. Using a paypal like service to carry out the transaction. (1 mark)
  - iv. 1. Global customer base (1 mark)  
 2. Ability to advertise 24X 365 hours (1 mark)
  
2.
  - i.
 

```
<style type="text/css">
  h2{ color: blue;
      text-align:centre;
  }
  P {font-family:"Comic Sans";
     font-size:20px;
     font-color:red;
  }
</style>
```

(1 mark)
(1 mark)

```
P {font-family:"Comic Sans";
  font-size:20px;
  font-color:red;
}
```

(1 mark)
(1 mark)

```
</style>
```

(1 mark)
  - ii. 

```
<h2>Select a Country you love to travel!</h2>
```

 or **(1 mark)**  

```
<p>Select a Country you love to travel!</p>
```

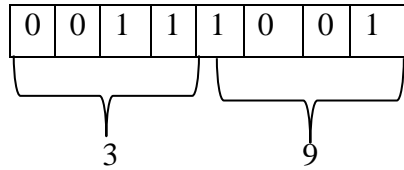
```
<input type="radio" name="country" value="India">India<p>
```

**(1 mark)**

`<input type="radio" name="country" value="Japan">Japan` (1 mark)

`<input type="radio" name="country" value="Holland">Holland` (1 mark)

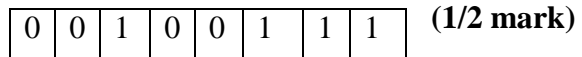
3. i. a.



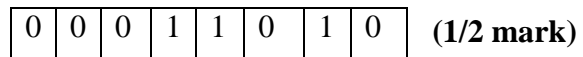
(1 mark)

39

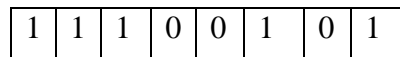
b. 39



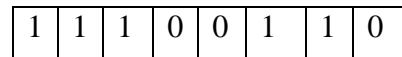
- 26



One's complement



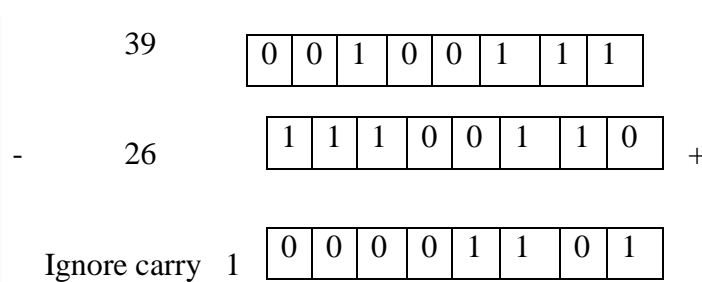
1 + (1 mark)



two's complement

(1 mark)

$39 + (-26) = 13$



(1 mark) for the correct answer with ignore carry

(1 mark) for showing that the answer is equal to 13

ii.

a. One to many

A student has only one desk. A desk belongs to only one student (2 marks)

b. Many to many

A student can study many subjects. A subject is studied by many students. (2 marks)

4. i. ['monkey', 'donkey', 'cat', 'rat', 'deer', 'rabbit', 'elephant', 'cow'] (2 marks)

monkey  
 donkey  
 cow  
 elephant

(1/2 mark)  
 (1/2 mark)  
 (1 /2 mark)  
 (1 /2 mark)

ii. No. (1 mark)

0 (2 marks)  
 4  
 5  
 1  
 4  
 5

iii. Jack (3 marks)  
 Lack  
 Mack  
 Nack  
 Pack  
 Rack

**Part B**

1. Inputs are labelled as follows:

five rupee coins (slot A) - A (1/2 mark)  
 one rupee coins (slot B) - B (1/2 mark)  
 two rupee coins (slot C) - C (1/2 mark)

a) truth table (1/2 mark)

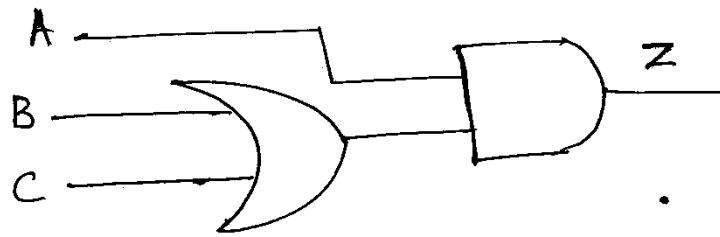
A	B	C	Z
0	0	0	0
0	0	1	0
0	1	0	0
0	1	1	0
1	0	0	1
1	0	1	1
1	1	0	1
1	1	1	1

(1/2 mark) X 8

b)  $Z = A.\bar{B}.\bar{C} + A.\bar{B}.C + A.B.\bar{C} + A.B.C$  (1/2 mark)X4 + 1 mark for the complete expression

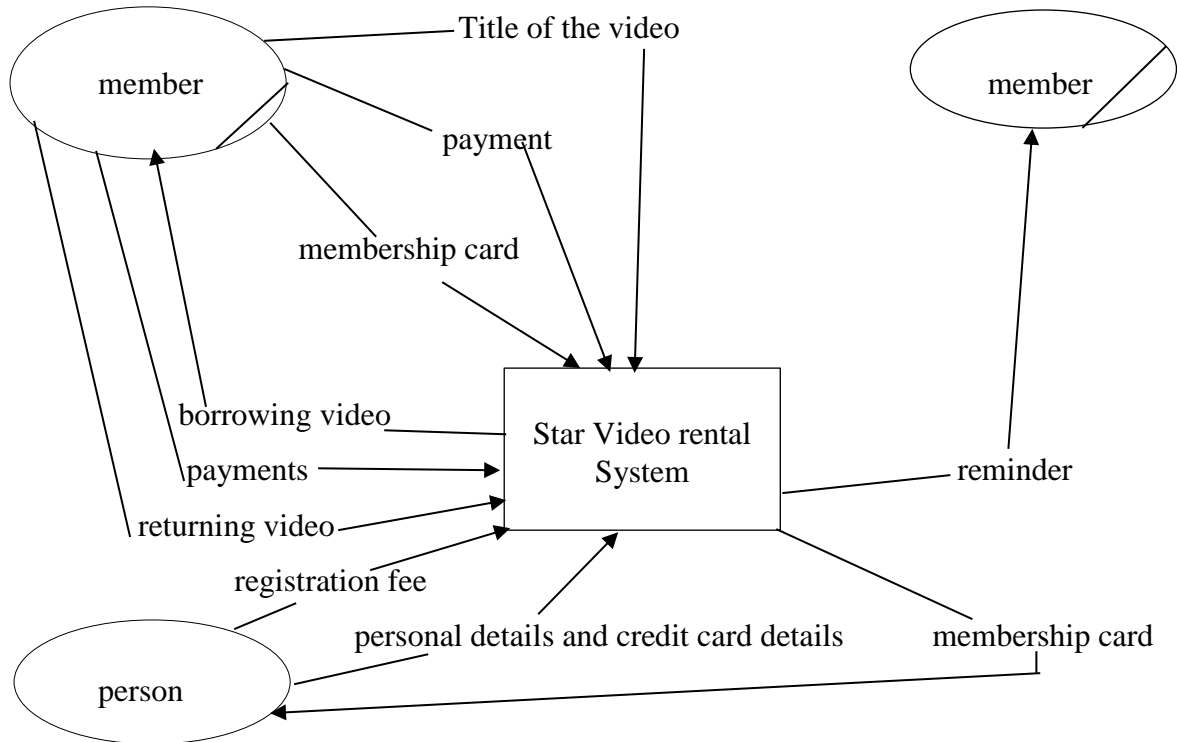
c)  $Z = A.\bar{B}.C + A.B.\bar{C} + A.B.C$  (3 marks)

d)



1/2 mark for each input, output and gate (1/2X6=3 marks)

2. Context diagram



Process- 2 marks

(2 marks)

Data flows – 1 mark each( When marking data flows name and direction should be correct )

(1X 10=10 marks)

External entities-person -1 mark ,member- 2 marks

(1+2=3 marks)

3. a)A- secure hypertext transfer protocol / hypertext transfer protocol secure; (1 mark)

B -the FQDN // fully qualified domain name/ the address of web server (1 mark)

C - the path and resource to be returned or path / pathname / file path (1 mark)

- b) 1. When The (local) computer already has a copy of the needed IP address (in a hosts file);  
2. The (local) computer has a cache of recent DNS queries/ answered DNS queries previously visited site / refreshing a page;  
3. The URL typed in already contains an IP address;  
4. The URL refers to a local resource, e.g., a file on the local computer/ localhost

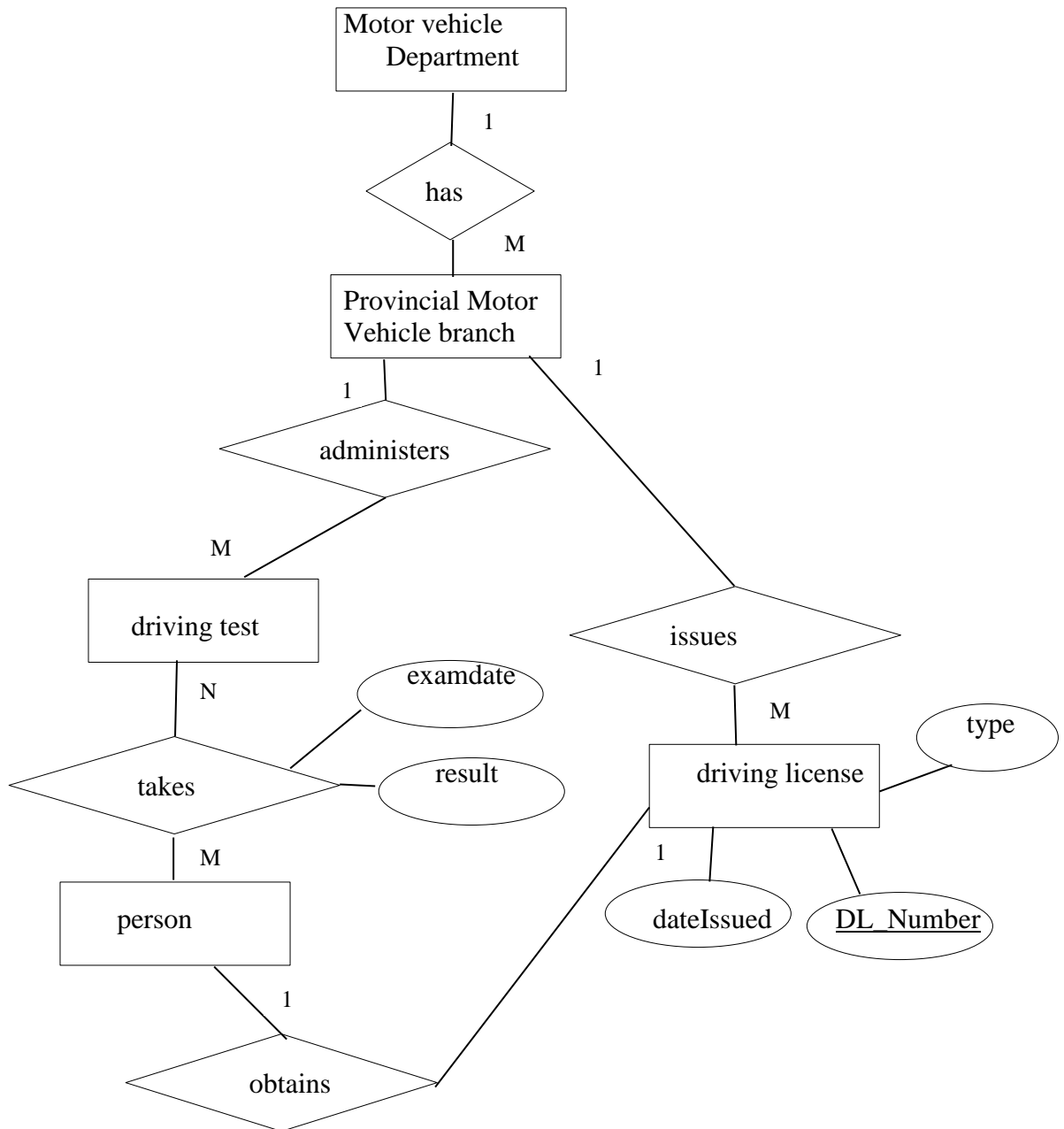
(1.5 X2 =3 marks)

c) Application layer

(3 marks)

- d) To fetch different parts of the web page that also include a URL /To fetch a needed image /video / javascript / css / resource; **(3 marks)**
- e) Port that is temporarily assigned / only exists for duration of a connection; /Port number automatically allocated /assigned from the TCP/IP stack; **(3 marks)**

4. Entity Relationship diagram.



- Entities- 1 mark each** **(1X5=5 marks)**
- Attributes – 1 mark each** **(1X 4=4 marks)**
- Primary key--1 mark** **(1 mark)**
- Relationships-if cardinality and attributes are correct** **(1X5=5 marks)**

5. a) Open file myfriends.txt file for reading **(1 mark)**
- Sort opened file into alphabetical order **(2 marks)**

- Open another file for writing **(2 marks)**  
Write the sorted names back to another text file **(2 marks)**  
Close both files **(1 mark)**

b)

```
x=open("myfriends.txt","r") (1 mark)  
str = x.read(); (1/2 mark)  
names=str.split(); (1 mark)  
names.sort(); (1/2 mark)  
sf=open("sortedfriends.txt","wb") (1 mark)  
sf=names (1/2 mark)  
for index in range(len(sf)): (1 mark)  
    sf.write(sorteddf[index]+" ") (1 mark)  
sf.close(); (1/4 mark)  
x.close(); (1/4 mark)
```

6.

- a) 1. The system shall be able to read the smart card. **(3 marks)**  
2. The system shall be able stop the bus at the relevant destinations. **(3 marks)**
- b) 1. The system shall be able to calculate the bus fare correctly. **(2 marks)**  
2. The system shall be able to deduct the bus fare correctly from the smart card. **(2 marks)**
- c) 1. This system only has 12 destinations. But people may need to be stopped at more destinations. Therefore increasing the number of destinations should be considered.  
2. The passenger has to key in the destination number in this system. But if the passenger is given the facility to use a GUI which gives a map, he or she can indicate the destination. (by touching/using a mouse).It will be more user friendly. **(2.5 marks X 2=5 marks)**