Part II - B

Answer sheet and marks allocated

(1) (a). i. RAM (0.5 marks)

Store operating system as long as the computer is working.

Temporary stores data, instructions, information and application software according to user requirements

(0.5 marks)

ii. Cache memory (0.5 marks)

Since it takes long time to access data which needed by processor from main memory, cache memory is used. They are located in or closed to processor and have lower capacity than main memory and support to data access.

(0.5marks)

iii. Register (0.5marks)

Temporary storage of data which needed in data processing until they sent to ALU and tempory storage of processed information until released to main memory.

(0.5marks)

(b).

$$\frac{25200}{8} = 3150$$

$$\frac{3150}{512} = 6$$

(0.5 marks)

To get bytes and remaining 78 (0.5 marks)

To show wastage in file space as 78 bytes (0.5marks)

(c). (i) Truth table

A	B	C	D	F(ABCD)
0	0	0	0	0
0	0	0	1	0
0	0	1	0	0
0	0	1	1	1
0	1	0	0	0
0	1	0	1	1
0	1	1	0	0
0	1	1	1	1
1	0	0	0	0
1	0	0	1	0
1	0	1	0	0
1	0	1	1	1
1	1	0	0	0
1	1	0	1	1
1	1	1	0	0
1	1	1	1	1

(0.25 marks x 16 = 4)

(ii)

$$F = \bar{A}\bar{B}CD + \bar{A}B\bar{C}D + \bar{A}BCD + A\bar{B}CD + AB\bar{C}D + ABCD$$

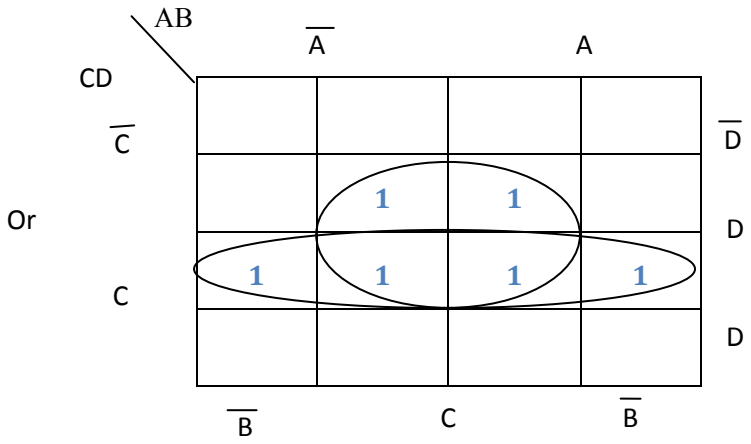
(1 marks)

(iii)

$$F = \bar{A}\bar{B}CD + \bar{A}B\bar{C}D + \bar{A}BCD + A\bar{B}CD + AB\bar{C}D + ABCD$$
$$= \bar{B}CD(\bar{A} + A) + B\bar{C}D(\bar{A} + A) + BCD(\bar{A} + A)$$
$$= \bar{B}CD + B\bar{C}D + BCD$$
$$= \bar{B}CD + BD(\bar{C} + C)$$
$$= \bar{B}CD + BD$$
$$= D(\bar{B}C + B)$$
$$= D(B + C)$$
$$= BD + DC$$
$$= BD + CD$$

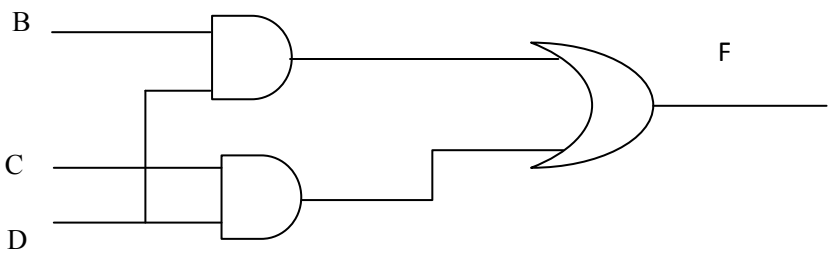
(1.5 marks)

Or



BD + CD

(iv) F = BD + CD



(2 marks)

(v)

$$F = \bar{A}\bar{B}CD + \bar{A}B\bar{C}D + \bar{A}BCD + A\bar{B}CD + AB\bar{C}D + ABCD$$

$$\bar{F} = \overline{\bar{A}\bar{B}CD + \bar{A}B\bar{C}D + \bar{A}BCD + A\bar{B}CD + AB\bar{C}D + ABCD}$$

$$= \bar{\bar{A}\bar{B}CD}.\bar{\bar{A}B\bar{C}D}.\bar{\bar{A}BCD}.\bar{A\bar{B}CD}.\bar{AB\bar{C}D}.\bar{ABCD}$$

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

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

(2 marks)

(2) (a).

FTP	HTTP
FTP is a two-way system as files are transferred back and forth between servers and workstation.	HTTP is a one-way system as files are transferred only from the server to the workstation browser.
FTP, where entire files are transferred from one device to another and copied into memory.	HTTP only transfer the content of a web page in to a browser for viewing.
FTP is a protocol used to upload files from a workstation to FTP server or download files from a FTP server to workstation.	HTTP is a protocol used to transfer files from a web server on to a browser in order to view a web page that is on the internet.

(2 marks)

(b). A repeater

- Is an electronic devices that receives a signal and retransmits it at a higher level and /or higher power ,or on to the other side of an obstruction, so that the signal can cover longer distances.

(1.5 marks)

A bridge

- Is a device filters data traffic at a network boundary. Bridges reduce the amount of traffic on a LAN by dividing it into two segments.

(1.5 marks)

(c). To avoid the wastage of IP address. (2 marks)

(d).

IP Address	Subnet Mask	Network ID	Class
172.16.10.0/16	255.255.0.0	172.16.0.0	B
10.10.10.0/10	255.192.0.0	10.0.0.0	A
192.168.10.0/26	255.255.255.192	192.168.10.0	C
190.100.100.10/19	255.255.224.0	190.100.96.0	D

(1 marks x 3 = 3)

(3) (a). CSS minimizes complex coding and repetitive coding.

CSS can be developed externally.

(2 marks)

(b). p{Color:red; font-family;arial; font size : 16pt} (2 marks)

(c).

```
Member Login Form
<form name="form1" method="post" action="">
   User Name<input type="text" name="uname" />br>
   Password <input type="text" name="pword" />br>
   <input type="checkbox" name="signedin" /> keep me signed in<br>
   <input type="submit" name="Log" value="Login" />

</form>
```

(5 marks)

(d). <img src = “images/abc.jpg”> (3 marks)

(e). contact administrator (3 marks)

(4) (a).When the program is compiled it runs on any same type of interface. But if the program is converted to a byte code, it can be interpreted line by line and execute itself on any interface. Then Syntax errors can be avoided. The processing speed is also high.

(2 marks)

(b).ISA- Second generation language

Low level programming language. Written in Assembly language.

SQL-Fourth generation language

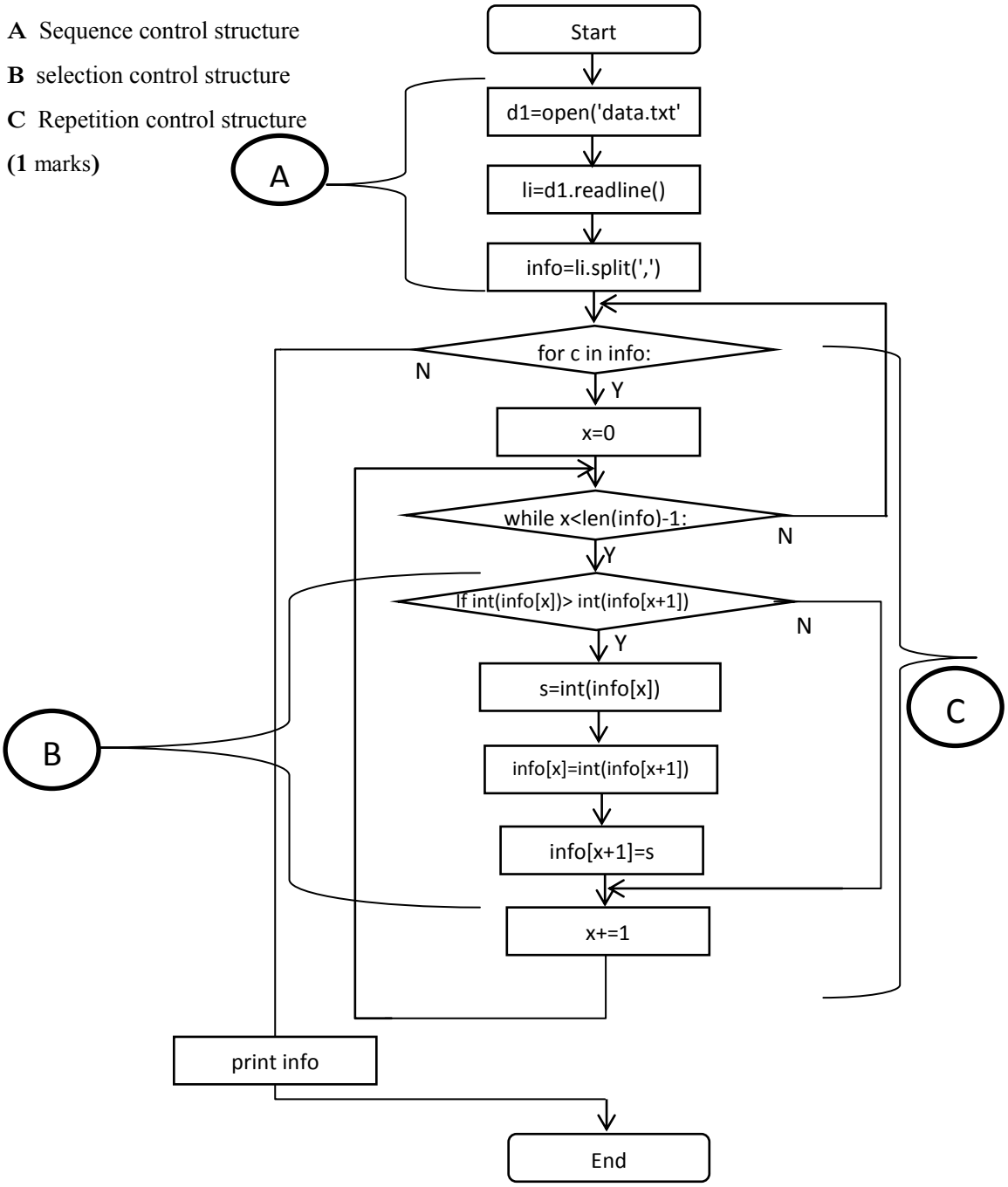
High level programming language . No procedures.

(2 marks)

(c).

- **A** Sequence control structure
- **B** selection control structure
- **C** Repetition control structure

(1 marks**)**



(3 marks)

(d) (i) **Data in data.txt file is taken into variable info** (2 marks)

- In first line, file object called d1 is declared and open the data.txt file.
- In second, redline()function is executed with in d1 file object and read the first line of data.txt file and store it as string variable.
- The value in li variable is separated where comma's are located and processed as the elements of the list variable called info.

(ii) Bubble sort (1 marks)

(iii) **The elements in info list are arrange in ascending order and displayed.**

- Elements in the list are compared in pairs.
- If the value of first element is higher than the second elements they interchange their places and if not they remain the same way
- Then the second and third elements are compared. Thus this program runs until the one less than number of all elements.

(2 marks)

(iv) [1, 2, 3, 4, 4, 5, 6, 7, 8, 9] (2 marks)

(5) (a). Black box testing-. To input data into information system and whether the output is accurate.
eg. Acceptance Testing
White box testing- To check internal coding system in the information system.
eg. Unit testing, Integrated Testing

(3 marks)

(b). Steps of SDLC

1. Problem definition
2. Feasibility study
3. System Analysis
4. System Design
5. Software Development
6. Testing
7. Implementation
8. Maintenance (4 marks)

(c).

Waterfall model	Spiral model
All requirements are identified at the beginning of system development. As it consuming more time, the requirements may change when time of deployment.	As system developments steps are repeated new requirements can be adopted when necessary.
	It is more suitable for risk prone compute systems

(4 marks)

(d) – Distinguish the system from the external environment.

- Display data flow within the system. (2 marks)

(e). – The old system is helpful to identify the accuracy of new system.

- The old system could be used If new system has faults. (2 marks)

(6)

(a). E-Business – Entire process of business organization covers using digital technology.

E-commerce- Selling goods using digital technology and receiving income through the internet.

(2 marks)

(b). Pure Brick – Traditional business which not use digital technology.

Brick-click – Business that use traditional and e-business methodologies both.

Pure-click –Business that uses purely digital technology

(1 marks x 3 = 3)

(c). **Advantages of G2C-**

- Efficient service for the public.
- Ability to receive the service without going out of house.
- more secure.
- no need of brokers.
- In the government point of view easy for data management of recipients of citizen services.

Disadvantages of G2C -

- Accessibility of general public to internet
- Difficult to ensure identification.

(0.5 marks x4 = 2)

(d). - To get mental satisfaction by responding human feeling.

- Entertainment.
- Controls in risky situations by understanding human reactions.

Ex: provide responses for drowsiness while driving.

-Ability to use in crime investigating.

(4 marks)

(e). Von Neumann –All data is represented with bites of 1 and 0

Quantum –A large quantity of data can be displayed using qubit in multi dimensional way

(2 marks)

Data processing speed is higher than the traditional computers.

Suitable for large scale data processing.

Can be used for large data base management such as modeling and cryptographic .

(2 marks)