



Jaffna Hindu College

1st Term Evaluation Exam - 2022

Grade - 11

Information and Communication Technology

Time : 3 Hours

Name / Index No.

Part I

Answer all questions.

1) Consider the following numbers

A – 183_{10}

B – 357_8

C – $B7_{16}$

Which of the above is/are equivalent to 10110111_2 in binary notation?

1. A only 2. A and B only 3. A and C only 4. All A, B and C

2) The hexadecimal value equivalent of 101110111_2 is:

1. $1E7_{16}$

2. $2E7_{16}$

3. $1F7_{16}$

4. $2F7_{16}$

3) Which of the following represents the given numbers in ascending order?

1. 101101_2 , 43_{10} , 65_8

2. 52_8 , $A7_{16}$, 200_{10}

3. $B2_{16}$, 1111110_2 , 301_{10}

4. 14_8 , $4C_{16}$, 111000_2

4) Which of the following has on order to MSD, LSD value of the 01011001_2 ?

1. 0, 0

2. 1, 1

3. 0, 1

4. 1, 0

5) If Character 'C' is represented in the ASCII table as 67_{10} , what is the binary representation of character 'F' in the ASCII table?

1. 1000110_2

2. 1000101_2

3. 1000111_2

4. 1000100_2

6) What would be displayed if the formula = $(4^2) + 6 * 1 - 5$ is entered into a cell in a spreadsheet?

1. 9

2. 8

3. 10

4. 17

7) Consider the following computer memory types

A – ROM

B – RAM

C – Register

D – Hard disk

Which of the above are volatile memory types.

1. B and C

2. A and B

3. A and C

4. B and D

8) Which of the following correctly lists the given computer storage components in the descending order of access speed?

1. Cache memory > hard disk > DVD > register

2. Register > RAM > CD > Magnetic tape

3. Magnetic tape > hard disk > cache memory > register

4. RAM > CD > cache memory > Magnetic tape

9) Consider the following statements about data and information

A – Symbols

B – Numbers, marks obtained in the subject

C – The average rain in January month

Which of the above statements best describe(s) "data"?

1. A only

2. A and B only

3. A and C only

4. All A, B and C

10) Consider the following statements.

A – Touch screen is the input and output device.

B – Digital computers are used to identifying the environmental factors

C – OCR is used to capture text in a document and to edit that captured text in the document

Which of the above statements are correct?

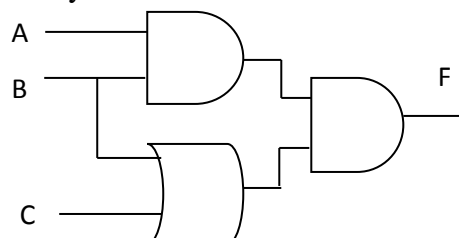
1. A only

2. A and B only

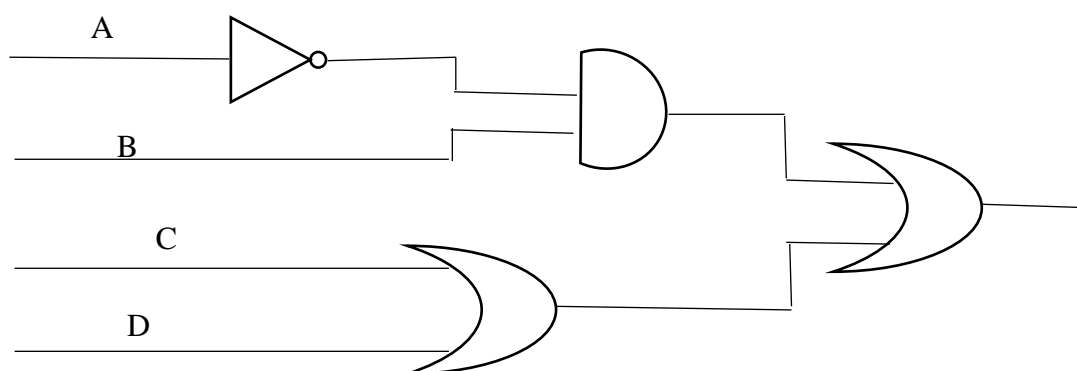
3. A and C only

4. All A, B and C

- 11) What was the effect when vacuum tubes were replaced by transistors and later transistors were replaced by integrated circuits in the CPU?
1. Both processing power and electricity consumption increased.
 2. Processing power increased while electricity consumption decreased.
 3. Processing power decreased while electricity consumption increased.
 4. Both processing power and electricity consumption decreased.
- 12) If the final output of the given logic circuit, F is 1. Which of the following represents the corresponding values for the inputs A, B and C respectively?
1. A – 0, B – 0, C – 1
 2. A – 1, B – 1, C – 0
 3. A – 1, B – 0, C – 1
 4. A – 0, B – 1, C – 1



- 13) Consider the following circuit.



Which of the following is equivalent to the above circuit?

1. $(\bar{A}+B). (C.D)$
 2. $(A+B). (C+D)$
 3. $(\bar{A}.B) +(C+D)$
 4. $(A.B). (C+D)$
- 14) Which of the following communication media uses the reflection of light to transmit data?
1. Coaxial cable
 2. Shield twisted pair
 - 3) UTP
 4. Fiber optics
- 15) In a network topology, each network component is physically connected to a central node such as a hub or a switch.
1. star
 2. ring
 3. mesh
 4. bus
- 16) Consider the following statements regarding to Data transmission.
- A – Microwaves travel in a linear mode.
- B – Data is transmitted as signal in unguided media.
- C – Unshielded Twisted Pair is used to transmit data for a long distance.
- Which of the above statements are correct?
1. A only
 2. A and B only
 3. A and C only
 4. All A, B and C
- 17) What is the most appropriate number of lines per slide of a good quality presentation in MS PowerPoint software?
1. 5 – 7
 2. 7 – 9
 3. 6 – 9
 4. 1 – 7
- 18) Consider the following statements regarding to electronic database
- A–A very small space is needed to save data.
- B–More credible
- C–More man power is needed.
- Which of the above statements are correct?
1. A only
 2. A and B only
 3. A and C only
 4. All A, B and C

Questions 19 – 20 are based on the following databases

Vehicle Table

Vehicle_No	Vehicle_Type	Vehicle_driver
CAD 1232	BMW	Alex
FA 4310	TOYOTA	Nirmal
BBO 1821	VITZ	Notty
AX 3216	VITZ	Sutha

Vehicle_engine

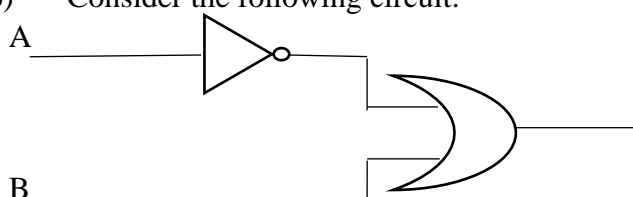
Vehicle_Type	Engine_Capacity
BMW	6500cc
TOYOTA	1196cc
VITZ	990cc

- 19) What would be the most suitable field as the primary key for the Vehicle
1. Vehicle_No
 2. Vehicle_Type
 3. Vehicle_driver
 4. Engine_capacity
- 20) How many fields and records are in vehicle_engine table respectively,
1. 2,3
 2. 3,2
 3. 3,3
 4. 2,2
- 21) What are the two methods are used for accessing the files in OS?
1. Sequence, Iteration
 2. Sequence, Random
 3. Random, Selection
 4. Selection, Iteration
- 22) What are the tools included into the clipboard ?
1. Image, Video
 2. Cut, Copy, Paste
 3. Format painter, Image
 4. Find and replace
- 23) Which of the following software is used to monitor errors in hardware and software of a computer or network of computers?
1. Disk scanner
 2. Task Manager
 3. System diagnosis tools
 4. Data synchronization software

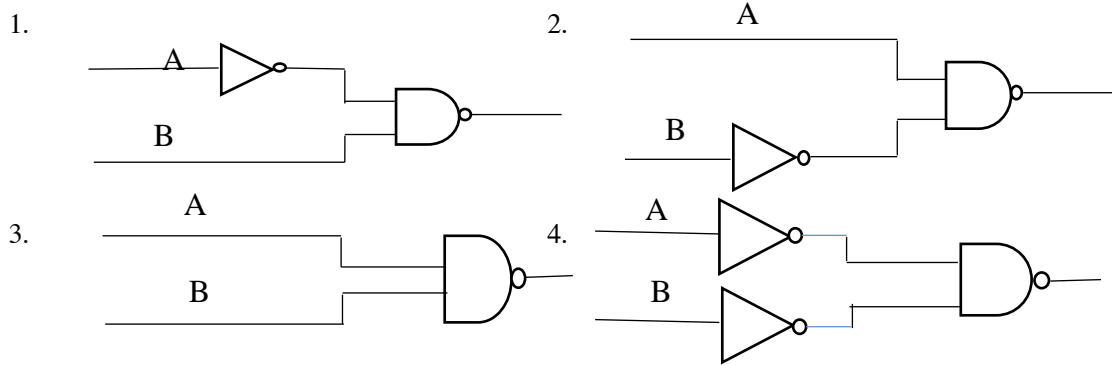
Questions 24 – 25 are based on the following spreadsheet segment

	A	B	C	D
1	Product	Price	Amount	Total
2	Keyboard	12500	5	62500
3	Mouse	500		2500
4	CPU	110000		550000
5	Monitor	21000		105000
6	Total Amount			

- 24) What formula would be displayed in the cell D5 if the formula in the cell D2 was copied to D3:D5
1. =B\$2*C\$2
 2. =B\$5*C2
 3. =B5*C2
 4. =B5*C\$5
- 25) What is the formula to be written in cell D6 to display the total amount in the cell range D2:D5
1. =sum(D2:D5)
 2. =count(D2:D5)
 3. =sum(D1:D5)
 4. =count(D1:D5)
- 26) Consider the following circuit.



Which of the following logic circuits has a truth table equivalent to the truth table of the logic circuit shown on the above?



27) Sentence X formatted as sentence Y using the word processing software.

Sentence X: -Charles Babbage, English mathematician and inventor who is credited with having conceived the first automatic digital computer.

Sentence Y: -**Charles Babbage**, English mathematician and inventor *who* is credited with having conceived the first automatic digital computer.

Which of the following icons are used to format sentence X as Y



28) Consider the following statements regarding to electronic presentation.

A–In Slide sorter view, all the slides of the presentation are displayed together as mini slides.

B–Slide show mode is used to run a presentation to the audience.

C–Slide transition is used for animation for the texts, drawings etc. in a slide and displayed them.

Which of the above statements are correct?

1. A only 2. A and B only 3. A and C only 4. All A, B and C

29) What is / are the true statement / statements?

A- Unit testing is tested with modules.

B – System testing is combine modules and tests.

C – Acceptance testing is carryout by system designer.

1. A only 2. B only 3. C only 4. A and B only

30) A new automated library information system is to be deployed in a school. The principal doesn't feel safe to direct start the new system by completely stopping the current manual system.

Which of the following are appropriate methods of system conversion which will address the principal's concern?

1. either direct or parallel 2. either direct or prototype
3. either parallel or pilot 4. either prototype or parallel

31) In which SDLC model is developed through repeated cycles in smaller portion at a time?

1. Waterfall model
2. Phased implementation
3. Iterative incremental model
4. Piolet implementation

32) Which of the following control structure can't be used in an algorithm?

1. Sequence 2. Selection 3. Repetition 4. Calculation

33) The answer to $9 \text{ MOD } 10$ is?

1. 9 2. 10 3. 9 4. 0

34) What is the expected output of the following pseudo code segment?

n = 5

While (n > 1) Do

Print n

n = n - 2

End while

1. 531 2. 532 3. 53 4. 530

35) If mark contains value 55, what will be the value assigned to R above pseudo code?

If (mark >= 89.5) Then

R = 'Super merit'

ElseIf (mark >= 74.5) Then

R = 'Merit'

ElseIf (Mark >= 50) Then

R = 'Pass'

Else

R = 'Fail'

End If

1. Super merit 2. Merit 3. Pass 4. Fail

36) How many times the '\$' will be displayed the following pseudo code?

a = 1

Do

Print '\$'

a = a + 2

While (a < 10)

1. 1 2. 3 3. 4 4. 5

Consider the given flowchart to answer the questions 37 - 40 .

37) What will be displayed as the output of the given flowchart?

1. 1 2. 3 3. 13 4. 10

38) What is the last value of x, y respectively:

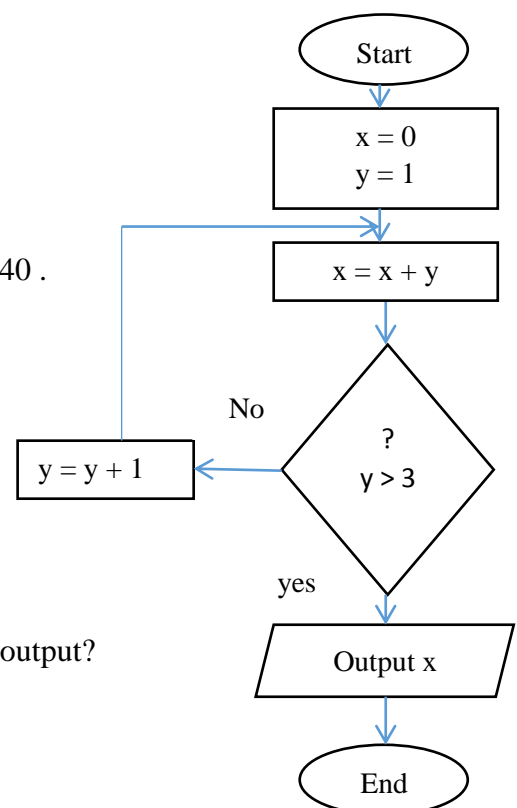
1. 3, 4 2. 10, 4 3. 4, 10 4. 4, 13

39) How many times the loop will be executed:

1. 1 2. 2 3. 3 4. 4

40) If the labels 'Yes' and 'No' are interchanged in the given flowchart, what will be displayed as its output?

1. 1 2. 2 3. 3 4. 4



(40 marks)

Part II

Answer five questions only, including the first question and four others.

1. (i) Convert the hexa- decimal number $CE5_{16}$ into octal number.

(ii) Mention 2 contributions of ICT in teaching learning process during the holiday period.

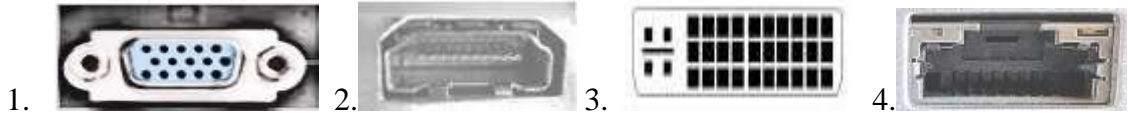
(iii) Select the suitable example for the following types of operating system.

- a) Single User
- b) Multi User
- c) Multi-Tasking
- d) Real Time

(Windows 10, Linux, Airline Reservation System, Ms DOS)

(iv) Select the suitable ports to connect the following devices with computer and write the correct label for each one.

- a) Digital Television
- b) Computers with network switch



(v) A student wants to select Accountancy (A), Business Studies (B) with ICT (I) or Economics (E) for his A/L commerce stream. Write the correct Boolean expression for the above student's decision.

(vi) Name two coding systems used to represent characters (letters) in a computer?

(vii) Write down two main differences between hub and switch in data communication.

(viii) In which generation can be accessed operating system with DOS?

(ix) If a user enter the rain falls value in 40 mm, what is the output is displayed for the following pseudo code.

```
Input rainFall
If rainFall > 50 mm
    Output 'Cold'
Else
    If (rainfall >30 mm) Then
        Output 'Wet'
    Else
        Output 'Hot'
    End if
End if
```

(x) Write down two examples for computer language translators?

(2 X 10 = 20 marks)

2.

a) In the Automated Cash Deposit Machine (CDM) the user enters the account number and the amount to be deposited and deposits the cash notes in the corresponding area. After counting the cash notes, the machine will check the correct amount of money, then correct amount is deposit in his account and update the balance of the account. Eventually the account number and balance will be displayed on the screen and printed out.

Write down one example each for input, process and output of the above scenario.

b) Specify the two differences between a manual information system and a computer based information system.

c) Select the appropriate information system development model for each of the following situations from the following list.

- (i) Develop a system that can be improved by developing a small component at a time and repeating it over and over again.
- (ii) The requirements are well identified at the outset and the next step will be initiated only after the completion of previous step.

[List: Spiral Model, Waterfall Model, Iterative Incremental Model]

d) Select the correct type of test for the activities shown in the table below and write against the labels A - D.

Activity	Test Type
Each component of the system is tested separately.	A
Testing the relationship between the units of the system.	B
User, accept the system or recommendation for proposed system.	C
Ensuring expected outputs for the given inputs of the whole system.	D

[List: System Testing, Unit Testing, Performance Testing, Acceptance Testing, Integration Testing, Maintenance Testing] (3, 1, 2, 4 marks)

3. IT ZONE is a store that sells computer parts. They purchase items from consignment suppliers and the details of supplied items and supplier is recorded in following tables of a database.

Item_Name	Item_ID	Stock
19" LED Monitor	I001	08
2 TB Hard Disk	I002	43
32 GB USB Flash Drive	I003	20
16 GB RAM	I004	17

Item Table

Date	Sup_ID	Item_ID	Count
14/07/2021	S001	I001	50
19/08/2021	S003	I004	70
20/10/2021	S002	I002	15
15/12/2021	S004	I003	43
30/12/2021	S002	I001	27

Purchase Table

Sup_ID	Sup_Name	PhoneNo
S001	IT Park	0112467310
S002	City Center	0356810130
S003	Tech Mart	0371101100
S004	IT City	0112514090

Supplier Table

- Write down two Primary keys and their table names?
- Write down two Foreign keys and their table names?
- Anand goes to IT Zone and buys ten 2 TB Hard Disk.

- a) Which Table(s) should be updated?
 - b) Write the updated record(s) in table?
- 4) The IT Zone decided to start a sale of a new item called “Laser Printer”. They purchased 20 Units of the item from the supplier “Best IT Solutions” on 31st December 2021 and communicated with that supplier on 0112708010.
- a) Which Table(s) should be updated?
 - b) Write the updated record(s) in table? (2, 2, 2, 4 marks)

4. Consider the following Income report of Colombo ABC College and answer questions.

	A	B	C	D	E	F
1						
2	Sportsmeet - 2018 Income Report					
3	House	No. Of Students	Fees per student	Amount	Contribution to school	Amount after Contribution
4	Royals	450	Rs. 80.00	Rs. 36,000.00	Rs. 3,600.00	Rs. 32,400.00
5	Titans	470	Rs. 80.00	Rs. 37,600.00	Rs. 3,760.00	Rs. 33,840.00
6	Kings	430	Rs. 80.00	Rs. 34,400.00	Rs. 3,440.00	Rs. 30,960.00
7	Capitals	460	Rs. 80.00	Rs. 36,800.00	Rs. 3,680.00	Rs. 33,120.00
8	Total					Rs. 130,320.00
9	Contribution Percentage	10%				

Contribution to school = Contribution percentage * Amount

- 1) Write down the formula to find the amount collected by Royals House in cell D4?
 - 2) Write down the formula to display the Contribution to School in cell E4 for Royals house.
Assume that this formula will be copied to other cells to calculate the Contribution to School for all houses.
 - 3) Write down the formula to find the total amount after contribution of Royals House in cell F4?
 - 4) Write the function to find the Total Contribution to school in Cell E8?
 - 5) Name two appropriate chart types available in spreadsheet software to show the house name vs Contribution to school? (5 X 2 = 10 mark)
5. “Operating system is to provide an environment suitable for executing the commands issued by the user.”
- 1) Write down the statements are true / false.
 1. Disk scanner is to check the errors in hard drive. (.....)
 2. Translators are translated high level language into machine language. (.....)
 3. Operating system is facilitated the interaction between application and user. (.....)
 4. Multitasking OS is specifically designed for particular task. (.....)
 5. Windows, Icons, Menus and Pointers are components of graphical user interface. (.....)
 - 2) Select suitable term from the bracket.
 1. Booting instructions are called as.....
 2. Data communication is well demonstrated by in network management.
 3. Files can be copied of hard drive is called
 4. is organizing the hard disk by rearranging clusters of small spaces and creating a large free space.
 5. A OS is provided service to one person at a time.
- (backup, disk formatting, cloud computing, disk defragmentation, multiple user, Single user, BIOS)
- (10 marks)

6.(i) The following pseudo code shows an algorithm that reads two numbers and display the small number. Draw the flowchart for the algorithm in the pseudo code given below.

Begin

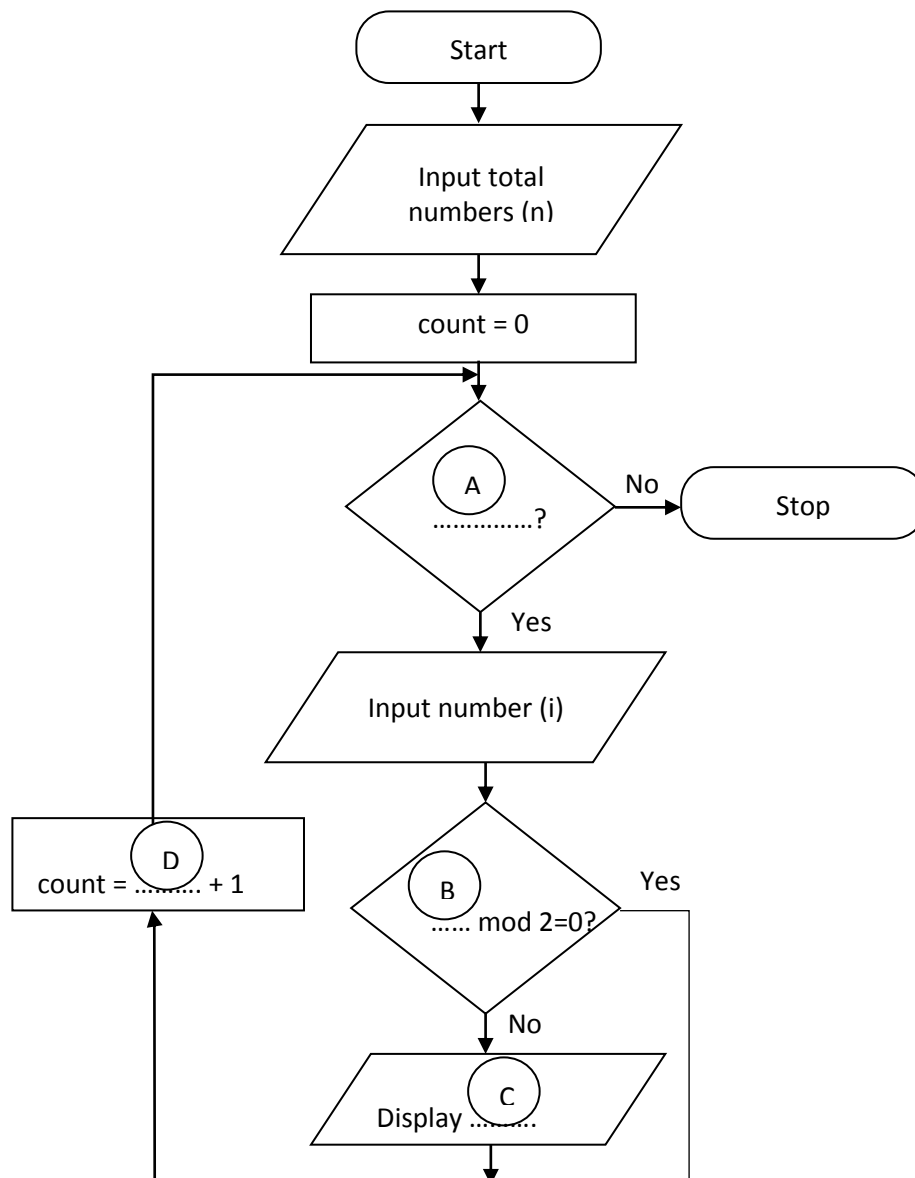
```

Input X, Y
If (Y > X) Then
    Display X
Else
    Display Y
End If

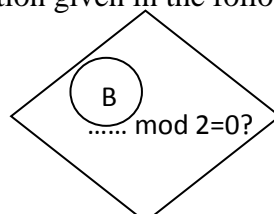
```

End

(ii) The following flow chart is constructed to display the odd numbers in “n” number of inputs. However it has some missing terms labeled as A – D. Fill in the blanks with the correct term. Write the Letters of labels along with correct term in your answer script.








(iii) How to modify the condition given in the following decision making symbol to display the even numbers.



(4, 4, 2 marks)

7.

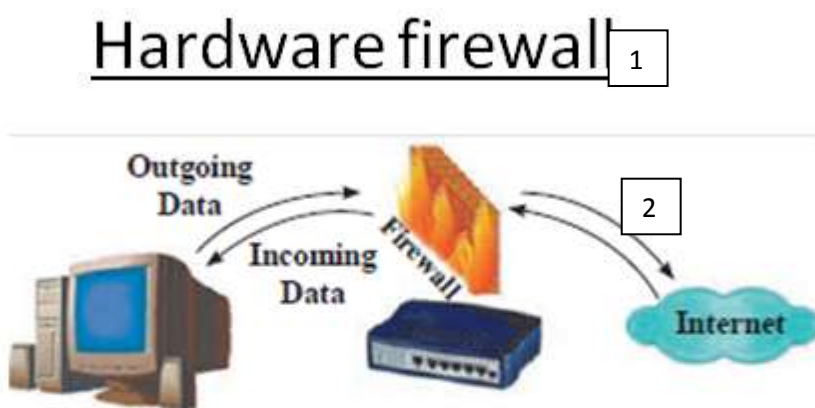
i) The following table shows some of the icons labeled A – E of the word processing software.

				
A	B	C	D	E

Identify the suitable description for each of the icons A – E from the description list numbered 1 – 6. Write down each icon label and its corresponding description number in label → number format.

Description	Spelling & grammer	Non printing characters	Clipart	Picture	Drop cap	Hyperlink
Number	1	2	3	4	5	6

ii) Segment of the word processing document is shown below with some formatting done. The formatting tasks are labeled as 1 – 5. Before formatting, all the text in the original document had the same font size.









➤ Firewall protects a network from unauthorized access to or from a network by filtering data that pass through it.

3 ➤ Firewalls bought as a separate unit have now been built in *broadband routers*. 4

➤ All messages entering or leaving a network pass through the firewall.

Source : <https://www.firewallseq.gov/hardware> 5

Following are the icons of some formatting tools in a word processing software:

Icon of the formatting tool						
Icon label	P	Q	R	S	T	U

Identify the icons of formatting tools, indicated by the labels P –U which are required to do the formatting tasks indicated by the label 1 – 5. Write down the label of each formatting task 1 – 5 and its matching icon label of the formatting tool in the task label → icon label format.

(10 marks)