

Name:

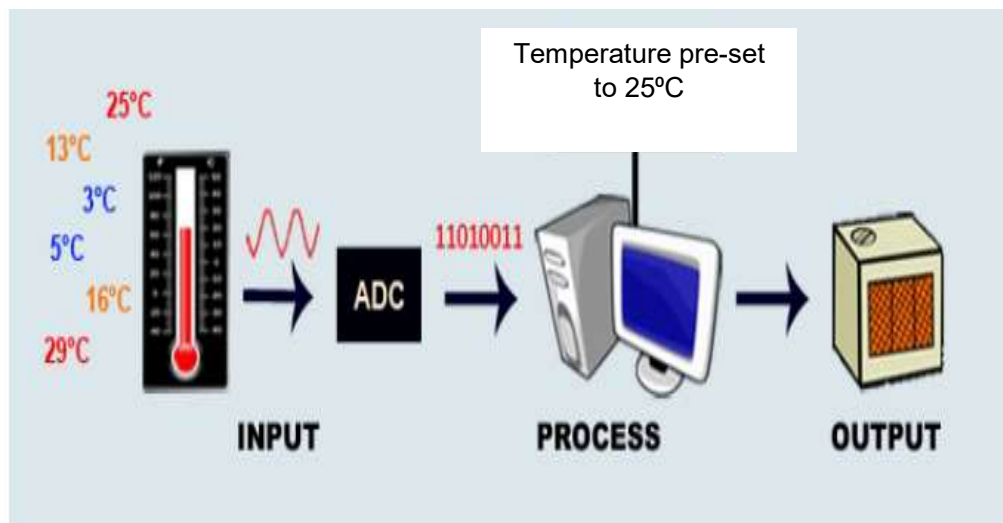
Matric number:

Tutorial

This paper consists of 6 questions.**Answer ALL questions.**

QUESTION	MARKS
1	/24
2	/16
3	/15
4	/13
5	/4
6	/8
TOTAL	/80

1. (a) Identify **two (2)** possible activities or elements for input, process, output and storage based on the scenario below.



The temperature at Ceria Homestay at Kinabalu Mountain is about 12-15°C. Modern Central Heating System was applied at Ceria Homestay to maintain a constant desirable temperature. The perfect room temperature was set at 25°C. The Ceria Homestay use sensor and computer to:

- *Maintain the optimum temperature of 25°C.*
- *Turn heating off when it rises above 25°C.*
- *Turn heating on when it falls below 25°C.*

[8 marks]

Operation	Activity/Element
Input	
Process	
Output	
Storage	

- (b) Convert **ACE23**₁₆ to binary number. Show your calculations.

[3 marks]

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- (c) Convert **8B0F**₁₆ to decimal. Show your calculations.

[3 marks]

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- (d) Convert 10010010_2 to the decimal number. Show your calculations.

[4 marks]

- (e) Find the missing number in the sequence given below. Give your answer in the binary system.

[4 marks]

23_{16} , _____, $2F_{16}$, 35_{16}

- (f) For phrase shown below, calculate number of bits and bytes based on Information Coding Schemes.

“Believe in yourself....”

[2 marks]

Coding Scheme	Number of bits	Number of bytes
EBCDIC		
Unicode		

- (b) Draw a logic circuit for the Boolean expression given.

$$Z = (\bar{R} \oplus S) \cdot (\bar{T} + S)$$

[5 marks]



- (c) Naufal want to go to cinema to watch '*Gemencheh Boy*' movie on this Saturday. His father will only bring him to cinema if both of his sister at hostel can go out for outing. However, he can go for the movie if his parent free on that day.

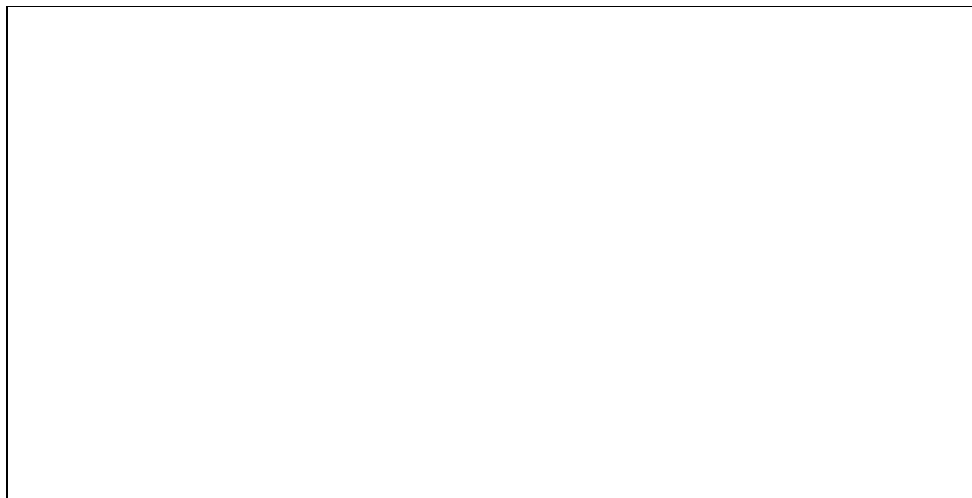
Based on the scenario given above,

- i) Write a Boolean expression.

[2 marks]

-
- ii) Derive a truth table.

[3 marks]



3. A network is a collection of computers and devices connected together often wirelessly via communication devices and transmission media.

- (a) Identify the most suitable communication device from the given statement.

[2 marks]

Statement	Communication Device
(i) A device that connects the network to the Internet Service Provider.	
(ii) A device that holds Internet Protocol (IP) address and sends data to the devices according to its	

- (b) Explain **one (1)** drawback of the network.

[1 mark]

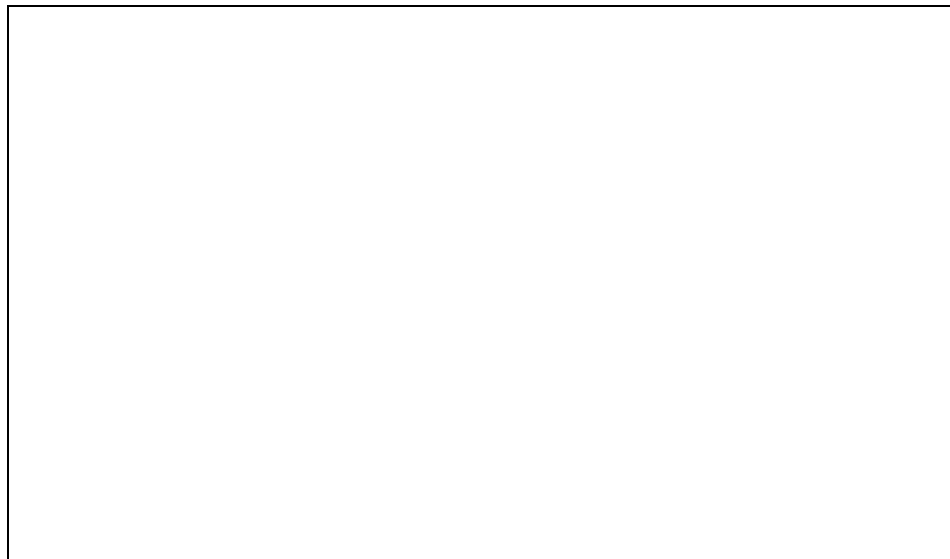
- (c) Rina plans to setup an office with 5 computers, 1 server, 2 printers and 1 scanner. she also wants to have an access to the Internet.

- i). Suggest the most suitable network architecture that she might use.

[1 mark]

- ii). Draw the network architecture suggested in 3.c.i.

[3 marks]



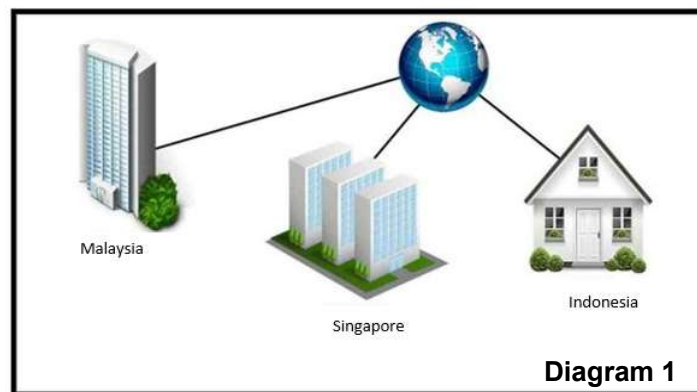
- (d) Fahmi plans to hold a network soccer game competition with his three roommates during the weekend. Each of them will use their own laptop to participate in the competition.

i). Suggest the most suitable type of network architecture for them.

[1 mark]

ii). Justify your answer given in 3.d.i.

[1 mark]



- (e) The network is usually classified into two categories. Describe the classification of the network shown in **Diagram 1**.

[1 mark]

- (f) Who has the ownership of LAN?

[1 mark]

- (g) Identify the most suitable classification of network based on the description given.

[4 marks]

Description	Classification of Network
i) All computers at the cyber cafe owned by Mr. Amir are connected with each other	
ii) Alia is a postgraduate student at University of Technology, Malaysia. She needs to prepare a proposal for her research. She accesses digital research from the library of Ohio University, USA	
iii) The entire computers at Aprilbank branches in Malaysia are connected to their headquarters in Kuala Lumpur	
iv) The employees of Pahang Matriculation College share their data in an office	

4.

- (a) Internet is a worldwide collection of networks that connect millions of businesses, government agencies, educational institution and individuals.

- i). Give **one (1)** negative impact of internet to the young generation.

[1 mark]

- ii). State **one (1)** similarity between intranet and extranet compared to internet.

[2 marks]

- iii). If X is a subset of the information accessible from an organization's intranet, explain **one (1)** advantage of X.

[2 marks]

- (b) Wired broadband in **Figure 2** refers to a connection that uses a standard telephone line. Answer all questions based on the network from **Figure 2**.

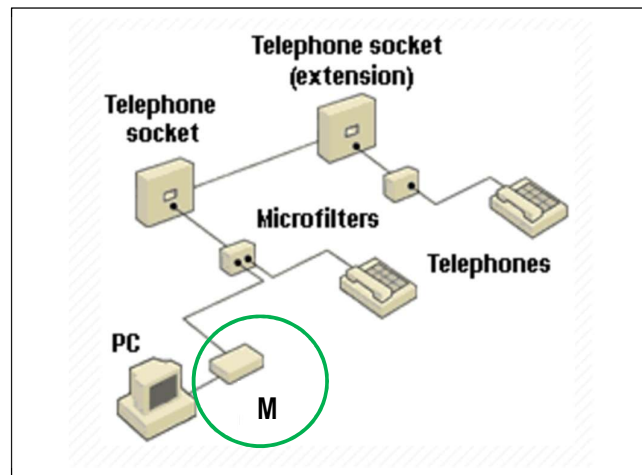


Figure 2

- i). Describe **M**.

[2 marks]

- ii). Explain **one (1)** drawback of broadband internet connection.

[2 marks]

- (c) An Internet Protocol addresses are also referred to as IP numbers and Internet addresses

- i). Give **one (1)** difference between two versions of Internet Protocol.

[2 marks]

- ii). Fill in the table below based on the address of webpage given

<https://www.nature.org.au/what-we-do>

[2 marks]

Domain name	
Purpose of generic top-level domain	

5.

- (a) As with any powerful technology, computers can be used for both good and bad intentions. Identify the area of computer ethics based on the given scenario.

[2 marks]

Scenario	Area of computer ethics
i) Nancy has old printer that cannot be used anymore. She thinking of sending it to an e-waste company.	
ii) Digital manipulation can be used to misquote individuals, create false or misleading photographs	

- (b) Netiquette is set of codes that specify how the users should behave while using the Internet. Identify and state the rules of netiquette that must be followed.

[2 marks]

Scenario	The rules of netiquette that must be followed
i) Nadia feel sad, she used to express emotion while chatting online.	
ii) For the majority of participants, online communication is straight forward. Sometimes unintended meanings are conveyed	

6.

- (a) Based on the statement below, state the phases of the System Development Life Cycle.

[5 marks]

Statement	Phase
i). Sketching the idea using a storyboard to view the flow of the system.	
ii). Said has interviewed the clients regarding details of the website that he wants to build.	
iii). The purpose of performance monitoring is to determine whether the system is inefficient or unstable at any point.	
iv). During the meeting, steering committee approve the request of improvement to the system	
v). Organizations must ensure that users are trained properly on the new system.	

- (b) Give **two (2)** major activities for the last phase in SDLC.

[2 marks]

- (c) State **one (1)** method train user for showing users exactly how they will use new hardware and software in system.

[1 mark]

END OF QUESTION