JASPER WILLIAMS HIGH SCHOOL
YEAR 12 ANNUAL EXAMINATION 2020
COMPUTER STUDIES

Time Allowed: 3 Hours
(An extra 10 minutes is allowed for reading this paper.)

INSTRUCTIONS

1. Write your **Index Number** on the front page of the **Answer Booklet.**

2. Write **all** your answers in the **Answer Booklet** provided.

3. If you use extra sheets of paper, be sure to show clearly the question number(s) being answered and tie each sheet in your **Answer Booklet** at the appropriate places. Ensure that your **Index Number** is written on the extra sheets.

4. Answer **all** the questions with a blue or black ballpoint pen or ink pen. Do **not** use **red** ink pen. You may use a pencil **only** for drawing.

5. You may use a calculator, provided it is silent, battery-operated and non-programmable.

6. There are **three** sections in this paper. **Sections A and B are compulsory. Note the options in Section C.**

SUMMARY OF QUESTIONS

SECTION	QUESTION TYPE	MARK	SUGGESTED TIME
A	There are **twenty** multiple choice questions. **All the questions are compulsory.**	20	36 minutes
B	There are **six** short answer questions. **All the questions are compulsory.**	60	108 minutes
C	There are **four** essay questions. **Answer any two questions.**	20	36 minutes
	TOTAL	**100**	180 minutes

SECTION A MULTIPLE-CHOICE QUESTIONS [20 marks]

The multiple-choice questions are **all** compulsory. Each question is worth **1** mark.

1. The fastest growing activity on the internet is

   A. Blogging.
   B. Emailing.

   C. E-commerce.
   D. Social networking.

2. Which of the following web technologies is a website that allows users to add, modify and delete content?

   A. Web Utilities
   B. Podcasting

   C. Wikis
   D. Blogs

3. Which of the following licenses is tied to the lifecycle of the hardware and typically cannot be transferred to other hardware.

   A. OEM.
   B. Copyright.

   C. EULA.
   D. Vender Lock-in.

4. Android allows its users to develop and expand it but also requires them to be locked into the Play Store to download apps. This is an example of which type of software?

   A. Free.
   B. Proprietary.

   C. Open Source.
   D. Closed Source.

5. Management productivity can be improved with the use of computers because it allows for the provision of three of the following. Which choice is **incorrect**?

   A. Timely information.
   B. Meaningful information.

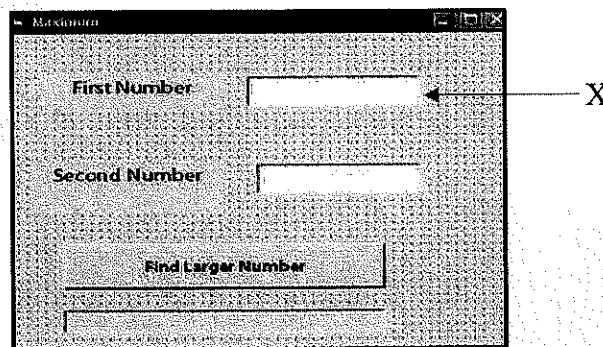   C. Correct information.
   D. Sufficient information.

6. Which of these criminals specialize in stealing, trading, and using stolen credit cards over the internet?

   A. Hackers.
   B. Crackers.

   C. Carders.
   D. Traders.

7. What acts as a security buffer between the company's private network and all external networks?

A. Firewall.　　　　　　　　　　　C. Antivirus.
B. Encryption.　　　　　　　　　　D. Password.

8. Which of the following has led to a rapid escalation in the generation of solid waste?

A. Recycling of e-waste.　　　　　　C. Short product life cycle.
B. Increasing price of electronics.　　D. Use of gold in electronics.

9. The process where received packets through network are rearranged in the original order is called

A. Protocol.　　　　　　　　　　　C. Packetization.
B. Specification.　　　　　　　　　D. Identification.

10. The physical and logical arrangements of a network is known as

A. Routing.　　　　　　　　　　　C. Networking.
B. Topology.　　　　　　　　　　　D. Communication.

11. In which networking strategy do nodes have equal processing capabilities and can act as both the client and a server.

A. Terminal　　　　　　　　　　　C. Client/ Server
B. Peer to Peer　　　　　　　　　　D. Distributed Processing

12. What is the main reason some large organizations have to implement a hybrid network?

A. The need to reduce the cost therefore use hybrid network which is cheap to implement
B. They have lots of smaller networks based on differing topologies which are then interconnected.
C. Hybrid structure is based on different topologies and is easy to maintain and manage.
D. So, all the offices can process their information any time convenient to the head office.

13. Which of the following is a private network that connects more than one organisation?

A. Extranet　　　　　　　　　　　C. Intranet
B. Internet　　　　　　　　　　　D. Ethernet

14. The visibility of a variable is referred to as its scope. _____variables, also called class-level variables, are accessible from all procedures of a form.

    A. Local
    B. Scope

    C. Block level
    D. Module-level

15. Which control can be used as an alternative to a button on the form?

    A. Label.
    B. Menu Strip.

    C. Checkbox.
    D. Radio Button.

16. Which of the following computer professional creates software for an organization or its external clients and customers.

    A. Software Developer.
    B. Computer Programmers.

    C. Software Designer.
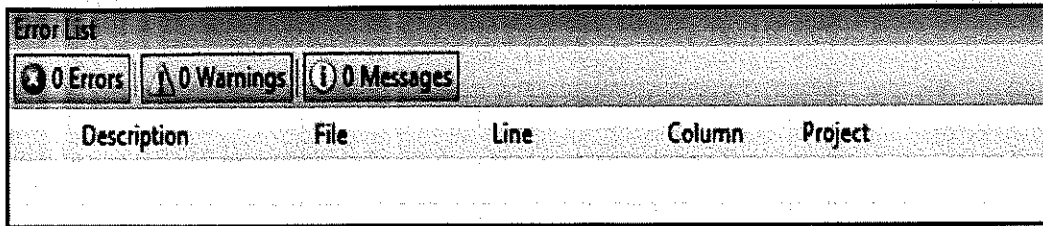   D. Helpdesk Support.

Use the given Visual Basic application interface to answer **question 17.**

Source: Google Image Search

17. The control labelled x is called a _____.

    A. Label.
    B. Button.

    C. Textbox.
    D. Masked Textbox.

18. What does the window given below indicates in VB.Net programming?

Error List					
0 Errors	0 Warnings	0 Messages			
Description	File	Line	Column	Project	

Source: Year 12 Computer Textbook, 2019

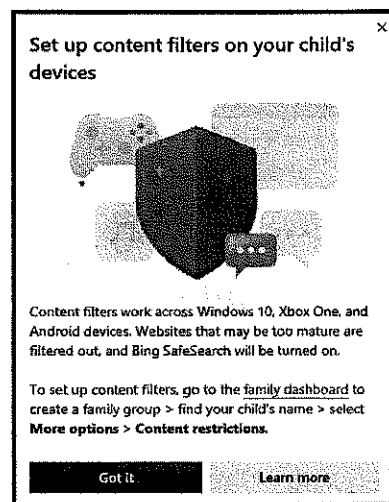   A. Debugging   C. Syntax Error
    B. Logic Error   D. Clean Compile

19. Which of these is not a major type of cloud computing usage?

    A. Hardware as a Service   C. Software as a Service
    B. Platform as a Service   D. Infrastructure as a Service

20. Which tier level is the best for maximum uptime?

    A. Tier I.   C. Tier II.
    B. three 9's.   D. four 9's.

SECTION B   SHORT ANSWER QUESTIONS   [60 marks]

The six questions in this section are **all** compulsory. Each question is worth **10** marks.

**QUESTION 1   THE INTERNET AND THE WORLD WIDE WEB   (10 marks)
PROPRIETY AND FREE AND OPEN SOURCE SOFTWARE**

(a)   Define **World Wide Web**.   (1 mark)

(b)   Refer to the statement given below to answer questions (i) and (ii).

Source: Microsoft Edge/ Settings

(i)   Identify the **web utility** shown in the diagram given above.   (1 mark)

(ii)   State **one** reason why this web utility is useful for parents.   (1 mark)

(c)   State **one positive** contribution of cyber-world towards the education sector.   (1 mark)

(d)   State **one** search engine used by Internet users.   (1 mark)

(e)   Connectivity plays a major role when it comes to information sharing.
Explain Internet of Things (IoT).   (2 marks)

(f)   EULA is one type of licensing available for software users.
Write the long form of EULA.   (1 mark)

(g) Proprietary software is owned by an individual or a company.
Give **one** example of proprietary software. **(1 mark)**

(h) State **one** positive impact of Open Source Software on ICT. **(1 mark)**

QUESTION 2   **COMPUTERS IN SOCIETY**   **(10 marks)**

(a) The computerization of society has resulted in an information society.
Explain this statement. **(2 marks)**

(b) List **two** ways how outsiders can steal information in a database. **(2 marks)**

(c) State the purpose of a **Turnitin** software. **(1 mark)**

(d) Refer to the statement given below to answer questions (i) and (ii).

> Ethical treatment is critically important to us all and we are all entitled to ethical treatment. This includes the right to keep personal information, such as credit ratings and medical histories, from getting into unauthorized hands. The four primary computer ethical issues include: *Privacy, Property, Accuracy and Access.*

Source: Year 12 Computer Studies Textbook, 2019

    (i) What does the ethical issue **property** relate to? **(1 mark)**

    (ii) Name **one** policy that protects individual's property. **(1 mark)**

(e) Differentiate between **hackers** and **crackers**. **(2 marks)**

(f) Equipment can be replaced however a company's data may be irreplaceable.
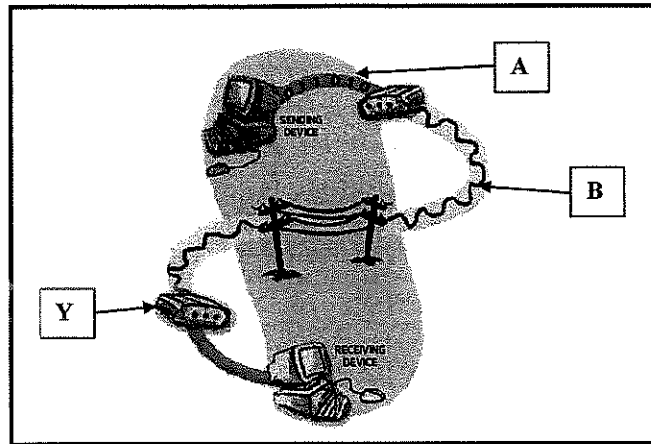What can be done to prevent data loss? **(1 mark)**

Turn Over

QUESTION 3 **COMMUNICATION AND NETWORKS** **(10 marks)**

(a) Use the figure given to answer questions that follows:

Source: Google Image Search

(i) State the function of the device labelled Y. **(1 mark)**

(ii) Identify the type of signals labelled as A and B. **(1 mark)**

(iii) List the element of the communication channel not shown in the diagram. **(1 mark)**

(b) Complete the table in your answer booklet by describing the tree topology and drawing the bus topology.

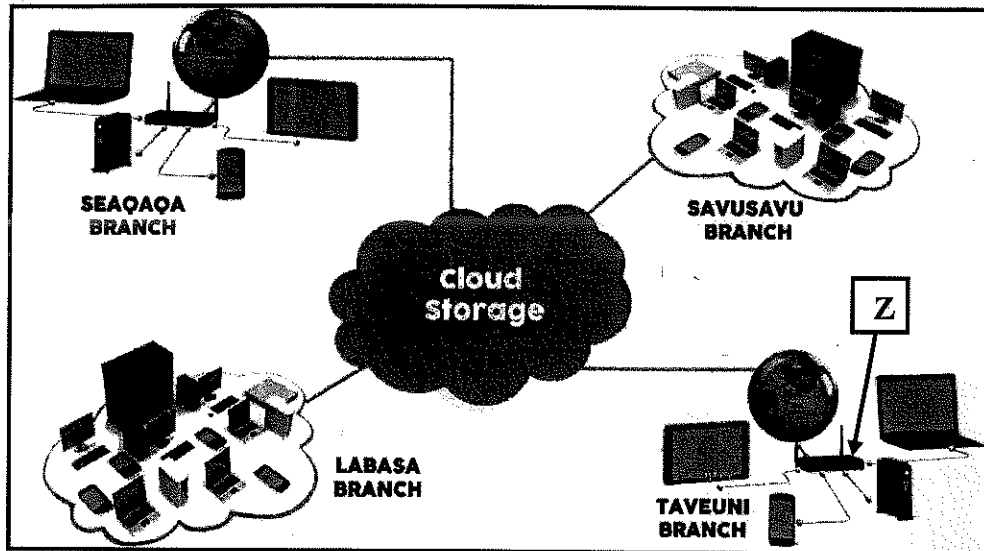| Topologies	Description	Diagram
Tree	(i) **(2 marks)**	
Bus	Each device is connected to a common cable called a bus.	(ii) **(1 mark)**

(c) Asynchronous and synchronous transmission are the two ways of data transfer. Define **synchronous transmission.** **(1 mark)**

(d) Network security becomes a concern as connectivity grows. Describe how **VPN** can be used to secure a network. **(2 marks)**

(e) State **one** advantage of distributed processing network. **(1 mark)**

QUESTION 4   **COMMUNICATION AND NETWORKS**   **(10 marks)**
                    VISUAL BASIC.NET PROGRAMMING

(a)   The diagram given below shows the network used by Joji's Web Services. Refer to the diagram
       to answer the following questions.

Source: Google Image Search

(i)   Which **network type** is suitable to connect Labasa and Seaqaqa branch?   **(1 mark)**

(ii)   List **two** characteristics of the network type stated in part (i).   **(2 marks)**

(iii)   Name the communication channel needed to transfer data from
        Seaqaqa to Savusavu branch.   **(1 mark)**

(iv)   State **one** benefit of Joji's Web Services using cloud storage.   **(1 mark)**

(v)   State the function of device labelled Z?   **(1 mark)**

(b)   The Vanua Power Authority charges customers the following rates for the units of electricity
       consumed:

       > **0.45c/unit** for the **first 34 units** of electricity consumed
       > **0.85c/unit** for **each extra unit** of electricity consumed

       Draw a flowchart that will enable the user to do the following:

       • Enter customer's name and address.
       • Enter units of electricity consumed by the customer.
       • Calculate Customer's total bill.
       • Display the customer name, address, No. of units consumed and the total bill.
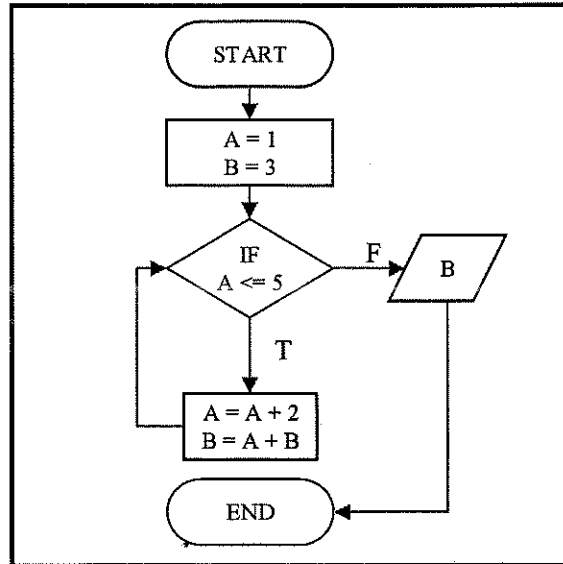
       (4 marks)

QUESTION 5   **VISUAL BASIC.NET PROGRAMMING**   **(10 marks)**

(a)   Refer to the program flow given below and answer questions that follow.

Source: Personal Collection

(i)   Which Do/Loop structure is used in the program flowchart?   **(1 mark)**

(ii)   How many times will the program iterate before it terminates?   **(1 mark)**

(iii)   What will be the output of the program?   **(1 mark)**

(b)   Differentiate between a **pre-test** and a **post-test** in a Do/Loop.   **(2 marks)**

(c)   Study the VB.Net programming code for **btnShow** and answer the question below.

```
Private Sub btnShow_Click(ByVal sender As System.Object, _ ByVal e As _
System.EventArgs) Handles btnShow.Click
    Dim intNum As Integer
    For intNum = 4 To 2 Step -2
    lblShow.Text = lblShow.Text & vbNewLine & "*"
    Next intNum
End Sub
```

Source: Personal Collection

(i)   Identify **one** variable used in the program.   **(1 mark)**

(ii)   What will be the output of the program when **btnShow** is clicked?   **(2 marks)**

(d)   List any **two** types of errors that can occur in a Visual Basic (VB) project.   **(2 marks)**

QUESTION 6 **MANAGING AND MAINTAINING DATA** **(10 marks)**
ENIVIRONMENTAL ISSUES, CLIMATE CHANGE
AND SAFE PRACTICES

(a) Define the term **Virtual Data Centre**. **(1 mark)**

(b) Differentiate between **Public Cloud** and **Hybrid Cloud models** in relation
to data storage. **(2 marks)**

(c) Two types of private clouds are **On-premise private cloud** and
Externally-hosted private cloud.
Describe Externally-hosted private cloud. **(2 marks)**

(d) Differentiate between **dedicated** and **managed hosting** service model
of data centre. **(2 marks)**

(e) Electronic waste is currently the most rapidly-growing type of waste.
Explain how **e-waste** harms the environment? **(2 marks)**

(f) One of the ways technology harms the environment is by consuming resources.
State **how** technology consumes resources. **(1 mark)**

SECTION C ESSAY QUESTIONS [20 marks]

There are **four** questions in the section. Answer **any two** questions. Write an essay of about **180-200** words to answer each question.

QUESTION 1 COMPUTERS IN SOCIETY (10 marks)

Due to the high increase in computer crime, computer security is becoming the main concern of all organisation.

With reference to the above statement, discuss:

- **three** types of computer crime (3 marks)

- **two** reasons why computer crime is on the increase (2 marks)

- **two** reasons why it is difficult to detect computer crime (2 marks)

- **two** security measures that can be used to prevent computer crime (2 marks)

QUESTION 2 COMMUNICATION AND NETWORKS (10 marks)

LAN, WLAN, MAN, WAN and PAN are the five types of networks.

With reference to the above statement, discuss the following:

- any **four** types of networks (4 marks)

- use diagrams to support the discussion (2 marks)

- **two** advantages of LAN (2 marks)

- **one** disadvantage of WAN (1 mark)

SECTION C (continued)

QUESTION 3 **VISUAL BASIC.NET PROGRAMMING** **(10 marks)**

Hibiscus Construction Works is using a manual system to calculate wages for their works. You have been hired as a Computer Programmer to create an electronic payroll system to replace the current manual system.

The workers are paid $4.20 per hour for the first 40 hours and "time and half" for all hours worked in excess of 40 hours for the week from Monday to Saturday.

As a programmer you are required to use the software development steps to carry out the job with a user-friendly interface. The program should output worker's Name, Number of hours worked, Gross Pay and Net Pay after 8% FNPF Deduction.

With reference to the above guidelines, discuss

- the **first four** Software Development phases. **(6 marks)**

- sketch a **user-friendly interface**. **(3 marks)**

QUESTION 4 **MANAGING AND MAINTAINING DATA** **(10 marks)**

Data is considered the most valuable asset to an organization that must be well protected and at the same time easily and safely accessible.

With reference to the above statement, discuss

- what is cloud storage. **(1 mark)**

- **three** cloud computing service models: IaaS, PaaS and SaaS. **(3 marks)**

- **three** advantages of cloud storage. **(3 marks)**

- **two** disadvantages of cloud storage. **(2 marks)**

THE END