

YEAR 12 TRIAL EXAMINATION 2020

COMPUTER STUDIES

Time Allowed: 3 hours

INSTRUCTIONS

- Write your **Index Number** on the front page and inside the back flap of the **Answer Booklet**.
- Write **all** your answers in the **Answer Booklet** provided.
- If you use extra sheets of paper, be sure to show clearly the question number(s) being answered and to tie each sheet in your **Answer Booklet** at the appropriate places. Ensure that your **Index Number** is written on the extra sheets.
- 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.
- You may use a calculator, provided it is silent, battery-operated and non-programmable.
- 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

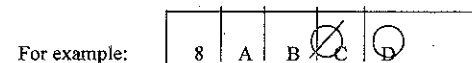
SECTION A MULTIPLE-CHOICE QUESTIONS

[20 marks]

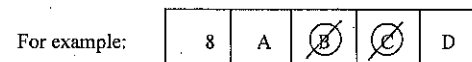
The multiple-choice questions are **all** compulsory. Each question is worth 1 mark.

INSTRUCTIONS FOR MULTIPLE-CHOICE QUESTIONS

- In your **Answer Booklet**, **circle** the letter which represents the **best** answer. If you **change your mind**, put a line through your first choice and circle the letter of your next choice.



- If you **change your mind** again and like your first answer better, put a line through your second circle and tick (✓) your first answer.



- No mark** will be given if you circle more than one letter for a question.

- A web page address usually begins with the letters "http" which signifies a form of

A. internet.	C. digital signal process.
B. protocol.	D. modem and configuration.
- Which of the following web technologies is a website that allows users to add, modify and delete content?

A. Web Utilities	C. Wikis
B. Podcasting	D. Blogs
- A group of software that anyone can inspect, modify and enhance is

A. Free.	C. Open Source.
B. Proprietary.	D. Closed Source.

3.

4. Which of the following is an example of **Free Software**?
- A. Windows 7
B. Microsoft Office
C. Photoshop
D. Mozilla Firefox
5. A technique used by publishers to protect their intellectual property where they are given authority to control use and distribution of their work is
- A. Piracy.
B. Copyright.
C. Software licensing.
D. Digital Rights Management.
6. An ethical issue where some other person's work and ideas are presented as yours without giving credit is
- A. data manipulation.
B. browser hijacking.
C. plagiarism.
D. privacy.
7. Which of the following is the **positive** impact of computerization of society?
- A. Techno stress
B. New products and services
C. Exposure to unwanted activities
D. Reduction in social interaction at work
8. A collection of Zombie infected Personal Computers (PCs) is called a
- A. robot network.
B. zombie network.
C. bot drive network.
D. infected PC network.
9. An attempt to slow down or stop a computer system or network by flooding the system with requests for information is called a
- A. virus.
B. worm.
C. trojan horse.
D. denial of service attack.
10. Another name given to **Techno trash** is
- A. t-waste.
B. e-waste.
C. electronic trash.
D. technology trash.

4.

11. Which of the following is the most valuable recyclable component of a circuit board?
- A. Gold
B. Silver
C. Copper
D. Platinum
12. Sending and receiving device, connection device and communication channel are three of the four elements of communication system. Which of the following is the fourth element?
- A. Modem
B. Computer
C. Twisted pair cable
D. Data transmission specification
13. The capacity of the communication channel that determines the volume of data that can be transmitted in a given time is called
- A. transmission.
B. packetization.
C. bandwidth.
D. capacity.
14. Which of the following network device is typically used to link together two different parts of a LAN?
- A. Bridge
B. Server
C. Router
D. Hub
15. Which of the following is the **last** step when planning a good Visual Basic program?
- A. Write Visual Basic code
B. Design the user interface
C. Plan the properties
D. Plan the solution
16. Which of the following control structures is used to execute a block of code, a specified number of times?
- A. Do...Until
B. For...Next
C. Do...While
D. If...Then...Else

Turn Over

17. A programmer wants to declare an integer variable **product** while programming. Which of the following is the correct form of the variable declaration?
- Dim Integer: **product**
 - Dim **product**: Integer
 - Dim Integer As **product**
 - Dim **product** As Integer
18. Which of the following is the disadvantage of cloud storage services?
- Data Ownership
 - Protection
 - Sharing
 - Cost
19. Which of the following differences is one way to categorize Tiers of a Data Centre?
- Hours of interruption per year
 - Ownership of the company
 - Storage capacity
 - Location
20. A distribution model in which applications are hosted by a service provider and made available to users is
- Cloud storage.
 - Platform-as-a-Service.
 - Software-as-a-Service.
 - Infrastructure-as-a-Service.

Turn Over

SECTION B SHORT ANSWER QUESTIONS

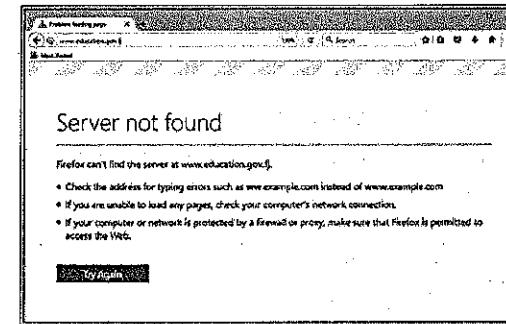
[60 marks]

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

QUESTION 1 THE INTERNET AND THE WORLD WIDE WEB PROPRIETY AND FREE AND OPEN SOURCE SOFTWARE

(10 marks)

- (a) Study the picture below and answer the questions that follow.



Source: *Personal Collection*

- Identify the browser which is open in the above diagram. (1 mark)
 - State one reason why this requested page is being displayed. (1 mark)
 - Name the URL, that user wants to access. (1 mark)
 - Identify the domain name from the URL in part (iii). (1 mark)
- (b) Connectivity plays a major role when it comes to information sharing. Explain the function of **Really Simple Syndication Feeds (RSS)**. (2 marks)
- (c) State the job description of a **web administrator**. (1 mark)
- (d) **Site License** is one type of licensing available for software users. Define **Site License**. (1 mark)
- (f) Explain one advantage of Free Software and state an example of Free Software. (2 marks)

QUESTION 2 COMPUTERS IN SOCIETY (10 marks)

- (a) Define computer ethics (1 mark)
- (b) Describe two primary computer ethical issues (2 marks)
- (c) State two ethical questions that can be raised about computers and their uses (2 marks)
- (d) Differentiate between **hackers** and **crackers**. (2 marks)
- (e) Facebook is one of the most used social networking sites in Fiji. Discuss how social networking like facebook can break individual privacy. (3 marks)

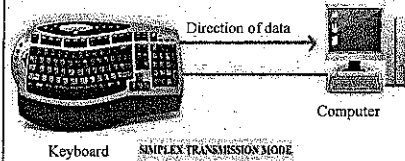
QUESTION 3 COMMUNICATION AND NETWORKS (10 marks)

- (a) A communication system is made of four elements. State **one** example of a sending and receiving device. (1 mark)
- (b) State **one** advantage of using fiber-optic cables over twisted pair cables in a network. (1 mark)
- (c) Modems are used to convert signals from analog to digital and vice versa. Explain **one** reason why signals need to be converted. (2 marks)
- (d) Differentiate between LAN and WAN in relation to connectivity range. (2 marks)
- (e) Explain **one** purpose of a switch in a network setup. (2 marks)
- (f) Transmission Control Protocol/ Internet Protocol (TCP/IP) is a two layer protocol used in data transmission. Name **two** processes involved in TCP/IP. (2 marks)

SECTION B (continued)

QUESTION 4 COMMUNICATION AND NETWORKS (10 marks)

- (a) Use the table below to answer the questions that follow.

Transmission Mode	Description	Diagram
Simplex	(i)	
Full Duplex	It allows simultaneous message exchange in both direction.	(ii)

- (i) Describe the activities marked (i) in the **Answer Booklet**. (2 marks)
- (ii) Draw a diagram marked (ii) in the **Answer Booklet**. (1 mark)
- (b) Network security becomes a concern as connectivity grows. Describe how a **proxy server** can be used as network security. (2 marks)
- (c) There are five types of network, which are distinguished from each other by the geographical area it covers. Discuss **Personal Area Network (PAN)**. (3 marks)
- (d) Proprietary software are owned by an individual or a company. List **two** examples of proprietary software. (2 marks)

QUESTION 5 VISUAL BASIC.NET PROGRAMMING (10 marks)

- (a) When a programmer starts executing a program, the first step is called compiling. Define **clean compile**? (1 mark)
- (b) Study the VB.Net programming code for **btnDisplay** and answer the questions below.

```
Private Sub btnDisplay_Click(ByVal sender As System.Object, ByVal e As
System.EventArgs) Handles btnDisplay.Click
    Dim num As Integer
    For num = 0 To 2
        lblShow.Text = lblShow.Text & vbNewLine & "Year 12"
    Next
End Sub
```

- (i) Identify **one** variable used in the program. (1 mark)
- (ii) What will be the output of the program when **btnDisplay** is clicked? (2 marks)
- (c) Study the VB.Net programming code for **btnCheck** and answer the question below.

```
Private Sub btnCheck_Click(ByVal sender As System.Object, ByVal e As
System.EventArgs) Handles btnCheck.Click

Dim Total As Integer
Dim English As Integer
Total = Integer.Parse(txtTotal.Text)
English = Integer.Parse(txtEnglish.Text)

If Total >= 300 And English > =60 Then
    lblDisplay.Text = "Congratulations! Scholarship Granted"
Else
    lblDisplay.Text = "Sorry you do not qualify for scholarship"
End If
End Sub
```

What will be the output of the program if Total is 300 and English is 65? (2 marks)

Turn Over

SECTION B (continued)

- (d) The Principal of Pride College has hired you as a computer programmer to develop a program that will help the staff to analyse examination results and provide feedback on students' performance. Use the table below as the grading criteria.

Total Mark	Grade
340 - 400	A
270 - 339	B
200 - 269	C
0 - 199	D

Draw a **flow chart** for the program in the **Answer Booklet** that will enable the following:

- Enter the name of the student;
- Enter the students' total mark;
- Use IF THEN ELSE structure to determine the grade of the student;
- Display Student Name, Total Mark, and Grade for each student. (4 marks)

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

- (a) Define the terms:
- (i) Data center (1 mark)
- (ii) Cloud computing (1 mark)
- (b) IaaS and PaaS are cloud computing service models. Differentiate between **IaaS** and **PaaS** in relation to the type of service provided. (2 marks)
- (c) There are many types of facilities and service modes of data center. Describe **In-house data center**. (2 marks)
- (d) List **two** ways in which technology can harm the environment. (2 marks)
- (e) Explain **one** way in which Information and Communication Technology (ICT) can help to prevent climate change. (2 marks)

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.

Please note that the allocation of marks for the content has been included for each question and 1 mark is allocated to the structure of the essay. Each question is worth **10** marks.

QUESTION 1 THE INTERNET AND THE WORLD WIDE WEB**(10 marks)**

With the creation of the internet, the lifestyles of people around the globe have shown a rapid and significant change.

With reference to the above statement, discuss

- What is social networking and give one example of social networking sites **(2 marks)**
- **two** advantages of social networking **(2 marks)**
- **two** disadvantages of social networking **(2 marks)**
- **three** effects of cyber- culture on people's lifestyle **(3 marks)**

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

In recent years, the massive use of networks and internet has created a new avenue for computer viruses to spread at a rapid rate.

With reference to the above statement, discuss

- what computer viruses are and give one example **(2 marks)**
- **three** ways in which computer viruses are activated **(3 marks)**
- **two** harmful effects of computer viruses **(2 marks)**
- **two** ways of protecting computers for viruses. **(2 marks)**

SECTION C (continued)**QUESTION 3 COMMUNICATION AND NETWORKS****(10 marks)**

A network topology describes how network is configured and arranged.

With reference to the above statement, discuss

- **four** network topologies **(4 marks)**
 - use diagrams to support the discussion **(2 marks)**
- **one** advantage of any **two** network topologies **(2 marks)**
- **one** disadvantage of any network topology **(1 mark)**

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

Cloud computing adaptation is continuing apace, across a host of industry sectors, as more organisations recognise the benefits it can potentially offer.

With reference to the above statement, discuss **Public, Private and Hybrid** cloud services using the following guidelines:

- definition **(3 marks)**
- **one** advantage **(3 marks)**
- **one** disadvantage **(3 marks)**

THE END