# BA PROVINCIAL FREEBIRD INSTITUTE

# 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 one question.** | 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

1.  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.

For example:

| 8 | A | Ⓑ | Ⓒ | D |
|---|---|---|---|---|

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

For example:

| 8 | A | Ⓑ✓ | Ⓓ | D |
|---|---|---|---|---|

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

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

    A. internet.
    B. protocol.

    C. digital signal process.
    D. modem and configuration.

2.  A browser is a program that allows users

    A. transfer messages and files through internet.
    B. search for relevant information on the www.
    C. to access and view web pages on the internet.
    D. exchange real-time messages or files with another online user.

3.  A group of software for which the source code is readily available to users but under a copyright is

    A. Free.
    B. Proprietary.

    C. Open Source.
    D. Closed Source.

4.  Which one of the following is the negative impact of proprietary software?

    A. Well documented.
    B. Issues with customization.
    C. Support is organised and provided by the vendor.
    D. Single product that is verified and works with all components of application.

5.  A program that comes into a computer system masked as something else is

    A. Viruses.
    B. Zombies.
    C. Web Bugs.
    D. Trojan Horses.

6.  Which of the following is a **negative** impact of computerization of society?

    A. New jobs and job efficiency.
    B. Increase in quality of products.
    C. Exposure to unwanted activities.
    D. Overall increase in quality of living.

7.  The process of converting readable data into unreadable form is called

    A. encryption.
    B. decryption.
    C. copyright.
    D. copy protection.

8.  Another name given to **e-waste** is

    A. t-waste.
    B. Techno trash.
    C. electronic trash.
    D. technology trash.

9.  What is the key difference between Bluetooth, Wi-Fi and WiMax channels which forms wireless communication?

    A. Cost.
    B. Distance.
    C. Size.
    D. Technology.

10. Which of the following is considered a line of sight communication medium?

    A. Infrared.
    B. Bluetooth.
    C. Broadcast radio.
    D. Satellite communication.

*Turn Over*

11. The speed with which a modem transmits data is referred as

    A. Digital velocity.                C. Dynamic rate.
    B. Modular rating.              D. Transfer rate.

12. Which of the following network device is typically used to link together two different parts of a LAN?

    A. Bridge.                     C. Hub.
    B. Server.                    D. Router.

13. Which of the following networks forms an upside-down tree where the root device is usually the most powerful?

    A. Star.                      C. Mesh.
    B. Hybrid.                   D. Hierarchical.

14. Which of the following programming techniques represents a program in diagrammatic form?

    A. Flow chart.               C. Program chart.
    B. Pseudocode.             D. Logical structures.

15. The data types in Visual Basic are referred to as

    A. Classes.                   C. Variables.
    B. Objects.                  D. Identifiers.

Refer to the code for the Exit button given below to answer **question 16.**

```
Private Sub btnExit_Click(ByVal sender As System.Object, ByVal e as _
System.EventArgs)  Handles btnExit.Click

Me.Close()

End Sub
```

16. What is the btnExit part of the event procedure?

    A. Event.                    C. Event procedure.
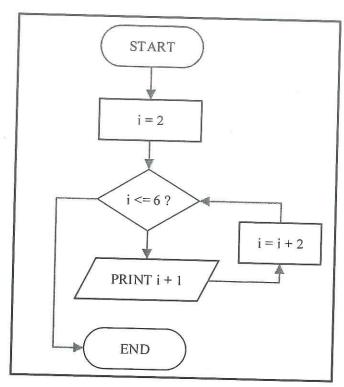    B. Procedure name.           D. Header.

17. There are four radio buttons in a group box. The maximum number that can have their Checked property set to True at a time is:

A. One.

B. Two.

C. Three.

D. Four.

Study the program given below and answer **questions 18**.



*Source: https://www.tenouk.com*

18. The above diagram shows a structured program called

A. Sequence structure.

B. Selection structure.

C. Decision structure.

D. Repetition structure.

19. Which of the following Tiers of a Data Centre has N+1 redundancy?

A. Tier I.

B. Tier II.

C. Tier III.

D. Tier IV.

20. Which of these companies is not a leader in cloud computing?

A. Google.

B. Amazon.

C. Microsoft.

D. Blackboard.

*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    (10 marks)
PROPRIETY AND FREE AND OPEN SOURCE SOFTWARE

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

> Cyber - culture is a set of social expectations, etiquette, history and language used by a collection of people active on the World Wide Web.

*Source: Year 12 Computer Studies Textbook, 2019*

(i)    What is **one negative** effect of cyber culture in the lives of people?    (1 mark)

(ii)   Discuss **two positive** contribution of cyber-world towards the
       business organisations.    (2 marks)

(b)    What is **e-commerce**.    (1 mark)

(c)    State the function of a **search engine**.    (1 mark)

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

(e)    Proprietary software distribution is mainly **object only**. What does that mean?    (1 mark)

(f)    List **two** ways in which proprietary software's are protected.    (2 marks)

## QUESTION 2        COMPUTERS IN SOCIETY      (10 marks)

(a)    Define **information society**.        **(1 mark)**

(b)    State **one** way in which computers can be protected from viruses.      **(1 mark)**

(c)    There are other hazards to computer systems and data besides criminals. Identify **one** of these hazards.      **(1 mark)**

(d)    Study the report given below and answer the questions that follow.

> All Service Computer Company has a total of 100 workers and 70 computers. After monitoring the monthly evaluation report for the past 5 months, the project manager has found that some employees are using computers and internet facilities for personal use.

     (i)    Suggest **one** measure that could prevent the employees from abusing computer and internet facilities.      **(1 mark)**

     (ii)    Explain an important role of a project manager.      **(1 mark)**

(e)    Use the diagrams given below to answer the questions that follow.
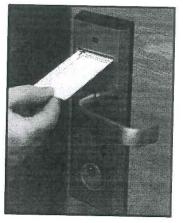
**Diagram A**

**Diagram B**

*Source: Google Image Search*

     (i)    Which **principal measure** is used in both the diagrams above to secure computing resources?      **(1 mark)**

     (ii)    Name the security measure used in Diagram A and Diagram B.      **(1 mark)**

     (iii)    State the **difference** between the security measures used in **Diagram A** and **Diagram B**.      **(2 marks)**

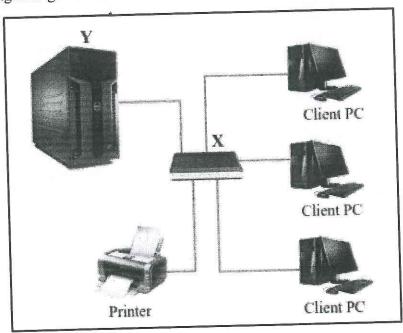     (iv)    Identify **one building** where these security measures are mostly used.      **(1 mark)**

*Turn Over*

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

(a)     Modems are used to convert signals from analog to digital and vice versa.
        Explain **one** reason why signals need to be converted.          **(2 marks)**

(b)     The standard protocol for the internet is TCP/IP (transmission control protocol/Internet
        protocol). Explain the **process** carried out by the **TCP layer**.          **(2 marks)**

(c)     State the function of **DNS**.          **(1 mark)**

(d)     Explain how data is transmitted in a **half-duplex** channel using diagram.          **(2 marks)**

(e)     Differentiate between **LAN** and **WAN** in relation to connectivity range.          **(2 marks)**

(f)     State **one** advantage of computers connected to a network.          **(1 mark)**

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

(a)     Use the diagrams given below to answer the questions that follow.



*Source: FY12CE 2016 Paper*

(i)     Name the network topology model used in the diagram.          **(1 mark)**

(ii)    Identify the devices labelled **X** and **Y**.          **(2 marks)**

(iii)   Describe how the resources in the network is shared.          **(2 marks)**

(b)    The Principal of Savu 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.

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

- Enter the name of the student;
- Use **for...next** statement to enter marks for five subjects (marks out of 100);
- Calculate the total marks;
- Use **If .....Then ....Else** structure to determine the grade of the student;
- Display Student Name, Total Marks, and Grade for each student.

Use the table below as the grading criteria.

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

(5 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)