Stanmore Secondary School

September Controlled Tests 2019

Information Technology

Grade 11

Time: 1 Hour

Max Marks: 50

Examiner: Mr S. Naidoo

Moderator: Mr AF Gabriel

Instructions

1. Answer all questions.
2. Write neatly and legibly.
3. The mark allocation generally gives an indication of the number of facts required in your answer.
4. This question paper consists of 3 pages with 3 questions

Question One

Scenario

Networking is a very important part of ICT and has made it easy to share data and resources. At the same time, it has made piracy, plagiarism and other forms of cybercrime much easier to commit. On a technical level, it is very difficult to prevent abuse of the network without creating obstacles that make it more difficult for users to use the network.

1.1 Besides policies, restrictions and firewalls, write down the other category that network management is divided into. (1)

1.2 Explain the purpose of a firewall. (2)

1.3 List 3 aspects that must be included in the code of conduct for educating users and Governing their behavior when using a network and the internet. (3)

1.4 List 3 capabilities of ICT. (3)

1.5 List 3 limitations of ICT. (3)

1.6 How does e-communication shrink the globe? (1)

1.7 Describe 2 ways in which ICT can contribute to environmental improvement. (2)

[15]

Question Two

Scenario

Deciding to computerise any business, part of a business, task or manufacturing process does not guarantee success to any kind environment.

2.1 List 3 examples of what ICT can bring to the workplace. (3)

2.2 Explain how ICT has had an effect on teachers in the workplace. (1)

2.3 Explain what is meant by virtual office. (2)

2.4 List 3 IT based careers. (3)

2.5 Explain what is meant by outsourcing. (2)

2.6 Give a description of the term globalisation. (2)

2.7 List 2 global trends that are driving globalisation. (2)

[15]

Question Three

3.1 Study the Delphi Code below and answer the questions based on it. The Code is supposed to generate the $\mathbf{X^n}$ for any two-digit integer input where X represents the larger digit and n represents the smaller digit.

```
{1} Procedure SuperPower();
{2} Var iNum , i1 , i2 : Integer;
{3}      k , prod: String;
{4}  begin
{5}    prod := 0;
{6}    iNum := StrToInt(edtNum.Text);
{7}    i1 := iNum div 10;
{8}    i2 := iNum Mod 10;
{9}    if i1 > i2 then
{10}    begin
{11}         i1 := i1+i2;
{12}         i2 := i1 - i2;
{13}         i1 := i1 - i2;
{14}    end;
{15}   for k := 1 to i1  do
{16}    begin
{17}         prod := prod * i2;
{18}    end;
{19}    showMessage('The value is '+IntToStr(prod));
{20} end;
```

3.1.1 There is one error in the code which will cause the code not to execute.
Identify the line number and indicate the type of error then rewrite the correct statement. (3)

3.1.2 When this code is executed, and a correct value is given for input, the output is 0.
What type of error is this classified as: logical or runtime? Explain. (2)

3.1.3 Correct the error to 3.1.2. so that the correct output is displayed. (2)

3.1.4 Rewrite the code that will be used to replace the for...loop with a conditional while loop.
Use the loop variable provided in the code. (3)

3.1.5 The code begins with the word **Procedure**.
3.1.5.1 What is a procedure in Delphi? (2)

3.2 The results of an unknown number of students who enrolled for a Network Engineering course was given in an already sorted array (arrMarks). The median mark is required for the processing of other stats by admin. Write an algorithm in pseudocode to show how you would use the existing array to determine median mark of the results.

Note that the median of an odd set of data values is calculated differently from that of an even set of data values. While in an odd set, the median is simply the middle value in the list, the median of an even set is the average of the two middle values (8)

Grade 11 IT 2nd Controlled Test 2019 Memo

1.1 End user acceptable use policy documents. ✓
1.2 Firewall purpose is to control and to monitor the communication that takes place between a network or computer and the internet. ✓✓
1.3 Ethical, legal and safe use✓
Privacy of other users✓
Forms of online communication✓
Restriction on the amount and type of data that may be downloaded
Restrict access to sites with objectionable and offensive material
{any three}
1.4 Improving and enhancing our ability to communicate✓
Automating repetitive tasks✓
Collecting and mining data✓
Increasing our awareness of our common humanity and individual rights
Making vast stores of knowledge and experience available and searchable
1.5 Poorly written and designed software✓
Information overload✓
Profitability✓
Availability of skilled people
Poor support infrastructure
Limiting governmental policies
Fear of ICT
{Any Three}
1.6 Improved communication✓
1.7 Improved communication that makes the population of the planet aware of environmental issues✓
The statistics and analysis of research✓
The tracking and monitoring of wildlife
The genetic research that can help restore falling populations of rare species.
{any two}

2.1 Better record keeping, data storage and management✓
Better communication and virtual presence✓
Automation
Artificial intelligence and sensor driven computer

2.2 The use of multimedia aids✓

2.3 Is when you rent part of a shared office space with a secretary, reception or meeting room that is shared by you and more people who only use it when you need to. ✓✓

2.4 PC technician ✓
Programmer✓
Nerwork administrator✓
Graphic designer
Web author
Security consultant

System analyst

2.5 Outsourcing is when you get other specialist business to run part of your business that is not your speciality. ✓✓

2.6 Globalisation is the integration of economies, cultures, idea and groups across the globe. ✓
It is driven by world wide network of communication, transport, trade and immigration. ✓

2.7 Mobile communication✓
Online services✓
Cellphone banking
Video conferencing
Social networking
GPS
Interactive whiteboards
E-Learning
{Any Two}

3.1.1 Line 3✓ - Type mismatch error✓ k , prod : Integer; ✓

3.1.2 Logical error. Programs works fine but prod is incorrectly set to 0.

3.1.3 Prod := 1;

3.1.4 K := 1; ✓
While K <=i1 do ✓
Begin
…
K := K + 1; ✓
End;

3.1.5.1 A subprogram
- a method (any definition related to modular design)
- subroutine that carries out an action e.g. display (any other alternative)

3.2 Len ← Length(arrNum) ✓
If Len mod 2 = 0 ✓
Then ✓
Find first middle number(fir ← arrNum[Len div 2])
Find Second middle number (sec ← arrNum[Len div 2 + 1]) ✓
Find the average to get median : med ← (fir + sec)/2 ✓
Else ✓
Med ← arrNum[Len div 2] ✓
Display Med ✓