Centre Number	Candidate Number	Candidate Name

NAMIBIA SENIOR SECONDARY CERTIFICATE

COMPUTER STUDIES ORDINARY LEVEL

4325/1

PAPER 1

Marks 100

2 hours 30 minutes

2020

No Additional Materials are required.

INSTRUCTIONS AND INFORMATION TO CANDIDATES

- Candidates answer on the Question Paper in the spaces provided.
- Write your Centre Number, Candidate Number and Name in the spaces at the top of this page.
- Write in dark blue or black pen.
- You may use a soft pencil for any rough work, diagrams or graphs.
- Do not use correction fluid.
- Do not write in the margin *For Examiner's Use*.

- Answer **all** questions.

- The number of marks is given in brackets [ ] at the end of each question or part question.
- The businesses mentioned in this question paper are entirely fictitious.

For Examiner's Use

Marker	
Checker	

This document consists of **17** printed pages and **3** blank pages.

Republic of Namibia

MINISTRY OF EDUCATION, ARTS AND CULTURE

1 A primary school in Ohangwena region received 20 computers from the government. The computers are for all learners in this school to have access to the internet.

(a) Define the term *internet*.

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.... [2]

(b) Identify and describe any services available over the internet that the school can utilise.

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(c) State **two** dangers of the internet to learners at this primary school if not properly controlled.

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.... [2]

2 A government office is well secured with a computerised security system.

(a) Identify and describe **two** sensors that can be used in this security system.

Sensor 1 ....

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Sensor 2 ....

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.... [4]

(b) Identify **one** technique for communicating warning signals from the above system. Explain how this technique could be used.

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.... [2]

[Turn over

3 Doctors can now manage treatment of specific affected tissues in patients. This includes internal cancerous cells on different organs such as the kidney. This has been made possible by the use of nanotechnology in medicine.

(a) Define the term *nanotechnology*.

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.... [2]

(b) Explain how the use of nanotechnology could be applied in administering of treatment of specific affected cells.

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.... [4]

4 CCTV can be used by a security company to carry out different operations.

(a) Identify any **two** uses of CCTV by a security company.

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.... [2]

(b) Explain how computer systems are used to control CCTV cameras by a security company.

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.... [3]

[Turn over

5 The managers of a hospital would like to network all computer devices in the hospital. There are five sections to include in the network:

- Reception and Admission
- Accounts
- Pharmacy
- Treatments
- Laboratory

(a) State **two** benefits of networking different sections of this hospital.

Benefit 1 ....

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Benefit 2 ....

.... [2]

(b) What type of topology would be more suitable for this hospital. Give reasons for your answer.

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.... [3]

(c) The hospital wishes to introduce an extranet system, explain how the data stored on the hospital network could be secured..

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.... [2]

6 The organisers of an annual conference are based in different provincial offices around the country. They need to hold a series of planning meetings

Identify **two** hardware devices used to input data for a video conference and describe the type of data that each of the hardware device identified collects.

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.... [4]

[Turn over

7 Expert systems are widely used in the diagnosis of faults in car engines and in other electronic devices.

(a) What is an expert system?

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.... [2]

(b) Briefly describe how an expert system can be created including the role of:

- rule base

- knowledge base,

- human machine interaction

- inference engine.

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8 Explain how virtual reality could be used in the training of medical doctors

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.... [4]

9 An analyst has been hired to undertake a feasibility study for a company that needs to fully computerise their information systems.

(a) Explain the purpose of carrying out a feasibility study.

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.... [2]

(b) Explain why a system has a limited life span.

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[Turn over

10 On a normal day's operations in a school, the accountant can email notification on fees payments to parents and suppliers of some food items for the kitchen, whilst playing music at a low volume. At the same time, he can be updating learner's accounts records

(a) Identify the type of operating system used on the accountant's computer. Give a reason for your answer.

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.... [2]

(b) The accountant sends a 58 page document for printing whilst he is printing the fees statements for all learners.

Explain how buffering can be used to handle the printing.

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.... [3]

(c) Explain the purpose of the following utility software:

Hardware drivers

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Disk defragmenters

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.... [2]

11 Write an algorithm for a program to calculate and output a total price for purchasing tickets for a group of adults and children. The program should

- ask for the number of adults and the number of children.

- calculate the total price where adult tickets are ND50 and child tickets ND25.

- output the total price calculated or ND300 for all totals above ND300.

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[Turn over

12 **(a)** Explain the purpose of a relational database.

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(b)

Employees table			
employeeId	**employeeName**	**employeeBoss**	**locationId**
1	Rein	Hendrik	3
2	Sakaria	Shimpanda	2
3	Lydia	Roddy	3

Locations table	
locationId	**locationName**
1	Oshakati
2	Rundu
3	Okahandja
4	Oshikango

(i) Use the Employees and Location tables shown above to explain how a relationship is used to link two database tables.

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.... [2]

(ii) State the name of the primary key in the Locations table.

.... [1]

(iii) Explain what a database query is.

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.... [1]

(iv) Identify the field in each table that would be most suitable to form the relationship between the two tables. Give a reason for your answer.

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.... **[2]**

[Turn over
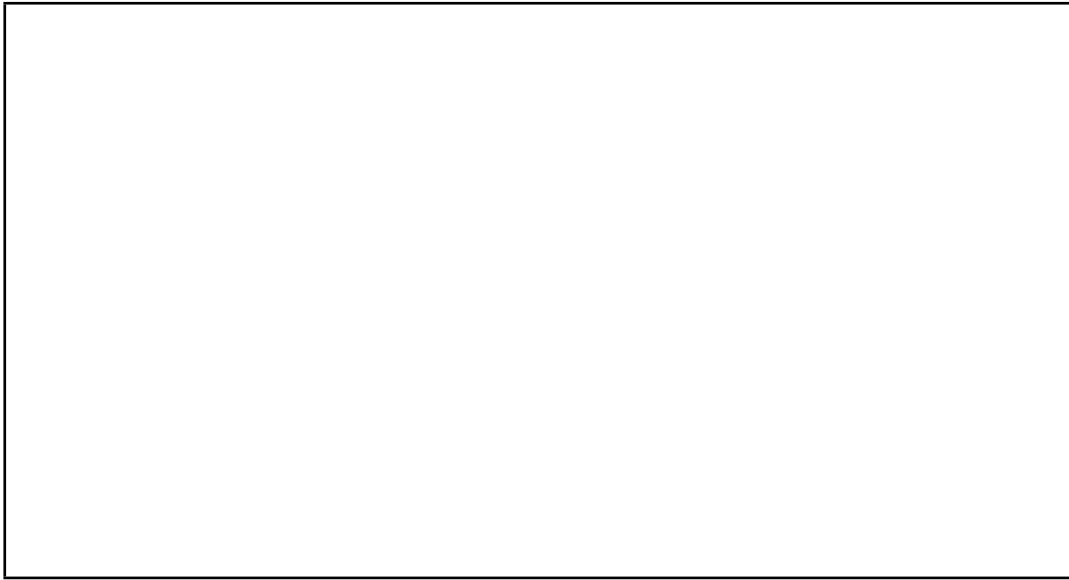
13 Draw a logic gate circuit and the truth table for the expression
A = (NOT (B OR C) AND C) OR D.

(a) Logic gate circuit

[4]

(b)

Truth table			
B	C	D	A

[4]

[Turn over

14 Identify any **two** services available on cloud computing and explain how each of the can be of benefit to an organization.

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.... [6]

15 Explain the differences between the following pair of spreadsheet features.

(a) Absolute referencing and relative referencing

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.... [2]

(b) VLOOKUP and HLOOKUP functions

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.... [2]

[Turn over

16 State the **four** benefits of using robots.

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17 (a) The ASCII code for 'a' is 97. What is the binary representation for letter 'a'. Show your working.

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(b) State **two** advantages of using a compiler over an interpreter during program implementation.

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