

Botswana Accountancy College



Computing and Information Systems

PROGRAMME: BSC COMPUTER SYSTEMS ENGINEERING

BSC INFORMATION COMMUNICATION TECHNOLOGIES

BSC BUSINESS INTELLIGENCE AND DATA ANALYTICS

BSC NETWORK SYSTEMS ENGINEERING

BSC APPLIED BUSINESS COMPUTING

Date: 14 January 2021

Time: 0800

Total Marks: 100

Duration- 4 hours

Instructions to candidates:

1. Candidates must answer any four (4) questions
2. Candidates attempting to gain unfair advantage or colluding in any way whatsoever are liable to be disqualified.
3. Candidates are allowed to bring textbooks, lecture notes, online resources into the examination environment.
4. Download both Examination Question Paper and the Examination Answer Booklet on to your computer
5. Write your answers in the answer booklet provided with this question paper.
6. Append your signature and ID number at the bottom of your Examination Answer Booklet as acknowledgement the submitted work as your own.
7. Submit your work in PDF, or Word format
8. Submit the Examination Answer Booklet ONLY as one document on TurnItIn on the submission bin provided.

This question paper consists of four (4) printed pages including this page

Question 1

- a) List **any four (4)** basic types(categories) of computers, giving at least **one** example of each type of computer and stating what that computer might be used for. [12 marks]
- b) The way computers looked in 2013 may be different from what they look now and what they will look like ten years from now. Identify **any five (5)** differences that are likely to occur in the next ten years in terms of computers, laptops and mobile devices. [5 marks]
- c) It has been observed that technology exists today to allow for the payment of fast-food purchases by mobile phone and it's being used in Europe and Japan. Why do you think only a few, if at all, African countries have adopted this technology? Suggest four reasons that are well explained. [8 marks]

[Total 25 marks]

Question 2

- a) Explain the functions of the following hardware components commonly found inside the system unit:
- i) Memory [3 marks]
 - ii) Buses [3 marks]
 - iii) Expansion cards [3 marks]
 - iv) CPU [3 marks]
- b) Explain why the width of a data bus can affect the overall performance of a computer. [3 marks]

- c) Your friend is studying architecture at a local university and as a requirement they must buy a computer on which they are supposed to install a graphics application. Besides as a young undergraduate, they have to view movies, write assignment and play music from the computer. Unfortunately, your friend knows very little about computers and they have come to you to help them find out which computer to buy and which other relevant information they should know.

As a computing student yourself, discuss what issues you are going to address for your friend to make an informed decision and budget. [9 marks]

- d) Give an example of a search engine that you know [1 mark]

[Total 25 marks]

Question 3

- a) Explain the differences between a laser printer and an ink-jet printer [4 marks]
- b) Describe **any four (4)** general characteristics of storage systems [4 marks]
- c) Describe the two most common types of hard drives and what they are used for today. [6 marks]
- d) Is it better to copy a file from a USB flash drive to a hard drive for extensive editing instead of working directly with (and repeatedly saving) the document on the USB flash drive? Justify your position. [4 marks]
- e) Distinguish between the Network attached storage (NAS) devices and the Storage Area Networks (SANs). [4 marks]
- f) Explain how online/cloud storage systems can be used to preserve data. [3 marks]

[Total 25 marks]

Question 4

- a) i) Discuss the societal impact of computers, [3 marks]
- ii) including some benefits and [3 marks]
- iii) risks related to their prominence in our society. [3 marks]
- b) Explain **any three (3)** processing techniques which can enhance computer efficiency. [3 marks]

c) After all tables in a database have been created and their primary keys designated, the tables can be related to one another for purposes of extracting data from each as needed. With examples, describe the following entity relationships:

i. One-to-one entity relationship [2marks]

ii. One-to-many entity relationship [2marks]

iii. Many-to-many entity relationship [2marks]

d) A database can be classified in a variety of ways, including the number of users it supports, the number of tiers it has, where the database is located and so forth.

Giving an example for each, distinguish between a centralized database system and distributed database system. [4marks]

e) Explain how the following can be used at a workplace:

i) Microsoft office word [1 mark]

ii) Microsoft office excel [1 mark]

iii) Microsoft office access. [1 mark]

[Total 25 marks]

Question 5

There are a wide variety of important network applications used by businesses and individuals for communications, Information retrieval and other applications.

a) State and Explain **five (5)** network applications available today [5x2 marks]

b) What is a topology? [1 mark]

c) Define the following topologies

i. Star networks [2 marks]

ii. Bus networks [2 marks]

iii. Mesh networks [2 marks]

iv. Ring networks [2 marks]

d) Expand and describe the following acronyms

i. ISOC [2 marks]

ii. ICANN [2 marks]

iii. W3C [2 marks]

[Total 25 marks]

End of question paper