



FACULTY OF INFORMATION TECHNOLOGY
BACHELOR OF BUSINESS INFORMATION TECHNOLOGY
END OF SEMESTER EXAMINATION
BBT1101 \$ CNS 1101: IT FUNDAMENTALS

DATE: 29TH July 2024

Time: 13:00-15:00 Hours

Instructions

1. This examination consists of **FIVE** questions.
2. Answer **Question ONE (COMPULSORY)** and any other **TWO** questions.

QUESTION 1 (30 marks)

a) Case Study

Cloudana is a business that offers IT as a Service (ITaaS) to lean organizations that do not have their own IT department. Cloudana's ability to offer ITaaS is enabled by underlying technology models such as Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS). The following are the core business functions listed in order from most important to least important in terms of revenue generated. The first business function is to provide a Customer Relationship Management (CRM) system as SaaS. This is in the form of a web application which the client organizations subscribe to. Another core business function is to provide Database as a Service (DBaaS) whereby clients can securely store their data without having to worry about the technical expertise required to manage a database server. The third core business function is to troubleshoot common computer problems that the client's employees face while working. This is done either remotely or at the client's premises. Cloudana's mission statement is "to optimize IT production for business consumption".

In order to execute its core business functions, Cloudana relies on an Information System. It is a small company and has only 3 employees: The first working as both a Database Administrator (DBA) and an Application Developer, the second working as the Systems Administrator and CEO, and the third working as an end-user support engineer to troubleshoot problems regarding the computers used by clients' employees. They have a Standard Operating Procedure (SOP) to help employees to carry out routine operations by dictating step-by-step instructions.

The organization owns 4 physical servers 3 of which are connected directly to the Internet. The 3 connected servers correspond to the 3 business functions. It has a Human Resource

(HR) system to manage their internal HR matters and a CRM system to manage their client data. These 2 systems use the fourth server.

Answer the following questions based on the case study:

- i. Define Information Technology (IT) (1 mark)
- ii. Define an information system (2 marks)
- iii. Identify SIX categories of assets that constitute an Information System (3 marks)
- iv. List examples of all assets that Cloudana has in each asset category identified in (iii) above (6 marks)
- v. Choose ONE asset per asset category that you believe is the most important. Justify your answer by explaining why the asset you have chosen is the most important one its category. (12 marks)
- vi. From your findings in part (v) above, which hardware asset should the IT department focus its hardware maintenance programme to ensure the asset has the least possible downtime? (2 marks)
- vii. From your findings in part (v) above, what is the most critical software that the organization needs to achieve its business functions? (2 marks)
- viii. From your findings in part (v) above, what data should Cloudana secure the most? (2 marks)

QUESTION 2 (15 marks)

- a) You have been consulted by your organisation again to help in buying a printer. Give a list of five things that you would emphasize on. (5 Marks)
- b) Describe three major components of a computer and state two factors for each that you would consider when buying the components (6 Marks)
- c) Electrostatic discharge (ESD) occurs when there is a build-up of an electric charge and can cause permanent damage to electrical equipment. List four measures you can take to prevent an ESD damage. (4 Marks)

QUESTION 3 (15 marks)

- a) With the aid of diagrams explain the functionality of any four redundant array of independent disks technology that can be used to store data across multiple storage devices and give an advantage and disadvantage for each technology. (8 Marks)
- b) List and explain four different types of printers that you have learnt in class. (4 marks)
- c) Name three devices that the Android OS runs on, other than smartphones. (3 Marks)

QUESTION 4 (15 marks)

- a) Discuss why documentation of services and repairs is an important organizational tool for a technician? (3 marks)
- b) Use ONE example of a common PC problem to describe how to implement all the steps of the troubleshooting process (12 marks)

QUESTION 5 (15 marks)

- a) A user receives a phone call from a person who falsely claims to be a member of the IT department. The caller then asks the user for confirmation of the user's username and password for auditing purposes. Identify the security threat that this phone call represents (1 mark)

- b) Distinguish between a worm, a virus, a Trojan, adware, and spyware in the context of computer security (5 marks)
- c) Identify and describe the THREE key goals of security using relevant examples of each (9 marks)