



MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY

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University Examinations 2020/2021

SECOND YEAR SECOND SEMESTER EXAMINATIONS FOR BACHELOR OF SCIENCE IN INFORMATION SCIENCE

CIS 3253: INFORMATION SECURITY AND DISASTER MANAGEMENT

DATE: JULY 2021

TIME: 2 HOURS

INSTRUCTIONS: Answer Question ONE and any other Two questions.

QUESTION ONE (30 MARKS)

- a) Differentiate the following terms
- i. Security plan from a security policy (2 Marks)
 - ii. Passive attack and active attack (2 Marks)
 - iii. Disaster recovery and business continuity (2 Marks)
- b) Mark is a senior librarian at Bidii University. One of his roles is to assign his staff and library user's access to the digital library resources. List five techniques that Mark can use to avoid guessable passwords (5 Marks)
- c) State the benefits of Disaster Recovery in Cloud Computing. (5 Marks)
- d) Explain how Corona Virus disease is transmitted and why it is considered to be a disaster. (6 Marks)
- e) What are the four benefits that can be provided by intrusion detection systems and Intrusion Prevention Systems in protecting an organization records (4 Marks).
- f) Define the following terms as used with respect to information systems security: (4 Marks)
- i. Vulnerability
 - ii. Threat
 - iii. Risk

iv. Exposure

QUESTION TWO (20 MARKS)

- a) State and briefly explain any five major security requirements as used in information security (10 Marks)
- b) Using a diagram, briefly explain the concept of CIA in information security architecture and design (6 Marks)
- c) It is important to carry out disaster recovery tests. Explain why do businesses avoid performing disaster recovery tests. (4 Marks)

QUESTION THREE (20 MARKS)

- a) Name and explain the five key steps required to develop a successful Business Continuity Plan (10 Marks)
- b) Explain three types of intruders in security attacks that may affect information systems of an organization like Meru University of Science and Technology (6 Marks)
- c) State and briefly explain any two types of hackers that may compromise the security of a library management information system (4 Marks)

QUESTION FOUR (20 MARKS)

- a) Mark is the network security officer of an innovation company. He intends to install a firewall to secure the company's network and systems. Explain what a firewall is and briefly explain any three types of firewalls that Mark could consider. (7Marks)
- b) State and briefly explain the four key elements of a disaster control plan (8 Marks)
- a) Highlight any five disasters that may affect organization information systems (5 Marks)

QUESTION FIVE (20 MARKS)

- a) Write SSL in full and use a diagram to show the SSL architecture protocols as applied in web security. (8 Marks)
- b) Tumaini Company wants to allow its employee to access the organization database. Describe three different approaches that can be used for user authentication by Tumaini. (6 Marks)
- c) Disasters can generally be categorized into two types, name them and for each give two examples (6 Marks)