



**UNIVERSITY EXAMINATIONS**

**EXAMINATION FOR JANUARY/APRIL 2023/2024 DIPLOMA IN CYBER SECURITY |  
DIPLOMA IN ETHICAL HACKING AND INFORMATION SECURITY**

**RES 025: COMMUNICATION SECURITY**

DATE: \_\_\_\_\_

TIME: 2 HOURS

**GENERAL INSTRUCTIONS:**

Students are NOT permitted to write on the examination question paper during exam time.

This is a closed book examination. Textbook/Reference books/notes are not permitted.

**SPECIAL INSTRUCTIONS:**

This examination paper consists Questions in Section A followed by section B.

Answer Question 1 and any Other Two questions.

QUESTIONS in ALL Sections should be answered in answer booklet(s).

- 1. PLEASE start the answer to EACH question on a NEW PAGE.**
- 2. Keep your phone(s) switched off at the front of the examination room.**
- 3. Keep ALL bags and caps at the front of the examination room and DO NOT refer to ANY unauthorized material during the course of the examination.**
- 4. ALWAYS show your working.**
- 5. Marks indicated in parenthesis i.e. () will be awarded for clear and logical answers.**
- 6. Write your REGISTRATION No. clearly on the answer booklet(s).**
- 7. For the Questions, write the number of the question on the answer booklet cover page in the order you answered them.**
- 8. DO NOT use your PHONE as a CALCULATOR.**
- 9. YOU are ONLY ALLOWED to leave the exam room 1hour to the end of the Exam.**
- 10. DO NOT write on the QUESTION PAPER. Use the back of your BOOKLET for any calculations or rough work.**

## **SECTION A (COMPULSORY)**

### **QUESTION 1 (30 Marks)**

- a) Compare and contrast two types of mobile malware and how they affect the device and the user. **(4 Marks)**
- b) Explain how phishing works and why it is a common mobile threat. **(3 Marks)**
- c) Identify and explain five (5) protocols supported by SMS. **(10 Marks)**
- d) Discuss the five (5) main email protocols. **(5 Marks)**
- e) Describe **ALL** mobile generations stating the features of each generation. **(8 Marks)**

### **QUESTION 2 (20 Marks)**

- a) Analyze the advantages and disadvantages of each mobile generation in terms of performance, reliability, security, and cost. **(10 Marks)**
- b) Outline (2) two factors to consider when investing in VOIP. **(2 Marks)**
- c) State and explain the (4) four different communication channels. **(8 Marks)**

### **Question 3 (20 Marks)**

- a) Analyze and categorize eight (8) critical cellular network elements from a cybersecurity perspective, considering potential vulnerabilities and attack vectors for each. **(12 Marks)**
- b) Discuss mitigation strategies and best practices for securing these elements. **(8 Marks)**

### **Question 4 (20 Marks)**

- a) With the aid of a diagram, outline the process of communication. **(4 Marks)**
- b) Imagine a future where technology significantly alters how we communicate. Discuss the potential benefits and drawbacks of these changes. **(6 Marks)**
- c) Imagine you need to deliver complex technical information to a non-technical audience. Compare the effectiveness of written and visual communication methods in this scenario. **(8 Marks)**
- d) Outline the ethical considerations of using different communication methods for persuasion or marketing. **(2 Marks)**

### **Question 5 (20 Marks)**

- a) You are designing a Voice over Internet Protocol (VoIP) application for a diverse user base.
  - i) Identify and elaborate on (4) four distinct types of VoIP services or protocols that your application can support. **(4 Marks)**
  - ii) Explain the advantages and use cases for each type. **(8 Marks)**
- b) Describe the different types of encryption algorithms and their strengths and weaknesses. **(6 Marks)**