



**UNIVERSITY EXAMINATIONS**

**EXAMINATION FOR JANUARY-APRIL 2023/2024 FOR DIPLOMA IN  
INFORMATION TECHNOLOGY**

**RIT 027: E- TECHNOLOGIES**

**DATE: 9<sup>TH</sup> APRIL 2024**

**TIME: 2 HOURS**

**GENERAL INSTRUCTIONS:**

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

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

**SPECIAL INSTRUCTIONS**

1. Write your REGISTRATION NO. Clearly on the answer booklet(s).
2. Answer Question One and ANY other TWO questions.
3. Questions in all sections should be answered in answer booklet(s)
4. PLEASE start the answer to EACH question on a NEW PAGE.
5. For the questions, write the number of the question on the answer booklet(s) in the order you answered.
6. Write on both sides of each leaf and indicate number of each question at the top of each page.
7. Write the answers in a paragraph form unless stated otherwise.
8. Marks allocated to each question are shown at the end of the question.
9. All rough work must be done on the answer booklet and crossed through!
10. Use supplementary pages only when you have exhausted those in this book
11. Fasten the supplementary pages to the inside back cover of this booklet

## SECTION A (COMPULSORY)

### Question One (30 Marks)

- a) Define the following terms
- i. Big-data
  - ii. Artificial intelligence
  - iii. E-government
  - iv. Network
  - v. LAN
- (5 marks)**
- b) State **THREE** the difference between IPv4 and IPv6
- (3 marks)**
- c) Looking at the example URL,  
[<https://www.example.com:80/products/page1?search=term#section2>], identify parts of the URL that correspond to the following categories
- (5 marks)**
- i. Scheme
  - ii. Domain
  - iii. Port
  - iv. Query
  - v. Fragment?
- d) List **TWO** roles of Domain Name System
- (2 marks)**
- e) Explain the key differences between the Internet, an intranet, and an extranet, and provide examples of when each might be used in a business context.
- (6 marks)**
- f) Outline the roles of ISPs in providing internet access.
- (4 marks)**
- g) Explain Two emerging cyber security threats
- (4 marks)**
- h) Explain the term Optimization?
- (1 marks)**

## SECTION B (CHOOSE ANY TWO QUESTION – TOTAL 40 MARKS)

### Question Two (20 marks)

- a) Describe **FOUR** importance of E-technology
- (4 marks)**
- b) Explain **THREE** different types of networks
- (6 marks)**
- c) Define the following internet protocols:
- (8 marks)**
- i. SMTP

- ii. IMAP
  - iii. POP
  - iv. FTP
- d) Define the term Packet Switching? (2 marks)

**Question Three (20 marks)**

- a) Explain the importance of network security? (4 marks)
- b) In details, discuss the benefits and disadvantages of the following e-technologies: (8 marks)
- i. E – health
  - ii. E – learning
- c) Discuss FOUR benefits of E-technologies? (8 marks)

**Question Four (20 marks)**

- a) Discuss **THREE** factors to consider when developing an e-commerce website (6 marks)
- b) Using a relevant example outline the difference between the following types of e-commerce: B2C, B2B and B2A. (6 marks)
- c) Define the following terms: (5 marks)
- i. HTTP
  - ii. WWW
  - iii. Digital Transformation
  - iv. E-commerce
  - v. Web Application
- d) Explain how businesses use data analytics to improve their e-commerce strategies? (3 marks)

**Question Five (20 marks)**

- a) Imagine you are a manager in a mid-sized technology company. Company A, where you work, is currently using somewhat outdated IT systems and processes. On the other hand, Company B, a competitor in your industry, has enthusiastically adopted the latest IT trends and technologies. Explain five significant benefits that Company B is enjoying over Company A due to its commitment to staying current with IT trends. (10 marks)
- b) Explain **FOUR** types of networks (8 marks)
- c) State the roles of TCP/IP in data communication over the Internet? (2 marks)

