



**NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY**

FACULTY OF COMMERCE, HUMAN SCIENCES AND EDUCATION

DEPARTMENT OF GOVERNANCE & MANAGEMENT SCIENCES

QUALIFICATION : BACHELOR OF BUSINESS AND INFORMATION ADMINISTRATION	
QUALIFICATION CODE: 07BBIA	LEVEL: 7
COURSE CODE: BIS721S	COURSE NAME: BUSINESS INFORMATION SYSTEMS 3
SESSION: NOVEMBER 2025	PAPER: THEORY (PAPER 1)
DURATION: 2 HOURS	MARKS: 100

1st OPPORTUNITY EXAMINATION QUESTION PAPER	
EXAMINER:	PROF. N. ANGULA MS J. KHOM-OABES
MODERATOR:	Mr. Tuliameni Kanyemba

INSTRUCTIONS	
1.	Read all the questions carefully before answering.
2.	Make sure your name and surname, question number and the date appears on the answer script.
3.	Please ensure that your writing is legible, neat and presentable.
4.	THIS QUESTION PAPER CONSISTS OF 6 PAGES (Including this front page)

Answer the following multiple-choice questions. Only write down the question number and the correct answer. E.g. 1.1 C

Section A: Multiple choice questions

- 1.1 In a pure peer-to-peer (P2P) network, which of the following statement about the role of a node is most accurate?
- A Nodes primarily acts as clients, requesting service from a central server.
 - B Nodes function as both clients and servers, sharing resources with each other without a central authority
 - C Nodes are dedicated servers, providing resources to a group of clients
 - D Nodes are solely responsible for routing data packets between different subnets.
- 1.2 What is a key technical benefit of a client-server architecture compared to a peer-to-peer (P2P) network?
- A It is less expensive to set up and maintain.
 - B It offers a decentralised approach with no single point of failure
 - C It provides centralised control, management, and security for shared resources.
 - D It allows all devices to act as both a client and a server simultaneously
- 1.3 Which network topology provides the highest level of redundancy and fault tolerance by connecting every node to every other node, but is also the most expensive and complex to implement?
- A Star Topology
 - B Bus Topology
 - C Mesh Topology
 - D Ring Topology
- 1.4 Which phase of the SDLC focuses on defining project goals, assessing feasibility, and creating a detailed plan that outlines project scope and resources?
- A Planning
 - B Design
 - C Analysis
 - D Implementation

- 1.5 During which phase of the traditional Software Development Life Cycle (SDLC) is the prototyping model most effectively applied to quickly validate user requirements and reduce uncertainty?
- A Implementation and coding
 - B Requirements Analysis and Design
 - C Testing and Deploying
 - D Maintenance and Operations
- 1.6 The Waterfall methodology is the most traditional approach in the field of system development.
- A Network architecture
 - B Networking
 - C SDLC
 - D Hardware
- 1.7 A large retail company's daily sales reports, which summarise transactions from all store locations, are used by middle managers to monitor performance and identify trends. What type of information system is most likely generating these reports?
- A Executive Support System (ESS)
 - B Transaction Processing System (TPS)
 - C Management Information System (MIS)
 - D Decision Support System (DSS)
- 1.8 This is crucial as it effectively addresses the risk factors associated with the development process.
- A Wi-Fi adapters
 - B Peer-to-peer network
 - C Networking
 - D The Spiral model
- 1.9 This methodology, similar to the spiral model, develops a product through repeated cycles of prototyping, testing, and incorporating user feedback. However, unlike the spiral model, a core principle of this approach is that each of its development cycles must be completed within a strict, predefined time limit.
- A Digital signals
 - B Scrum
 - C Media
 - D Internet Protocol (IP)

1.10 A business analyst is using a Decision Support System (DSS) to evaluate a company's sales performance. The system presents a table of raw daily sales figures. The analyst then aggregates this into a report showing weekly sales totals and trends. Finally, the analyst uses this report to infer that a new marketing campaign is the reason for a recent sales spike. Which of the following accurately represents the progression of these three stages.

- A Data – Knowledge – Information
- B Information – Data - Knowledge
- C Knowledge – Information- Data
- D Data – Information – Knowledge

[10 marks]

Section B: Structured questions

[90 Marks]

Answer each of the following questions:

Questions 1

How can we differentiate between LAN, WAN, MAN, and Enterprise Networks to help an organisation choose the best network type based on its size, location, and operational requirements? [10]

Question 2

Explain the core technical and strategic benefits that a well-designed computer network provides to a business information system. In your answer, detail how these benefits contribute to operational efficiency, data management, and scalability, providing specific examples for each point. [10]

Question 3

A medium-sized architectural firm is setting up a new office with 50 workstations, 2 servers for CAD software, and a central plotter. The firm needs a network that is both reliable for its critical project files and easy to manage without dedicated IT staff. **Identify** a suitable network topology for this scenario. **Describe** the structure, two advantages, and two disadvantages of the identified topology. **Explain** why this topology is the most appropriate choice for the firm, considering its specific needs for reliability and ease of management. [10]

Question 4

In a scenario where an IT company, is tasked with the development of a web-based project management application. The project is characterised by the need for rapid deployment of a Minimum Viable Product (MVP) to gather immediate user feedback, and an iterative development process that can accommodate significant scope evolution based on market dynamics. **Determine** the most suitable System Development Life Cycle (SDLC) model for this project's requirements. **Outline** the key stages of the identified SDLC model [10]

Question 5

In a scenario where a company is deciding whether to embark on a new system development project, what are five key reasons that would motivate the decision to initiate the development? Discuss each reason in detail, considering factors such as efficiency, market demands, technological advancements, and organisational goals. [10]

Question 6

In a scenario where a company is evaluating the components of its IT infrastructure, would you consider system development as part of the networking infrastructure? Justify your answer with five reasons, considering factors such as the relationship between system development and network performance, scalability, and integration. [10]

Question 7

Define a Decision Support System (DSS) and explain its three primary components. Furthermore, provide a practical business example of how a DSS is used to support semi-structured decision-making by a middle manager, clearly identifying how each of the three components contributes to the final decision. [10]

Question 8

A Production Manager at 'TechFab Manufacturing' notices a decrease in product quality and must use the company's Business Information Systems (BIS) to implement a solution. Using this context, technically outline and explain the manager's four decision-making stages (Intelligence, Design, Choice, and Implementation), specifically identifying and describing the function of the IS tool or capability (e.g., MIS report,) that supports the manager's actions in each sequential stage towards resolving the quality. [10]

Question 9

Imagine a company at different organisational levels (strategic, tactical, and operational) is looking to understand the roles of its information systems. What are five key roles that an information system plays at each of these levels? Discuss how each role contributes to decision-making, efficiency, and overall organisational goals at various levels of the company.

[10]

[Section B Total Marks: 90]

End of examination

TOTAL: 100
