



**NAMIBIA UNIVERSITY  
OF SCIENCE AND TECHNOLOGY**

**FACULTY OF COMPUTING AND INFORMATICS**

**DEPARTMENT OF INFORMATICS**

<b>QUALIFICATION: BACHELOR OF INFORMATICS</b>	
<b>QUALIFICATION CODE: 07BAIT</b>	<b>LEVEL: 6</b>
<b>COURSE CODE: PAI621S</b>	<b>COURSE: PRINCIPLES AND APPLICATION OF INFORMATICS</b>
<b>SESSION: JANUARY 2025</b>	<b>PAPER: THEORY</b>
<b>DURATION: 3 HOURS</b>	<b>MARKS: 70</b>

<b>SECOND OPPORTUNITY/ SUPPLEMENTARY EXAMINATION QUESTION PAPER</b>	
<b>EXAMINER(S):</b>	Dr Irja Shaanika
<b>MODERATOR:</b>	Mr Gabriel Nhinda

<b>INSTRUCTIONS FOR THE CANDIDATE</b>
<ol style="list-style-type: none"><li>1. Answer ALL the questions on the answer scripts provided. Answer each section on a new page.</li><li>2. Write clearly and neatly.</li><li>3. Be guided by the number of marks allocated when answering the questions.</li><li>4. Show all your calculations.</li><li>5. Number your questions clearly.</li></ol>

<b>PERMISSIBLE MATERIALS</b>
<ol style="list-style-type: none"><li>1. Calculator.</li></ol>

**THIS EXAMINATION PAPER CONSISTS OF 7 PAGES**

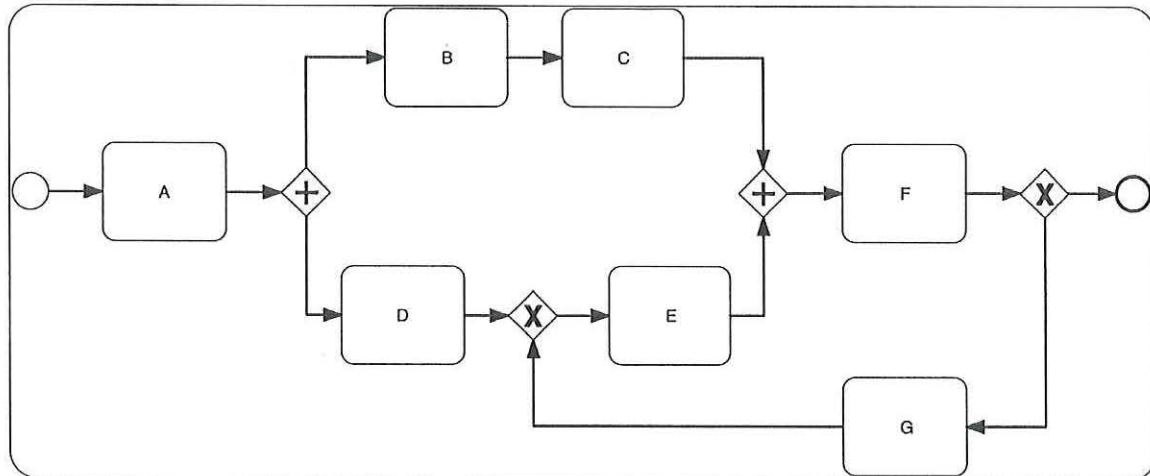
**(INCLUDING THIS FRONT PAGE)**

### Section A: Multiple Choice Questions

[10 Marks]

Each question is 1 mark.

1. The BPMN diagram below contains an incorrect gateway. Which one is the incorrect gateway?



- A) The AND gateway following task A  
B) The XOR gateway following task D  
C) The AND gateway preceding task F  
D) The XOR gateway following task F
2. Which statement about pools and lanes is true?  
A) An empty pool is not allowed.  
B) A collaboration process is a process inside a pool.  
C) A pool represents a subprocess.  
D) An embedded subprocess cannot contain pools and lanes.
3. Technology is readily produced and available as an off-the-shelf solution. A growing community builds around the technology and an ecosystem of relevant products and services emerges. The above paragraph represents which phase:  
A) Trough of Disillusionment  
B) Slope of Enlightenment  
C) Innovation Trigger  
D) Plateau of Productivity

4. Which phase from the Gartner hype curve often sees a surge of vendors, flooding the market with complementary and competing products?
  - A) Trough of Disillusionment
  - B) Slope of Enlightenment
  - C) Plateau of Productivity
  - D) Peak of Inflated Expectations
5. Other authors extend Porter's value chain Model, which consists of two categories, to include a third category known as:
  - A) Suppliers' processes
  - B) Management processes
  - C) Core processes
  - D) Support processes
6. What is the job of the process owner?
  - A) Responsible for process design, process performance and development of the solution
  - B) Execution of project management for re-engineering
  - C) Development of the database design for the responsibility
  - D) Selection and procurement of BPM tools
7. According to Porter's classification of processes, which of the following is/are support processes.
  - A) The process for handling requests from employees to take their annual vacation
  - B) The process for handling customer complaints (complaint-to-resolution)
  - C) The process for producing the annual report of the company
  - D) The process for recovering overdue payments from customers
8. A domain expert is any individual who has intimate knowledge about how a process or activity is performed. Which of the individual below cannot be a domain expert?
  - A) Process owner
  - B) Process manger
  - C) Process supplier
  - D) Process analyst
9. Which of the following is the function of purchasing inputs used in the firm's value chain ?
  - A) Procurement
  - B) Inbound Logistics
  - C) Firm Infrastructure
  - D) Operations

10. Which of the following are possible reasons for decomposing a process model into sub-process models?
- A) When there are too many end events in a process model, and we wish to reduce their number
  - B) When two events of the same type cannot be linked by a sequence flow
  - C) When there are too many crossing arcs in the model
  - D) When we want to avoid redundancies between multiple process models that share common parts

## Section B: True and False Questions

[10 Marks]

Each question is 1mark.

1. In the Gartner Hype cycle, all tracked items reach the last phase.
2. Slope of enlightenment is the initial phase of technology breakthrough.
3. The designation phase considers suitable criteria for defining priorities of these processes.
4. The porter's value chain distinguishes three categories of processes: core processes, support process and human resources management.
5. A model is a means to abstract from a given subject with the intent of capturing specific aspects of the subject.
6. Process models for applications system design are business oriented.
7. An inclusive (OR) gateway can activate concurrent paths.
8. An event-based gateway cannot be directly followed by a message-sending event.
9. A sub-process cannot have another sub-process nested within.
10. In BPMN, both pools and lanes may represent a process participant, a business unit or a software system.



## Section C: Structured Questions

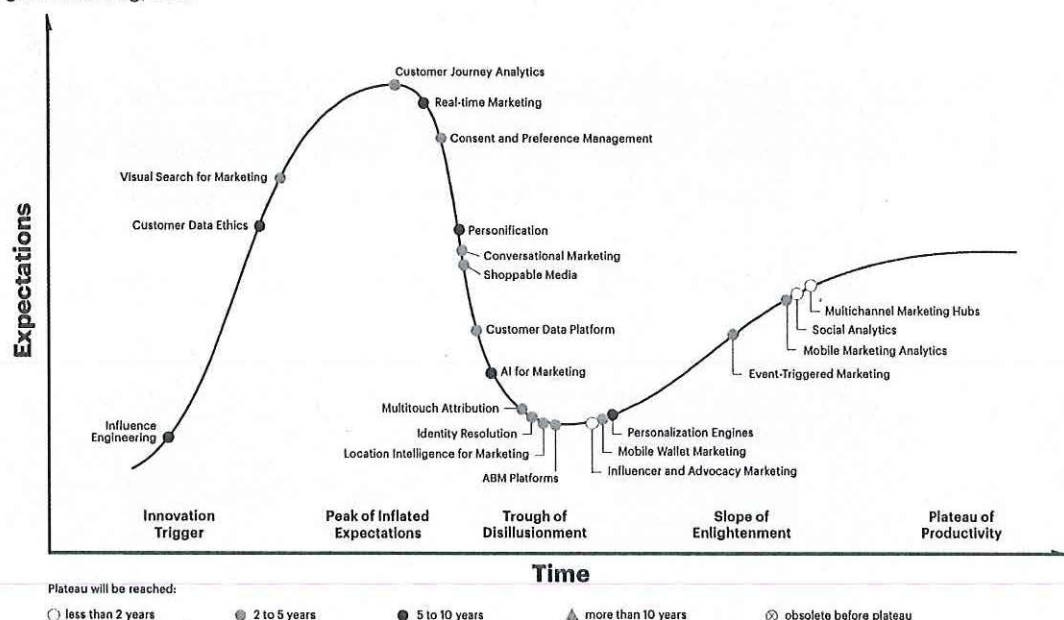
[30 Marks]

**Question 1:** Imagine you are assigned the task of modelling the process of how a book order is processed by your favourite online book retailer. How can you systematically gather the required pieces of information about this process using the workshop-based discovery?

[6 marks]

**Question 2:** The x-axis (horizontal) of the Hype Cycle focuses on “Timeline”. Discuss some of the **FACTORS** that influence how long technology will progress from one phase to another over time. (Please do not discuss the various phases of the circle). [6 marks]

Hype Cycle for Digital Marketing, 2021



**Question 3:** Discuss why during the pre-historic times people were referred to as generalists.

[4 Marks]

**Question 4:** Michael Porter’s Value Chain model distinguishes two categories of processes. Briefly discuss these categories.

[4 marks]

**Question 5:** Discuss why every organisation involved in business process management must do process prioritization.

[6 marks]

**Question 6:** Differentiate between global process and sub-process.

[4 marks]

## Section D: Practical Questions

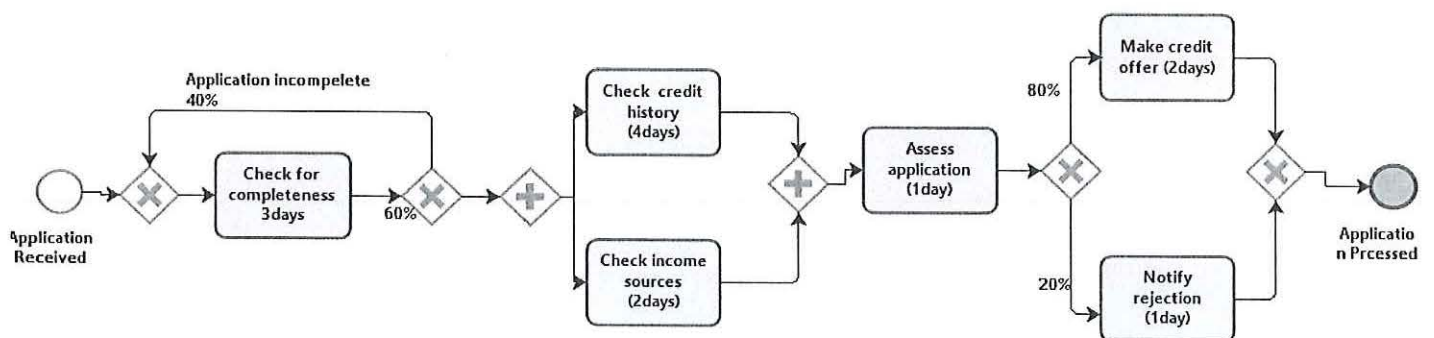
[20 Marks]

**Question 1: Model the following fragment of a business process for assessing loan applications.**  
[10 Marks]

A loan application is approved if it passes two checks: (i) the applicant's loan risk assessment, done automatically by a system, and (ii) the appraisal of the property for which the loan has been asked, carried out by a property appraiser. The risk assessment requires a credit history check on the applicant, which is performed by a financial officer. Once both the loan risk assessment and the property appraisal have been performed, a loan officer can assess the applicant's eligibility. If the applicant is not eligible, the application is rejected, otherwise, the acceptance pack is prepared and sent to the applicant.

**Question 2: Calculate the cycle time for the process below.**

[ 10 Marks]



The End