nAmIBIA UnIVERSITY
OF SCIEnCE AnD TECHnOLOGY

FACULTY OF COMPUTING AND INFORMATICS
DEPARTMENT OF INFORMATICS

QUALIFICATION : BACHELOR OF INFORMATICS	
COURSE NAME: PRINCIPLES AND APPLICATION OF INFORMATICS	COURSE CODE: PAI621s
QUALIFICATION CODE: 07BAIT	LEVEL: 6
SESSION: NOVEMBER 2022	PAPER: THEORY
DURATION: 3 HOURS	MARKS: 80

FIRST OPPORTUNITY EXAMINATION QUESTION PAPER	
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INSTRUCTIONS
1. Answer ALL the questions on the answer scripts provided.
2. For section A, write only the letter of the answer
3. Write clearly and neatly.
4. Number the answers clearly.

PERMISSIBLE MATERIALS
1. Calculator.

THIS QUESTION PAPER CONSISTS OF 6 PAGES
(Excluding this front page)

Section A: Multiple Choice Questions   **[15 marks]**

1. Applying for a travelling visa, is an example of which business process type?   [1 mark]
   A. Issue-to-resolution
   B. Application-to-approval
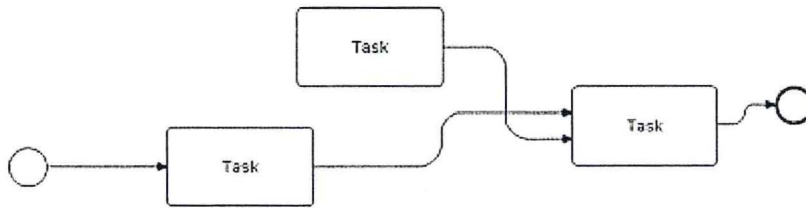   C. Procure-to-pay
   D. Order-to-cash

2. Which stage of business process evolution were the consumers and producers of a given good often the same persons?   [1 mark]
   A. Prehistoric times
   B. Ancient times
   C. Middle Ages:
   D. Industrial Revolution:

3. The output of the process identification phase is a _____.   [1 mark]
   A. Designation
   B. Evaluation Phase
   C. Process Architecture
   D. Root Cause Analysis

4. The secondary activity in Porter Value Chain dealing with the acquisition of inputs or resources is said to be.   [1 mark]
   A. Procurements
   B. Resources management
   C. Infrastructure
   D. Development

5. In Bussiness Process Modeling Notation (BPMN), which is true about an association?   [1 mark]
   A. Data descriptions between two Messages are connected to the same pool with an event object as input to or an output from an activity.
   B. Information structures exist between two Flow Objects
   C. Artifacts are associated with Activities and Control Objects to show that an event object is either an input to or an output from an activity
   D. A directional Association is often used with Data Objects to show that a Data Object is either an input to or an output from an activity

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6. What is wrong with the Bussiness Process Modeling Notation (BPMN) diagram below? [1 mark]

    A. The sequence flow starts with an end event
    B. The sequence flow starts with an intermediate event
    C. An activity starts without a sequence flow
    D. The activity has no attached intermediate event

7. The gateway controls which aspect of a business process?   [1 mark]
    A. Divergence and convergence
    B. The message
    C. The sequence and message flow
    D. The data

8. How do you indicate that the sub-process is being invoked?   [1 mark]
    A. Use a collapsed sub-process activity with a thinker border
    B. Use expanded sub-process activity with a thinker border
    C. Use collapsed and sub-process activity with a thin border
    D. Use collapsed and sub-process activity with a thicker border

9. Which stage of process discovery provides the basis for the definition of pools and lanes?
                                                                                 [1 mark]

    A. Identify the process boundaries
    B. Identify activities and events
    C. Identify resources and their handovers
    D. Identify the control flow

10. Why is it important to identifying patterns in the information provided by domain experts?
                                                                                 [1 mark]
    A. Patterns can be utilized for constructing parts of a process model
    B. Models have to look nice to be engaging to a wide audience
    C. order to progress with the project, it is important to have a short and precise set of working hypotheses
    D. They will be useful when designing resources and handovers

11. The following is a disadvantage for which methods: the models resulting from process mining may not be directly understandable. [1 mark]
    A. Observation
    B. Automatic process discovery
    C. Document analysis
    D. Interview based

12. A step that is required due for the regulatory environment of the business is called? [1 mark]
    A. Business Value-adding
    B. Non-value adding
    C. Value –adding
    D. Environment value adding

13. To understand the cause of process defects one need to do: [1 mark]
    A. Root cause analysis
    B. Waste elimination analysis
    C. Defects analysis
    D. Non value adding analysis

14. Factors related to a wrong assessment or an incorrectly performed step is discussed under which 6Ms? [1 mark]
    A. Milieu
    B. Man
    C. Method
    D. Material

15. 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? [1 mark]
A. Process owner
B. Process manager
C. Process supplier
D. Process analyst

Section B: Structured Questions [37 marks]

Question1: Briefly explain how the Gartner Hype cycle helps organisations with their technology investments decisions. [5 marks]

Question2: Explain how the process are managed and documented in the first three phases of the Capability Maturity Model Integrated (CMMI) framework. [6 marks]
   a. Level 1 (Initial):
   b. Level 2 (Managed):
   c. Level 3 (Defined):

Question3: As a process modeller, explain when it is appropriate to use: [5 marks]

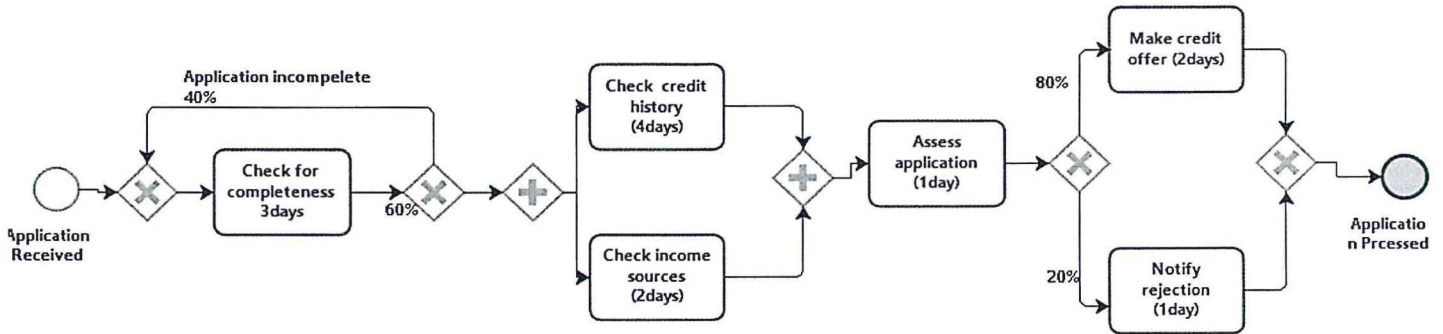   (a) Sub-process:
   (b) Process re-use

Question 4: Discuss some of the implications of having domain knowledge and modelling knowledge in different persons in an organisation. [9 marks]

Question 5: Discuss some of the limitations that the process analyst may encounter when gathering information about a process using the documentation technique. [8 marks]

Section C: Practical Based Questions   [28 marks]

Question1: Calculate the cycle time for the above process. Clearly illustrates the steps of your calculation.
[8 marks]

Question 2: Model the following fragment of a business process for assessing loan applications.
[10 marks]

Once a loan application has been approved by the loan provider, an acceptance pack is prepared and sent to the customer. The acceptance pack includes a repayment schedule, which the customer needs to agree upon by sending the signed documents back to the loan provider. The latter then verifies the repayment agreement: if the applicant disagreed with the repayment schedule, the loan provider cancels the application; if the applicant agrees, the loan provider approves the application. In either case, the process completes with the loan provider notifying the applicant of the application status.

Question 10: The table below consist of various symbols used in business process modelling projects. Name the symbol and describe their role in a process modelling exercise.   [10 marks]

No.	Symbol	Symbol name and description
A		
B		
C		

D		
E		

The end