



**PAMIBIA UNIVERSITY  
OF SCIENCE AND TECHNOLOGY**

**FACULTY OF COMPUTING AND INFORMATICS**

**DEPARTMENT OF INFORMATICS JOURNALISM AND MEDIA TECHNOLOGY**

<b>QUALIFICATION : BACHELOR OF INFORMATICS</b>	
<b>QUALIFICATION CODE: 07BAIT</b>	<b>COURSE LEVEL: NQF LEVEL 6</b>
<b>COURSE: SYSTEMS ANALYSIS AND DESIGN</b>	<b>COURSE CODE: SAD621S</b>
<b>DATE: JANUARY 2023</b>	<b>SESSION: 2</b>
<b>DURATION: 2 Hours</b>	<b>MARKS: 80</b>

<b>SECOND OPPORTUNITY/ SUPPLEMENTARY EXAMINATION QUESTION PAPER</b>	
<b>EXAMINER:</b>	<b>DR EDMORE CHIKOHORA MR GABRIEL NHINDA MS SINTE MUTELO</b>
<b>MODERATOR:</b>	<b>Mr GEREON KOCH KAPUIRE</b>

**THIS EXAMINATION PAPER CONSISTS OF 6 PAGES  
(INCLUDING THIS FRONT PAGE)**

**Instructions for the students**

1. Attempt all questions
2. Use a separate booklet to write your answers
3. Please ensure that your handwriting is legible, neat and presentable



**Section A:**

**[20 marks]**

1. The main purpose of the system investigation phase is to produce?
  - A. A system design report.
  - B. A system requirement report.
  - C. A systems feasibility report.
  - D. All of the above.
  - E. None of the above.
  
2. Structured design produces computer programs that are?
  - A. Easily.
  - B. Maintained.
  - C. Easily understood.
  - D. Both (a) and (b).
  - E. None of the above.
  
3. The systems conversion technique of totally removing the existing system and immediately implementing the new system is called a;
  - A. Pilot conversion.
  - B. Multiprocessing.
  - C. Parallel run phased conversion.
  - D. Direct cut-over.
  - E. None of the above.
  
4. A systems conversion method in which users, being used to an old system, continue to use the old system, alongside the new system, is called;
  - A. Pilot conversion.
  - B. Multiprocessing.
  - C. Parallel – run phased conversion.
  - D. Direct cut-over.
  - E. None of the above.
  
5. The feasibilities studied in preliminary investigation is (are);
  - A. Technical feasibility.
  - B. Economic feasibility.
  - C. Operational feasibility.
  - D. All of the above.
  - E. None of the above.
  
6. The strategy for eliciting information regarding the user's requirements is (are);
  - A. Prototyping.
  - B. All of the above.
  - C. None of the above.
  - D. Asking questions.
  - E. Obtaining information from the present system
  
7. The Systems Analyst learns of the manager's information needs through the use of;
  - A. Mail survey.
  - B. In – depth interview.
  - C. Controlled experiment.



- D. Observation.
  - E. Prototyping.
8. Which of the following would not be a major deliverable of the structured systems analysis phase?
- A. Data dictionaries.
  - B. Data flow diagrams.
  - C. Entity relationship diagrams.
  - D. Prototype model.
  - E. Use case diagram.
9. In a \_\_\_\_\_ one module of the new Information System is activated at a time.
- A. System Development Life Cycle.
  - B. CASE tool.
  - C. Phased Conversion.
  - D. Success factors.
  - E. Direct conversion.
10. The first step in the problem-solving process is to \_\_\_\_\_.
- A. Plan the algorithm.
  - B. Analyze the problem.
  - C. Desk-check the algorithm.
  - D. Evaluate and modify (if necessary) the program.
  - E. Draw an Entity Relationship Diagram.
11. In Systems Analysis and Design, Coding and testing are done in which manner?
- A. Ad hoc.
  - B. Cross-sectional.
  - C. Bottom-up.
  - D. Top-down.
  - E. Step-wise.
12. Which of the following statements are correct about the "The black-box concept"?
- A. Is invoked by describing a system in terms of inputs and outputs, leaving the transformation process a black box.
  - B. Assumes that the black box is independent.
  - C. Assumes that inputs and outputs will remain stable.
  - D. All of the above.
  - E. None of the above.
13. In relational database design, a group of related fields, is known as a;
- A. Tuple.
  - B. Schema.
  - C. Records.
  - D. File.
  - E. Relation.
14. The short statements that represent the steps the computer needs to follow to solve a problem are called;
- A. Flowcharts.
  - B. Flow diagrams.



- C. IPO charts.
  - D. Pseudo code.
  - E. Control statements.
15. The approach used in top-down analysis and design is \_\_\_\_.
- A. To prepare flowcharts after programming has been completed.
  - B. To identify a top – level function and then create a hierarchy of lower level modules and components.
  - C. To identify the top – level functions by combining many smaller components into a single entity.
  - D. All of the above.
  - E. None of the above.
16. Which of the following is (are) common reason(s) for changing an Information System in an organization?
- A. New requirements.
  - B. New technology.
  - C. Problems in the existing system.
  - D. All of the above.
  - E. None of the above.
17. Which of the following statements is not true?
- A. A structured chart is a sequential representation of program design.
  - B. The Real-Time system is a particular case of an on-line system.
  - C. Batch totals are not incorporated while designing real-time applications.
  - D. 4GLs are used for application prototyping.
  - E. None of the above.
18. A System Analyst designs a new system by;
- A. Identifying subsystems and the interfaces between subsystems.
  - B. Adopting a developed system to the present environment.
  - C. Developing the system as a large, single unit.
  - D. Propose alternatives to the current system.
  - E. Phased system conversion.
19. Backup and recovery procedures are primarily implemented to;
- A. Handle the contingency when a file gets corrupted.
  - B. To provide data redundancy.
  - C. To show different versions of data and programs.
  - D. All of the above.
  - E. None of the above.
20. The procedure for evaluating the relative performance of different computers, is done using a process called;
- A. Batch processing
  - B. Sequential processing
  - C. Bench marking
  - D. All of the above
  - E. None of the above





**Section B:**

**[30 marks]**

**Question 1:**

*"Most organizations use SWOT analysis as a strategic planning and management technique for competitive advantage".*

Based on the above insert, answer the following questions.

- i. What is SWOT Analysis? [2 marks]
- ii. Using an example of your choice, explain why SWOT Analysis important to businesses [4 marks]
- iii. You have been appointed as a consultant for ABC Holdings, a retail organization that would like to expand its businesses into neighboring countries. Describe how you will write a SWOT analysis for ABC Holdings. [6 marks]

**Question 2:**

In a software development project, Systems Analysts provide different types of maintenance. Describe using examples the different types of maintenance listed below;

- i. Corrective maintenance. [3 marks]
- ii. Adaptive maintenance. [3 marks]
- iii. Perfective maintenance. [3 marks]
- iv. Preventive maintenance. [3 marks]

**Question 3:**

*"In Systems Analysis and Design, Systems Changeover is the process of putting a new Information System online and retiring the old system".*

Explain the System Changeover methods listed below:

- i. Parallel operation [2 marks]
- ii. Phased operation [2 marks]
- iii. Pilot operation [2 marks]



**Section C:****[30 marks]****Question 1:**

The Critical Path Method takes a task's start time, its duration, and finish time to figure out which activities deserve the most attention (i.e. are "critical" for the project).


Carefully study the data given in Table 1 (The building project) and answer the questions that follow:

Table 1: The Building Project

Task ID	Task Description	Task Predecessors	Task Duration (days)
A	Project start		0
B	Buy material for A	A	10
C	Buy material for B	A	20
D	Build A	B, C	30
E	Build B	B, C	20
F	Polish and finish B	E	40
G	Join A and B	D, F	20
H	Project finish	G	0

- (a) Using the information provided in Table 1, draw a PERT Chart showing all the Tasks, Predecessors and Duration. [24 marks]
- (b) Calculate the critical path for the Building Project. [6 marks]

**END OF EXAMINATION**

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2022 -10- 18

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