



UGANDA INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY
EXAMINATIONS FOR ACADEMIC YEAR 2022/2023

DEPARTMENT: ICT

SEMESTER: ONE

PROGRAMME(S): DIPLOMA IN INFORMATION TECHNOLOGY SCIENCE (DITS)
DIPLOMA IN INFORMATION TECHNOLOGY BUSINESS (ITB)

YEAR OF STUDY: TWO

COURSE: SYSTEM ANALYSIS AND DESIGN

COURSE CODE : IT215

DATE: SATURDAY 27TH, MAY 2023

TIME: 9:00 AM – 12:00 NOON

DURATION: 3 HOURS

INSTRUCTIONS:

- (i) This paper contains two Sections: A (40 marks) & B (60 marks).
- (ii) Attempt ALL questions in Section A, and ONLY THREE questions in Section B.
- (iii) All questions in Section B carry equal marks.
- (iv) Credit will be given for use of relevant examples and illustrations.
- (v) Begin each number in Section B on a new page of the answer sheet.

SECTION A [40 MARKS]

Attempt **ALL** the Questions in this Section.

Write the correct alternative in the answer booklet provided

(2 marks @)

1. A problem's _____ will answer the question, "What does the user want to see either printed or displayed on the screen?"
a) Input b) Output c) Processing d) Purpose
2. The system study project includes _____
a) System analysis b) System design
c) Implementation d) Both A and B above
3. Advantages of data base system is (are) _____
a) Storage space duplication is eliminated
b) All applications share centralized files
c) Data are stored once in the data base and are easily accessible when needed
d) All of the above
4. A data flow diagram is _____
a) The modern version of flowchart
b) Mainly used at the systems specification stage
c) The primary output of the systems design phase
d) All of the above
5. Difference between Decision - Tables and Decision Trees is (are): _____
a) Value to end user
b) Form of representation
c) One shows the logic while other shows the process
d) All of the above
6. Which of the following is a function of the process step of data processing?
a) Protect b) Index c) Retrieval d) Update
7. Advantages of Relational Database Management systems are
a) Flexibility, of relating different logical files
b) Security controls can be more easily implemented
c) Data independence since it allows the database to grow by adding new attributes and relations
d) All of the above
8. The systems conversion technique of totally removing the existing system and immediately implementing the new system is called as
a) Crash conversion b) Phased conversion
c) Pilot conversion d) Parallel run

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9. Tracing, of any input record or process, performed on a system, back to its original source, is an
a) Audit trail b) Report generation c) Batch processing d) Conversion
10. Which of the following represents processor activities, methods, and procedures in a data flow diagram?
a) Datagram b) Actigram c) Feed back d) Flow chart
11. _____ use standardized symbols to represent an algorithm.
a) Flowcharts b) Flow diagrams c) IPO charts d) Pseudo code
12. The communication problem involves the
a) Analyst and the programmer b) Manager and the analyst
c) Programmer and the computer d) Operate and the computer
13. Which of the following is not a characteristic of a system?
a) Operates for some purpose b) Has homogeneous components
c) Operates within a boundary d) Has interacting components
14. The person communicating with the manager to identify information needs is the ____
a) Executive vice-president b) Vice-president of information system
c) Programmer d) System analyst
15. Changes made periodically to a system, after its implementation, is known as system ____
a) Analysis b) Design c) Development d) Maintenance
16. A consideration evaluated by management when planning to convert to a computer system is ____
a) Maintenance b) Available software
c) CPU sized speed d) All of the above
17. A square symbols _____
a) Defines a source or destination of system data
b) Identifies data flow
c) Represents a process that transforms incoming data flow(s) into outgoing data flows
d) Is a data store-data at rest, or a temporary repository of data
18. Which of the following systems implementation approaches should be used if you want to run the old system and the new system at the same time for a specified period?
a) Direct b) Pilot c) Parallel d) Phased

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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

20. A Decision table _____

- a) Represents the information flow
- b) Documents rules, that select one or more actions, based on one or more conditions, from a set of possible conditions
- c) Gets an accurate picture of the system
- d) Shows the decision paths

SECTION B [60 MARKS]

Attempt **ONLY THREE** Questions in this Section.

Question 1

- (a) Give two reasons explaining the relevance of conducting a preliminary investigation during the planning phase of the SDLC? **(4 marks)**
- (b) Discuss the **four** levels of feasibility study you would perform a development project **(8 marks)**
- (c) With relevant examples, explain the difference between Functional and Non-Functional Requirements of any system **(8 marks)**

Question 2

- (a) Define the following terms as used in a systems development and maintenance. **(10 marks)**
 - (i) Systems Analyst
 - (ii) Developer
 - (iii) Systems administrator
 - (iv) System development life cycle
 - (v) Feasibility study
- (b) Explain any **three** roles of a Systems Analyst in Information Systems Projects **(6 marks)**
- (c) Explain any **three** system development methodologies **(6 marks)**

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Question 3

- (a) What is prototyping? **(2 marks)**
- (b) Give and explain any two types of prototyping methods **(4 marks)**
- (c) Illustrate with a diagram the steps of the prototyping methodology **(6 marks)**
- (d) Explain the following types testing in software testing. **(8 marks)**
 - (i) Unit Testing
 - (ii) Integration Testing
 - (iii) Acceptance testing
 - (iv) Functional testing

Question 4

- (a) With relevant examples, explain the given terms below as used in Information systems. **(10 marks)**
 - (i) Data
 - (ii) Information
 - (iii) System
 - (iv) Information technology
 - (v) Data processing cycle
- (b) Explain any **five** fact finding techniques. **(10 marks)**

Question 5

- (a) Information systems can be classified as Operations Support Systems and Management Support Systems.
 - i) Explain the terms Operations Support Systems and Management Support Systems. **(4 marks)**
 - ii) Give and explain any three examples that fall under each of the classification of Information Systems. **(12 marks)**
- (b) With examples, explain the kinds of systems given below. **(4 marks)**
 - (i) Process control systems
 - (ii) Decision-support Systems