



**ELIZADE UNIVERSITY,
ILARA-MOKIN,
ONDO STATE**

**FACULTY: BASIC AND APPLIED SCIENCES
DEPARTMENT: MATHEMATICS AND COMPUTER SCIENCE
2nd SEMESTER EXAMINATIONS
2015 / 2016 ACADEMIC SESSION**

COURSE CODE: CSC 210

COURSE TITLE: Systems Analysis and Design

DURATION: 2 ½ Hours

COURSE LEADER: Dr. K. Agbele

A rectangular box containing a handwritten signature in black ink, which appears to be "K. Agbele".

HOD's SIGNATURE

INSTRUCTION:

The paper comprises of **TWO SECTIONS**. You should answer **ALL QUESTIONS** from **SECTIONS A** and answer Question 1 and any other **TWO** Questions from **SECTION B**. For **SECTION A**, **10** marks are available while **50** marks are available for **SECTION B**. There are **60** marks in total for the examination paper. The exam paper is worth **60%** of the overall mark for **SYSTEMS ANALYSIS & DESIGN**.

Students are warned that possession of any unauthorized materials in an examination is a serious offence

SECTION A (All questions are Compulsory)

1. How many steps are in the systems development life cycle (SDLC)? A. 4 B. 5 C. 6 D. 10
2. The first step in the systems development life cycle (SDLC) is:
A. Analysis B. Design C. Problem/Opportunity Identification D. Development and Documentation
3. Most modern software applications enable you to customize and automate various features using small custom-built "miniprograms" called: A. macros B. code C. routines D. subroutines
4. The organized process or set of steps that needs to be followed to develop an information system is known as the: A. analytical cycle B. design cycle C. program specification D. system development life cycle
5. How many steps are in the program development life cycle (PDLC)? A. 4 B. 5 C. 6 D. 10
6. The make-or-buy decision is associated with the _____ step in the SDLC.
A. Problem/Opportunity Identification B. Design C. Analysis D. Development and Documentation
7. In the Analysis phase, the development of the _____ occurs, which is a clear statement of the goals and objectives of the project. A. documentation B. flowchart C. program specification D. designs
8. Actual programming of software code is done during the _____ step in the SDLC.
A. Maintenance and Evaluation B. Design C. Analysis D. Development and Documentation
9. Enhancements, upgrades, and bug fixes are done during the _____ step in the SDLC. A. Maintenance and Evaluation B. Problem/Opportunity Identification C. Design D. Development and Documentation
10. The _____ determines whether the project should go forward.
A. feasibility assessment B. opportunity identification C. system evaluation D. program specification
11. Technical writers generally provide the _____ for the new system.
A. programs B. network C. analysis D. documentation
12. _____ design and implement database structures.
A. Programmers B. Project managers C. Technical writers D. Database administrators
13. _____ spend most of their time in the beginning stages of the SDLC, talking with end-users, gathering information, documenting systems, and proposing solutions.
A. Systems analysts B. Project managers C. Network engineers D. Database administrators
14. _____ manage the system development, assign staff, manage the budget and reporting, and ensure that deadlines are met. A. Project managers B. Network engineers C. Graphic designers D. Systems analysts
15. _____ is the process of translating a task into a series of commands that a computer will use to perform that task. A. Project design B. Installation C. Systems analysis D. Programming
16. Debugging is: A. creating program code B. finding and correcting errors in the program code
C. identifying the task to be computerized D. creating the algorithm
17. Translating the problem statement into a series of sequential steps describing what the program must do is known as: A. coding B. debugging C. creating the algorithm D. writing documentation
18. Translating the algorithm into a programming language occurs at the _____ step of the PDLC.
A. Debugging B. Coding C. Testing and Documentation D. Algorithm Development
19. The problem statement should include all EXCEPT: A. input B. output C. processing D. storage.
20. The problem statement includes the _____, which lists specific input numbers a program would typically expect the user to enter and precise output values that a perfect program would return for those input values.
A. testing plan B. error handler C. IPO cycle D. input-output specification

SECTION B (You should ANSWER Question 1 and any other two QUESTIONS)

Question1 (a)

Personal Trainer, Inc. owns and operates fitness centers in Abuja municipalities. The centers have done well, and the company is planning a national expansion by opening a new “supercenter” in Lagos. Personal Trainer’s President, Mr. Ayetiran, hired an IT consultant, *BenjaminFavourStephenAdemola*, to help develop an information system for the new facility.

During the project, *BenjaminFavourStephenAdemola* will work closely with *EzekielAgbodoOkonofuaEbedi* who will manage the new operation in Lagos.

Background

You are enjoying your job as a student intern at Personal Trainer. Last week, *BenjaminFavourStephenAdemola* asked you to help him plan the new information system project in Lagos. *TilewaEssienWiseBamiduro* knows that you have completed several information systems courses at Elizade University, and that you have studied project management tools and techniques. Specifically, he wants you to get ready for the next set of systems development tasks, which will be requirements modelling for the new system. Yesterday, *BenjaminFavourStephenAdemola* called you into his office to discuss the specific tasks he wants you to perform. After meeting with *BenjaminFavourStephenAdemola*, you sit down and review your notes. He wants you to treat the set of tasks as a project, and to use project management skills to plan the tasks. Here is what he suggested to you as a work breakdown structure, including the duration he estimated for each task:

- First, you need to meet with fitness center managers at other Personal Trainer locations (5 days).
- After these meetings, you can conduct a series of interviews (5 days).
- When the interviews are complete, two tasks can begin at the same time: you can review company records (3 days) and observe business operations (8 days).
- When you have reviewed the records and observed business operations, you can analyze the Bumblebee accounting software (5 days) and study a sample of sales and billing transactions (2 days).
- After completing the analysis and studying the sale transactions, prepare a report for **Mr. Aruleba** (1 day).

You are excited about the opportunity to practice your acquired skills, and you start to work on the following list:

Tasks

1. Create a table listing all tasks separately, with their duration. (3 marks)
2. Identify all dependent tasks, and indicate what predecessor tasks are required. (2 marks)
3. Construct a PERT/CPM chart that shows ES, EF, LS, and LF for the project described above (using **Dr. Agbele’s** PERT/CPM notation). (5 marks)
4. Determine the overall duration of the project, and identify the critical path (3 marks)

Question 1 (b)

Background

You are enjoying your job as a student intern at Riverside financial institution domiciled in Abuja. You have been asked by Riverside financial institution CEO; **Mr. Aregbesola**, to conduct user training sessions during the implementation phase for a new information system. You must develop a specific schedule for the tasks (the estimated task duration for each is shown in the parenthesis):

- First, you need to send an e-mail message to all department managers announcing the training session (1 day).
- After the e-mail message goes out, two tasks can begin at the same time: you can develop the training material (4 days) and confirm arrangements for the training facility you plan to use (11 days).
- As soon as the training material is complete, you can work on two tasks at once: arrange to have copies of handout material printed (3 days) and develop a set of Power Point Slides (4 days).
- When the Power Point Slides are ready, you conduct a practice session with the instructor who will assist you (1 day).
- Finally, when the practice session is over, the handout material is ready, and the training facility is confirmed, you conduct the user training sessions (3 days).

You are excited about the opportunity to practice your acquired skills, and you start to work on the following list:

Tasks

1. Create a table listing all tasks separately, with their duration. **(3 marks)**
2. Identify all dependent tasks, and indicate what predecessor tasks are required. **(2 marks)**
3. Construct a PERT/CPM chart that shows ES, EF, LS, and LF for the project described above (using **Dr. Agbele's** PERT/CPM notation). **(5 marks)**
4. Determine the overall duration of the project, and identify the critical path **(3 marks)**

Question 2.

(a) Systems modelling techniques can be used to model the three different aspects of information systems. Discuss briefly the three models/aspects and give examples of modelling techniques used for each model. **(4 marks)**

(b) Explain why it is important for system analyst to understand a company's strategic plan and how such a plan influence day-to-day business operations. Furthermore distinguish between SWOT analysis and a company's strategic plan with appropriate arguments and evidence to support your answer. **(5 marks)**

(c) In Joint Application Development, explain the categories of participants and their roles. Hence, explain a typical agenda for a JAD session. **(4 marks)**

Question 3.

(a) You are preparing a feasibility report for a proposed IT system and have decided to write the contents page first to help you structure your report. Produce your contents page and describe the purpose of each section. **(10 marks)**

(b) Explain the purpose of a feasibility report, and when in the system development life cycle it should be produced. **(3 marks)**

Question 4.

- (a) Briefly describe how prototypes can be used in other stages of the system development life cycle. **(4 marks)**
- (b) Explain what a prototype is and describe how it can be used in requirements gathering. **(5 marks)**
- (c) What are the advantages and disadvantages of prototyping? **(4 marks)**

Question 5.

- (a) What is a CASE tool and what features would you expect a CASE tool to have? **(4 marks)**
- (b) Describe how a CASE tool can help to improve the quality of a system being developed. **(5 marks)**
- (c) What are JAD and RAD, and how do they differ from traditional fact-finding methods? **(4 marks)**