

DEPARTMENT OF COMPUTER SCIENCE,
AHMADU BELLO UNIVERSITY, ZARIA
COSC 305: System Analysis and Design
FIRST SEMESTER EXAMINATION (2016/2017 Session)

Instruction: Answer **ONLY** four questions

Duration: 2hrs

1.
 - a)
 - i. What is the goal of analysis phase?
 - ii. What is the final deliverable from the analysis phase, and what does it contain?
 - b)
 - i. What is the difference between an as-is system and a to-be system?
 - ii. What is requirements definition, and what is the purpose?
 - c) Describe the basic steps of the analysis phase.
2.
 - a) Who is an Infrastructure analyst?
 - b)
 - i. What is the goal of design phase?
 - ii. What is the final deliverable from the design phase, and what does it contain?
 - c) Describe the principal steps in the design phase.
3.
 - a)
 - i. What is SDLC?
 - ii. What is deliverable in SDLC? identify any two deliverables in the Planning and Implementation phases of SDLC?
 - b) What are the roles of the approval committee?
 - c) Describe the three major system development methodologies in SDLC.
4.
 - a) Generate a use case description for ATM **withdrawal** process
 - b) Draw a use case diagram for an ATM System
 - c) Write short notes on the following:
 - i. Use case diagram
 - ii. Class diagram
 - iii. Sequence diagram
 - iv. Behavioral state machine diagram
 - v. Process model
5.
 - a) Given the cashflow table below, determine the
 - i) Net present value (NPV)
 - ii) Return on investment (ROI)

Take $r = 0.2$

300 LEVEL PAST

Benefits		Year 1	Year 2	Total
Increased Sales		600,000	630,000	1,230,000
Reduced Inventory cost		68,000	68,000	136,000
Total Benefits		668,000	698,000	1,366,000
Development Cost				
2 Servers	255,000	0	0	0
Labour cost	125,00	0	0	0
Total Dev. Cost	380,000	0	0	0
Operational Cost				
Hardware		70,000	80,000	150,000
Software		55,000	30,000	85,000
Total Operational cost		125,000	110,000	235,000
Total Costs	380,000	125,000	110,000	650,000

b) from your result, do you think the project should be approved? **Why?**

c) Explain the three design strategies that could be adopted by an organization when developing a system

6. a) List the major roles of a project manager

b) As a project manager, having estimated the total adjusted function point of the project to be 321, what will be

i) the size of the system in number of lines of codes if you are to develop it using a programming language that requires **55 lines of codes per function point**

ii) the effort required to develop the system

iii) the time required to develop the system

c) List the different categories of testing and give 2 types of testing under each category.

Department of Computer Science
Faculty of Physical Sciences, Ahmadu Bello University, Zaria.
System Analysis and Design (COSC 305)
2017/2018 Session

Instruction: Answer ONLY Four Questions (Each question: 15marks)

Time: 2hrs.

1. a. i. What is SDLC?
ii. What are the deliverables in SDLC? identify any two deliverables in the Planning and Implementation phases of SDLC?
b. What are the roles of the approval committee?
c. Describe the three major system development methodologies in SDLC.
2. a. Generate a use case description for ATM withdrawal process
b. Draw a use case diagram for an ATM System
c. Write short notes on the following:
i. use case diagram ii. Class diagram iii. Sequence diagram
iv. Behavioral state machine diagram v. As-Is System
3. a. i. What is the goal of analysis phase?
ii. What is the final deliverable from the analysis phase, and what does it contain?
b. i. What is the difference between an as-is system and a to-be system?
ii. What is requirement definition, and what is the purpose?
c. Describe the basic steps of the analysis phase.
4. a. Consider migrating from an old system to a new system. Enumerate the three conversion strategies and two ways or methods of conversion for each of the conversion strategy
b. i. What is the goal of design phase?
ii. What is the final deliverable from the design phase, and what does it contain?
c. Describe the principal steps in the design phase.

5.
 - a. List the major roles of a project manager
 - b. As a project manager, having estimated the total adjusted function point of the project to be **483**, what will be
 - i. the size of the system in number of lines of codes if you are to develop it using a programming language that requires **47 lines of codes per function point**
 - ii. the effort required to develop the system
 - iii. the time required to develop the system
 - c. List the different categories of testing and give 2 types of testing under each category.

6.
 - a. Given the cashflow table below, determine the
 - i. Net present value (NPV)
 - ii. Return on investment (ROI)

Take $r = 0.4$

 - iii. from your result, do you think the project should be approved? **Why?**

Benefits		Year 1	Year 2	Total
Increased Sales		600,000	650,000	1,250,000
Reduced Inventory cost		72,000	64,000	136,000
Total Benefits		672,000	714,000	1,386,000
Development Cost				
2 Servers	260,000	0	0	0
Labour cost	128,000	0	0	0
Total Dev. Cost	388,000	0	0	0
Operational Cost				
Hardware		70,000	80,000	150,000
Software		55,000	40,000	95,000
Total Operational cost		125,000	120,000	245,000
Total Costs	388,000	125,000	120,000	245,000

- b. List the three requirement analysis techniques that will enable potential system users identify their needs
- c. Explain the three design strategies that could be adopted by an organization when developing a system. State the disadvantage of each strategy.