

International Islamic University Chittagong
Department of Computer and Communication Engineering

B. Sc. Engineering in CCE

Midterm Examination, Spring 2024

Course Code: CCE-3507

Course Title: **System Analysis, Design and Development**

Time: 1 Hour 30 Minute

Full Marks: 30

(i) Answer all of the questions. The figures in the right-hand margin indicate full marks.

(ii) Course Outcomes (COs) and Bloom's Levels are mentioned in additional Columns.

Course Outcomes (COs) of the Questions

CLO1 Analyse the nature of information in systems analysis and design and its various components.

CLO2 Determine feasibility and handle managerial issues like data input and output related to the design.

Bloom's Levels of the Questions

Letter Symbols	Meaning	Bloom's Levels of the Questions								
		R	U	Ap	An	E	C			
		Remember	Understand	Apply	Analyze	Evaluate	Create			
Q.1	a)	List the advantages of using systems analysis and design techniques in approaching computerized information systems.					CLO1	U	2	
	b)	What are the essential qualities of information? A large hospital wants to streamline patient care and improve medical record access. What types of operational, tactical and strategic information are needed to develop an information system that facilitates seamless communication and record access?					CLO1	An	4	
	c)	List the situations that warrant use of joint application design (JAD) in place of personal organizational interviews. List the potential benefits and drawbacks of using JAD as an alternative to personal interviews.					CLO1	R	4	
Q.2	a)	Illustrate the systems development life cycle (SDLC) along with seven phases. List the activities performed and the outputs produced during the different phases of this cycle.					CLO1	R/ U	6	
	b)	You're gathering information about customer satisfaction with a service. Design a questionnaire using both open-ended and closed questions so that they follow good practice and result in useful information for the systems analysts.					CLO1	Ap/ An	4	
Q.3	a)	How would you determine whether the development of a proposed project is feasible or not? Discuss in brief. Write down the steps followed in feasibility analysis of a project.					CLO2	An	5	
	b)	GEC Electronics, a small company, has set up a computer service. The table that follows shows the revenue expected for the first five months of operation, in addition to the costs for office remodeling and so on. Determine the cash flow and accumulated cash flow for the company. When is GEC's expected to show a profit?					CLO2	An	5	

Table 3(b)

	July	August	September	October	November
Revenue	\$35,000	\$36,000	\$42,000	\$48,000	\$57,000
Costs					
Office remodeling	\$25,000	\$8,000			
Salaries	11,000	12,100	\$13,300	\$14,600	\$16,000
Training	6,000	6,000			
Equipment lease	8,000	8,480	9,000	9,540	10,110
Supplies	3,000	3,150	3,300	3,460	3,630

OR

- Q.3** a) What are the three ways to find out about problems or opportunities that might call for a systems solution? Discuss in brief. **CLO2 An 3**
- b) T. K. Paper Company has asked for your help in comparing its present computer system with a new one its board of directors would like to see implemented. The proposed system costs and present system costs are as given in **Fig. 3(b)**. **CLO2 An 7**

Item	Proposed System Costs	Present System Costs
Year 1		
Equipment lease	\$20,000	\$11,500
Salaries	30,000	50,000
Overhead	4,000	3,000
Development	30,000	—
Year 2		
Equipment lease	\$20,000	\$10,500
Salaries	33,000	55,000
Overhead	4,400	3,300
Development	12,000	—
Year 3		
Equipment lease	\$20,000	\$10,500
Salaries	36,000	60,000
Overhead	4,900	3,600
Development	—	—
Year 4		
Equipment lease	\$20,000	\$10,500
Salaries	39,000	66,000
Overhead	5,500	4,000
Development	—	—

Fig. 3(b)

The following are system benefits for T. K. Paper Company:

Year	Benefits
1	\$55,000
2	75,000
3	80,000
4	85,000

- (i) Using the break-even analysis technique, determine the year in which T. K. Paper will break-even.
- (ii) Use the costs of T. K. Paper's proposed system to determine the payback period. (Use the payback method.)
- (iii) Graph the benefits versus the costs and indicate the payback period.