

ISLAMIC UNIVERSITY OF TECHNOLOGY (IUT)
ORGANISATION OF ISLAMIC COOPERATION (OIC)

Department of Computer Science and Engineering (CSE)

SEMESTER FINAL EXAMINATION

SUMMER SEMESTER, 2011-2012

DURATION: 3 Hours

FULL MARKS: 150

CSE 4407: System Analysis and Design

Programmable calculators are not allowed. Do not write anything on the question paper.

There are **8 (eight)** questions. Answer any **6 (six)** of them.

Figures in the right margin indicate marks.

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1. a) List the seven phases of the system development life cycle (SDLC). 7
 - b) Which system development model include capability to accommodate changing user requirement, less cost involved in scope change, early delivery of working software, easier testing and debugging during a smaller iteration? Briefly explain that model. 10
 - c) Describe the five levels of maturity of CMM framework? 8
 2. a) How Gantt Chart can be used for project scheduling? 5
 - b) What are the two basic types of interview questions? Which type of interview questions is appropriate when the analyst is interested in breadth and depth of reply? Mention its advantages and disadvantages briefly. 2+10
 - c) Write some advantages of questionnaire. 8
 3. a) What is bipolar and probing question? Describe the three basic ways of structuring interviews. 5+10
 - b) Briefly explain the five major varieties of closed questions. 10
 4. a) What are the symbols of data flow diagram (DFD)? Briefly describe with necessary figures. 1+4
 - b) A Super Bank has multiple branches, and each account is serviced by one branch. Each branch is tracked by a branch number, address, and phone number. The bank has personal and commercial customers. Customers have accounts, and each account is keyed on a number and contains information on the balance and the date when it was opened. Customer information includes the customer number, name, and mailing address. Commercial customers also have attributes for credit rating, contact person, and contact person phone. Personal customers have attributes for home phone and work phone. 10+10

Draw a data flow diagram and data dictionary for the Super Bank.

5. a) Mention some common errors that occur when drawing a data flow diagram. 5
- b) IUTAA is planning an annual picnic in November. To encourage sustained membership, the recreation committee has decided to serve each member according to the number of years he has been a member, as follows: 10+10

If a member has been with the association for one year or less, he is entitled one hamburger, one bottle of soft drink. Those with two years of membership are allowed

one hamburger and three bottles of soft drink. Those with more than three years of membership get one double burger and no limit on soft drinks.

Construct a decision table and decision tree to help the person in charge to handle the orders.

6. a) Briefly explain the three classes of items to be defined in Data dictionary? 9
- b) A Virginia-based mail-order house specializes in microcomputers and supplies for various microcomputer makes. It offers discounts based on the number of units ordered. When an order is received, an invoice is generated that includes the quantity, unit cost, discount, and shipping and handling charges. Discount is computed as follows: 10

If Invoice-Total is \$3000 or over, discount is 20%.

If Invoice-Total is between \$2000 and \$2999, discount is 10%.

If Invoice-Total is between \$1000 and \$1999, discount is 5%.

If Invoice-Total is under \$1000, no discount allowed.

Represent the information in Structured English.

- c) What are the tools of structured analysis? 6
7. a) List three techniques for comparing costs and benefits. Distinguish between tangible and intangible benefits. 3+4
- b) IUT Computer Center has set up a computer service. The table below 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. When is IUT Computer Center expected to show a profit? 10

		January	February	March	April	May
Revenue (\$)		35,000	36,000	42,000	48,000	57,000
Costs	Decoration	25,000	8,000			
	Salaries	11,000	12,100	13,300	14,600	16,000
	Training	6,000	6,000			
	Equipment buy	8000	8480			
	Supplies	3,000	3,150	3,300	3,460	3,630

- c) Briefly explain break-even analysis and present value analysis. 8
8. a) What is the goal of designing input data? In entering data, which things an operator need to know? 1+3
- b) Source data are input into the system in a variety of ways. Briefly explain those input media and devices. 7
- c) What is a form? Summarize the characteristics of action, memory, and report forms. 1+4
- d) Briefly explain the requirements of 'form design'. 9