Bangabandhu Sheikh Mujibur Rahman Science and Technology University
Department of Computer Science and Engineering
3rd Year 1st Semester B.Sc. Engineering Examination-2016

Course No: CSE 300 Course Title: System Analysis and Design
Total Marks: 60 Time: 3 Hours

N.B.
i) Answer SIX questions taking any THREE from each Section
ii) All questions are of equal values.
iii) Use separate answer script for each section

Section-A

1. a) "Data may be inputted to a system for producing information"-explain this statement briefly. 2
   b) The management structure of an organization is pyramid; describe it with appropriate diagrams. 4
   c) Describe the block diagram for master file creation. 2
   d) How many information should have to use by an organization? 2

2. a) Let you are a system analyst; you have to analyze & design the information system of BSMRSTU; now describe the steps of system life cycle according to the BSMRSTU. 7
   b) Briefly describe the responsibilities of an information systems analyst. 3

3. a) Think you are a system analyst; you have to analyze & design the information system of BSMRSTU. So you have to take interview of perspective persons from BSMRSTU; now you should point out the techniques for interview. 5
   b) Mention the information sources according to the department of CSE of BSMRSTU. 3
   c) List the qualities of information. 2

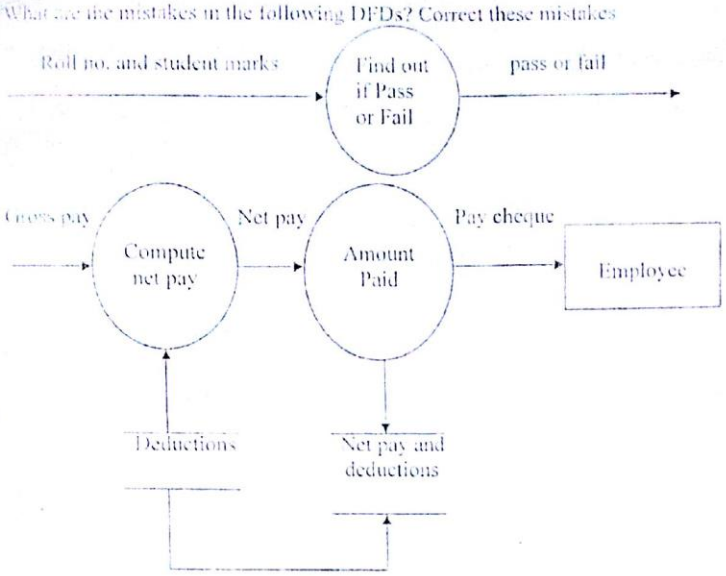
4. a) What academic qualifications are important for systems work? Explain. 2
   b) What is feasibility study? Write down the steps of feasibility study. 4
   c) Consider you are a member of receiving office of an organization; you have to receive the pre-ordered items from the vendors; now draw the DFD for receiving process. 4

Section-B

5. a) What do you mean by cost-benefit analysis? List the direct costs and indirect costs. 3
   b) A system costs 1.00 lakhs taka to install and 30,000 taka per month as recurring expenses. The benefit per month is 31,740 taka. Assuming an interest rate of 1.5%. What is the payback period of the investment? 5
   c) Give two examples of tangible and intangible benefits. 2

6. a) Draw the physical and logical DFDs for the following activity: 4
   "Getting your mark sheet from BSMRSTU."
   b) What is a context diagram? 1

6. a) What are the mistakes in the following DFDs? Correct these mistakes 3



b) Distinguish between a physical and a logical DFD. 2

7 a) Briefly explain the process specification methods that are used to express computational procedures. 2

b) An organization maintains the following policies to provide discount of the customers. Give a discount of 5% if the customer pays advance or if the purchase is for 10,000 taka or more and the customer is a regular customer. Write the above process using Structured English 5

c) What is the difference between security and privacy? Do secure systems ensure privacy? 3

8 a) Discuss the concepts of MIS and DSS. How are they related? How do they differ? 5

b) Add a modulus-11 check digit to the code: 48467 2

c) What are the primary objectives of control? Are there exists any differences between control and audit? If yes, you should write the differences; if no, you should limit your answer within no. 3

Bangabandhu Sheikh Mujibur Rahman Science and Technology University, Gopalganj
Department of computer Science & Engineering
3rd year 2nd Semester B.Sc. Engg. Examination-2015
Course No.: CSE350 Course Name: System Analysis and Design

Full Marks: 70 Times: 4 Hours

N.B.:
i. Answer **SIX** questions, taking any **THREE** from each section.
ii. All questions are of equal values
iii. Use **separate answer script** for each section.

SECTION A

1.	a)	Define a system. What are the characteristic and element of ~~information~~ system?	1+4
	b)	How important is the informal information system in system analysis? Explain.	2.67
	c)	Discuss the concepts of MIS and DSS. How are they related? How do they differ?	2+2
2.	a)	What is system development life cycle?	1
	b)	How would an analyst determine the user's need for a system? Explain.	3.67
	c)	Why is a system proposal so crucial for system design?	3
	d)	When does an analyst terminate a project? How does it tie in with post implementation?	2+2
3.	a)	What do you mean by quality control? Give example.	1
	b)	Elaborate on the technical and interpersonal skills required of systems analysts.	4.67
	c)	What academic qualifications are important for systems work? Explain.	3
	d)	Discuss the behavioral issues involved in understanding the analyst/user interface.	3
4.	a)	Where does information originate?	1
	b)	Summarize the advantages and limitations of interviews and questionnaires.	2+2
	c)	Distinguish between direct and indirect cost.	2
	d)	Describe the major varieties of closed questions.	4.67

SECTION B

5.	a)	What is structured analysis? Write down the attributes of it.	1+3
	b)	What is DFD? Describe the procedure used in constructing DFD.	1+3
	c)	What points should be considered in constructing a data dictionary? Be specific.	3.67
6.	a)	What is feasibility study? Discuss its importance.	4
	b)	Illustrate the key considerations that are involved in feasibility study.	3
	c)	Discuss the classifications of costs and benefits	3
	d)	What is present value of $10000 invested at 15 percent interest for six years.	1.67
7.	a)	What is the goal of input design?	1
	b)	What is a form? Summarize the characteristics of action, memory and report forms.	1+3
	c)	What is system testing? Describe the various types of system testing.	3.67
	d)	Explain the levels of quality assurance of a system.	3
8.	a)	Why do we test systems? How important is testing?	2+2
	b)	What software criteria are considered for selection? Summarize.	3.67
	c)	What is system security? Explain the threats to system security.	1+3

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Bangabandhu Sheikh Mujibur Rahman Science and Technology University
Department of Computer Science and Engineering
3rd Year 2nd Semester B.Sc. Engineering Examination-2014
Course No. : CSE350, Title: System Analysis and Design

Full Marks: 70 Times: 4 Hours

N.B.:
i. Answer **SIX** questions, taking any **THREE** from each section.
ii. All questions are of equal values
iii. Use **separate answer script** for each section.

Section- A

1.	a) Define system with example. Mention the three basic implication of system concepts.	4
	b) Discuss the characteristics of a system.	3.67
	c) Distinguish between a physical and abstract system.	4
2.	a) Define system analyst.	1
	b) What is SDLC? Describe its steps in brief.	5
	c) Write down the roles of system analyst.	2.67
	d) Summarize the necessary skils of a system analyst?	3
3.	a) Where does information originate?	1.67
	b) List and explain the steps in interviewing.	5
	c) Describe the major varieties of closed questions.	5
4.	a) What is structured analysis? Write down the attributes of it.	4
	b) What is DFD? What are the symbols used in drawing DFD?	3
	c) What is data dictionary? Why is it used?	2
	d) Briefly explain the concept of decision tree.	2.67

Section - B

5.	a) What is feasibility study? Write down the steps of feasibility study.	4
	b) Illustrate the key considerations that are involved in feasibility study.	3
	c) What cost elements are considered in cost/benefit analysis? Which element do you think is the most difficult to estimate? Why?	3
	d) What is present value of $5000 invested at 20 percent interest for five years.	1.67
6.	a) What is a form? Classify and distinguish each of the form.	5
	b) Discuss briefly the requirements of form design.	3
	c) What design methodology is used in system design? Explain.	3.66
7.	a) Why do we test systems?	2
	b) Write down the steps of system testing.	1.67
	c) Briefly describe the factors that affect the quality of a system.	5
	d) Explain the levels of quality assurance of a system.	3
8.	a) What is implementation? Write down the steps of conversion.	3
	b) What software criteria are considered for selection? Summarize.	4
	c) Why do system fail?	2.67
	d) What is system security? List the potential threats.	2

Bangabandhu Sheikh Mujibur Rahman Science and Technology University
Department of Computer Science & Engineering
3rd Year 1st Semester B.Sc. Engineering Examination-2017

Course Title: System Analysis and Design **Course Code: CSE 300**
Full Marks: 60 **Time: 3(Three) Hours**

N.B.
i) Answer **SIX** questions, taking any **THREE** from each section.
ii) All questions are of equal values.
iii) Use separate answer script for each section.

SECTION-A

Q.1 (a) What are the qualities of information? 2

(b) What is the relation between analysis and design? Is it possible to design a system without analysis? If yes how? If not why? 4

(c) What is operational information? In what way is it different from strategic information? For making marketing management system what would be the operational information required? 4

Q.2 (a) Define data mining with example. What is the difference between OLTP and Batch processing of data? 2

(b) Is up-to-date information always timely? If not, give an example of up-to-date but not timely information? 3

(c) Suppose you are designing an information system for BSMRSTU library. Describe the life cycle of your entire system analysis and design with appropriate example with each step. 5

Q.3 (a) What is the difference between MIS and DSS? 2

(b) Think you are a system analyst; you have to analyze & design the information system of BSMRSTU; So you have to take interview of perspective persons from BSMRSTU; now you should point out the techniques for interview. 4

(c) How should an analyst prepare before an interview? Are there some guidelines for good interviewing? Give reasons. 4

Q.4 (a) Distinguish between technical, operational, and economic feasibility. 3

(b) Give an example of a solution which is technically feasible, but not operationally feasible. 3

(c) A system costs TK 1,30,000 to install and TK 2000 per month as recurring expenses. The benefit per year is TK 33,740. Assume an interest rate of 1.5% per month, what is the payback period of the investment?(Use payback method with interest) 4

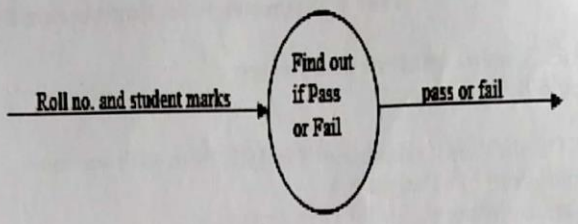
SECTION-B

Q.5 (a) Draw the physical and logical DFDs for the following activity:
"Getting your mark sheet from BSMRSTU." 4

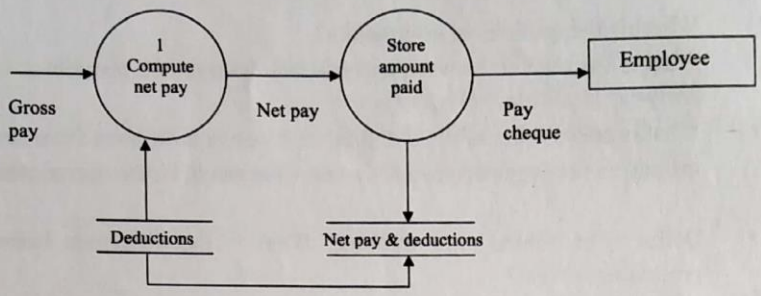
(b) What is a context diagram? 1

(c) What are the mistakes in the following DFDs? Correct these mistakes.

I.



II.



(d) Distinguish between a physical and a logical DFD. 2

Q.6 (a) What is the Relationship between Interaction and Class Diagrams? 3

(b) An organization maintains the following policies to provide discount of the customers. Give a discount of 5% if the customer pays advance or if the purchase is for 10,000 taka or more and the customer is a regular customer. Write the above process using Structured English 3

(c) Draw a Use-Case diagram for the "**Course Registration**" system for the CSE department of BSMRSTU. 4

Q.7 (a) What is slack and surplus variable? 2

(b) Define complete decision table and different type of specification in a decision table. 3

(c) Using Simplex method, maximize the objective function $Z=6X_1+8X_2$ for the following constraint:

$5X_1+10X_2<=60$

$4X_1+4X_2<=40$

$X_1, X_2>=0$

8 (a) A small project is consists of 9 activities for which relevant data are given below. 3+2

Activity	Immediate predecessors	Completion Time (week)
A	-	5
B	-	6
C	A,B	4
D	A	3
E	A	1
F	E	4
G	D,F	14
H	B,C	12
I	G,H	2

i) Draw the network and project completion time
ii) Find the critical path for this project

(b) The CSE department of BSMRSTU launches scholarship for the student for every semester. The department uses the following rules to give the scholarship. If a student's attendance is 80% or above and the GPA is 3.90 or more, classify the scholarship type as A. If the student's attendance is under 80% and if the GPA is 3.90 or more, classify the scholarship type as B. If the student's attendance percentage is 80% or above and if the GPA is below 3.90, classify the scholarship type as C. If the student's attendance percentage is under 80% and the GPA is below 3.90, then do not get scholarship. 5

Your job is to read the scholarship scenario carefully. Obtain a decision table and answer the following questions:

I) Is the decision table is ERDT (Elementary Rule Decision Table)? If your answer is yes, in what way do think it is? If your answer is no, convert this table into ERDT equivalent.

II) Is the decision table is complete decision table? Explain it based on your answer.