

Name :

Roll No. :

Invigilator's Signature :

CS / B.Tech(IT / OLD) / SEM-4 / IT-401 / 2013

2013

**ANALYSIS AND DESIGN OF INFORMATION
SYSTEM**

Time Allotted : 3 Hours

Full Marks : 70

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

GROUP – A

(Multiple Choice Type Questions)

1. Choose the correct answers for the following : $10 \times 1 = 10$

i) A logical DFD is

a) an essence of physical DFD

b) developed in Requirement Analysis step of SDLC

c) developed after Physical DFD

d) all of these are true.



ii) Structure English

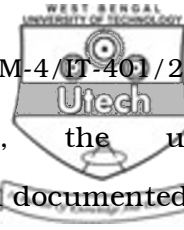
- a) is modified version of the English language
- b) is useful for representing the logic in process
- c) does not use mathematical symbols
- d) all of these.

iii) A data dictionary lists

- a) all the data items appearing in a DFD
- b) all the error free codes
- c) all the functions
- d) none of these.

iv) Beta testing is performed by

- a) the developers
- b) a select group of friendly customers
- c) the test team
- d) all of these.



v) During requirements specification, the user requirements are properly organized and documented in

- a) Feasibility document b) Design document
- c) SRS document d) Data dictionary.

vi) Prototyping model is adopted because

- a) it is easy
- b) it helps gaining better understanding of customers' needs
- c) it is mandatory
- d) none of these

vii) COCOMO belongs to

- a) Empirical estimation technique
- b) Heuristic estimation technique
- c) Analytical technique
- d) none of these.

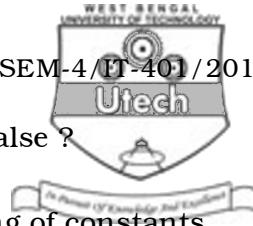


viii) In chronological order, six stages of SDLC are

- a) Requirements analysis, Systems investigation, Systems design, Systems development, Implementation, Maintenance
- b) Systems investigation, Requirements analysis, Systems development, Implementation, Maintenance, Production
- c) Systems investigation, Requirements analysis, Systems development, Evaluation of alternatives, Implementation, Maintenance,
- d) Systems investigation, Requirement analysis, Systems design, Systems development, Implementation, Maintenance.

ix) Product quality is defined as

- a) delivering a product with correct requirements
- b) delivering a product using correct development procedures
- c) developing a product, which is developed iteratively
- d) developing a product using high quality procedures.



- x) Which of the following statements is false ?
- a) Coding standards address naming of constants
 - b) Coding standards address the number of errors encountered per 1,000 lines of code
 - c) Coding standards address layout of code text
 - d) Coding standards address the use of program comments.

GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following. $3 \times 5 = 15$

- 2. What is the difference between black box and white box testing ? Illustrate with example.
- 3. Distinguish between software verification and validation.
- 4. What are the properties of structure programming ?
- 5. What are the basic characteristics of an SRS ?
- 6. What are the major advantages of developing software by iterative enhancement ?

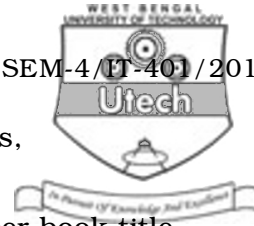


GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following. $3 \times 15 = 45$

7. What is the necessity of using a life-cycle model ? Discuss the waterfall model. What are the shortcomings of this model ? How are the flows in the waterfall model overcome with the prototyping model ? Discuss the importance of documentation. $(1 + 6 + 2 + 2) + 4$
8. What is a data flow ? State 3 characteristics of good data flow model. What are the basic differences between logical and physical DFD ? What is conservation of data ? Indicate the major drawbacks of DFD. Define CASE tools. Enumerate the benefits of using CASE tools. $(2 + 3 + 2 + 2 + 2) + (2 + 2)$
9. What do you mean by the terms 'Cohesion' and 'Coupling' in the context of Software design ? What do you mean by structure programming ? What are the advantages of structure programming ? What is transaction analysis ? How can this be achieved ? Explain. $6 + (2 + 2) + 5$
10. Discount policy has the following conditions for the customers :
 - a) If customer is Bookstores, get a trade discount of 25%, if orders for 6 or more copies per book title.



- b) If customer is libraries and individuals,

5% allowed on orders of 6-19 copies per book title

10% on orders for 20-49 copies per book title and

15% on orders for 50 copies or more book title.

Develop a process a process description in

- (i) Decision table

- (ii) Decision tree

- (iii) Structure English. 5 + 5 + 5

11. Write short notes on any *three* of the following : 5 + 5 + 5

- a) ER diagram
- b) Feasibility study
- c) COCOMO
- d) Evolutionary design and prototyping.

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