B.C.A. (Pt.-III)   Sys. Desi. Con.

302/332

B.C.A. (Part-III) Examination, 2023

(Faculty of Science)

(Three Year Scheme of 10+2+3 Pattern)

System Design Concepts

Paper : 302/332

Time Allowed : 3 Hours   **Maximum Marks : 100**

Answer of all the questions (Short answer as well as are to be given in the main answer-book only. Answers of short answer type questions must be given in sequential order. Similarly all the parts of one question of descriptive part should be answered at one place in the answer-book. One complete question should not be answered at different places in the answer-book.

Write your roll number on question paper before you start writing answers of questions.

Question paper consists of **Three** parts.

All Three parts are **Compulsory**

PART-I : (Very short answer) consists of 10 questions of 2 marks each. Maximum limit for each question is up to 40 words.

PART-II : (Short answer) consists of 5 questions of 4 marks each, Maximum limit for each question is up to 80 words.

PART-III : (Long answer) consists of 5 questions of 12 marks each with one question from each unit with internal choices.

PART-I

1. (a) What is Closed System?   10×2=20
    (b) Define Iterative Cycle.
    (c) What is Attribute?
    (d) What do you mean by Structured Design? X
    (e) What is Testability?
    (f) Write any two objectives of Testing.
    (g) What do you mean by Software Project Planning?
    (h) Define Cost Estimation Model.
    (i) Write any two characteristics of MIS.
    (j) Define Formal System.

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PART-II

2. (a) What is Batch Processing?   5×4=20

   (b) Explain Decision Tree.

   (c) What do you mean by System Implementation?

   (d) Explain Software Design Concepts.

   (e) Discuss Structured and Un-structured Decisions.

PART-III

3. What do you mean by Spiral? Explain spiral Model in detail.   12×5=60

Or

Explain the following :

(a) Data and Fact Gathering Techniques.

(b) Feasibility Studies.

4. What is DFD? Explain DFD with suitable example in detail.

Or

Explain the following :

(a) Structured English

(b) Structure Chart

5. Define White Box Testing? Explain various White Box Testing strategies in detail.   6

Or

Write short notes on the following :

(a) Verification and Validation

(b) Validation Testing.

6. What do you mean by Decomposition? Explain different types of Decomposition Techniques in detail.

Or

Write short notes on the following :

(a) Design Methodologies

(b) Object Oriented concepts

7. Explain the following :

(a) Components of MIS

(b) Levels of Management

Or

Discuss different types of Pitfalls in MIS Development.

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This question paper contains 2 printed pages.

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B.C.A. (Part-III)

Sys. Desi. Con.

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B.C.A. (Part-III) EXAMINATION, 2020
(Faculty of Science)
(Three-Year Scheme of 10+2+3 Pattern)

SYSTEM DESIGN CONCEPTS

Time Allowed : Three Hours

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PART - III : *(Long Answer) consists of **5** questions of **12** marks each with internal choice.*

PART - I

1. (a) What are the advantages of Waterfall model ?   10x2=20

   (b) What is feasibility study ?

   (c) What is Entity-relationship diagram ?

   (d) What is DFD ?

   (e) Differentiate between Verification and Validation.

   (f) What is Integration testing ?

   (g) What is Cost Estimation Model ?

   (h) What is the objective of Software Design ?

   (i) What is Management Information System ?

   (j) What is Pitfalls in MIS development ?

PART - II

2.   (a)   What are the benefits of prototyping ?
     (b)   What is the difference between Decision tree and Decision table ?   5x4=20
     (c)   What is the difference between White box and Black box testing ?
     (d)   Explain the object oriented concepts.
     (e)   Explain the components of MIS.

PART - III

3.   What is a System ? Explain the different phases of SDLC in detail.

OR   2+10

Explain various fact finding methods of system analysis.

    12

4.   What is a Data Flow Diagram ? Discuss the various symbols and rules for drawing DFD with an 2+10
example.

OR

Write short note on :

    3x4=12

  (a)   Structured English
  (b)   Structured Charts
  (c)   Attributes

5.   What is Testing ? Discuss why testing is needed ? Explain Integration testing, System testing and
Acceptance testing.   2+2+8=12

OR

Write short note on :   3x4=12

  (a)   Maintenance and documentation
  (b)   System testing
  (c)   Validation

6.   Write short note on :   6x2=12

  (a)   Cost benefit analysis
  (b)   Software project planning

    OR

Explain COCOMO model in detail.   12

7.   Write short note on :   6x2=12

  (a)   Analysis and Design of Information System
  (b)   Implementation and Evaluation

    OR

What is Management Information System ? Explain characteristics and components of MIS.   2+10=12

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B.C.A. (Part-III)   **Sys. Desi. Con.**

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B.C.A. (Part-III) Examination, 2021

(Faculty of Science)

(Three-Year Scheme of 10+2+3 Pattern)

SYSTEM DESIGN CONCEPTS

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PART-III :   (Long Answer) consists 5 questions of 12 marks each with internal choice.

PART-I

1. (a) Define System.

    (b) What is SDLC?

    (c) What is structure chart?

    (d) What is use of E-R diagram?

    (e) What is the objective of software testing?

    (f) Define System Implementation.

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(g) Explain object oriented concepts.

(h) What is software project planning?

(i) What is the use of MIS?

(j) Discuss structured v/s unstructured decision.

PART-II

2. (a) Explain various fact gathering techniques.

(b) What is data dictionary?

(c) Explain Documentation.

(d) What is the use of COCOMO Model?

(e) Discuss formal and informal system.

PART-III

3. Explain :

(a) **Spiral Model.**

(b) Waterfall Model.

OR

Define feasibility study. Explain the various types of feasibility study in system design.

4. Explain :

(a) Decision Tree.

(b) Decision Chart.

OR

Describe DFD in system design.

5. What is testing? Discuss various types of testing in details.

OR

Explain :

(a) White Box & Black Box Testing.

(b) Verification & validation.

6. Discuss decomposition technique in detail.

OR

Describe various design methodologies are used in software design in detail.

7. Explain MIS in below criteria :

    (a)   Characteristics.

    (b)   Components.

    (c)   Levels of Management.

OR

Describe pitfalls in MIS development in detail.

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Sys. Desi. Con.

B.C.A. (Part-III) EXAMINATION - 2022
(Faculty of Science)
(Three-Year Scheme of 10+2+3 Pattern)

SYSTEM DESIGN CONCEPTS

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PART - I

1. (a) What is Open System ?

   (b) Define Linear Cycle.

   (c) What do you mean by System Design ?

   (d) What is Entity ?

   (e) Define Test Case.

   (f) What do you mean by System Testing ?

   (g) What is Software Design ?

   (h) Write any two objectives of software project planning.

   (i) What do you mean by Balanced MIS ?

   (j) What is Information ?

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PART - II

2.   (a)   Explain Prototyping.

     (b)   What is Decision Table ?

     (c)   What do you mean by System Maintenance ?

     (d)   Explain Design Documentation.

     (e)   What is the purpose of an MIS ?

PART - III

3.   Explain :

     (a)   Data Oriented Approach

     (b)   Object Oriented Approach

OR

Explain System Development Life Cycle (SDLC) and its phases in detail.

4.   Explain :

     (a)   Process Modeling

     (b)   Data Modeling

OR

Describe Entity Relationship Diagram in detail.

5.   Explain :

     (a)   Unit Testing

     (b)   Integration Testing

OR

Explain :

     (a)   Alpha and Beta Testing

     (b)   Recovery Testing

6.   Discuss software design principles in detail.

OR

Explain COCOMO model in detail.

7.   Explain Simon's model of decision making in detail.

OR

What is Information System ? Discuss various types of Information system in detail.

This question paper contains 2 printed pages.

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B.C.A. (Part-III)

Sys. Desi. Con.

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B.C.A. (PART-III) EXAMINATION, 2019
(Faculty of Science)
(Three-Year Scheme of 10+2+3 Pattern)

SYSTEM DESIGN CONCEPTS - 332

Maximum Marks : 100

Time Allowed : Three Hours

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PART - I

10x2=20

1. (a) What is requirement of system design ?
   (b) Write any three system design techniques.
   (c) Define COCOMO model.
   (d) Describe the data modeling.
   (e) What is maintenance problem with linear life cycle ?
   (f) What is testing fundamentals ?
   (g) What are differences between white box and black box testing ?
   (h) Write any four characteristics of good management information system.
   (i) What is the use of computer application in business ?
   (j) What is system approach ?

PART - II

5x4=20

2. (a) What is system design ? Explain various techniques of it in brief.
   (b) What is DFD ? Explain DFD notation.
   (c) What do you understand by protyping ? Write benefits of it.
   (d) What are methods of waterfall cycle ? Explain with example.
   (e) What type of decision support system do we have ?

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PART - III
UNIT - I

3. Explain the various system development life cycle.   12

OR

Explain the Object Oriented and Data Oriented approaches in detail.   12

UNIT - II

4. What are the different types of decisions write in detail ?   12

OR

How will be conversion from data flow diagram to structure charts ? Explain.   12

UNIT - III

5. What is testing ? How many types of test cases are there ? Differentiate between white box and black box testing.   12

OR

Write short notes on the following :   3x4=12

(a) System implementation

(b) Verification

(c) Validation

UNIT - IV

6. What is software project planning ? Explain problem-based estimation and process-based estimation in detail.   12

OR

What do you mean by planning ? Differentiate between architectural design and procedural design.   12

UNIT - V

7. How will you implement Management Information System in Computer Application ? Explain in detail.   12

OR

Write short notes on the following :   12

(a) Analysis

(b) Evaluation

(c) Development

(d) Implementation

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B.C.A. (Part-III) Examination, 2017

[Time: Three Hours]   [Maximum Marks: 100]

Part – I

1. a) What do you mean by the term "System"?
   b) What is prototyping?
   c) What do you mean by Entity Relationship Diagram?
   d) Define Data Modelling.
   e) What is the Need of System Testing?
   f) Why we do documentation for a system?
   g) Explain any three objective of s/w Project Planning.
   h) Explain any three design Principals.
   i) What do you mean by Information System?
   j) Explain various level of a management.

Part – II

2. What do you mean by system development approach, explain in brief?

3. Explain Data Flow Diagram.

4. Differentiate Verification and Validation.

5. Define COCOMO Model.

6. Explain major components of MIS.

Part – III

7. a) Explain System Development Process.
   b) What is Feasibility study?

OR

Explain SDLC in detail.

8. a) What is DFD Notations?
   b) What is Structure chart?

OR

a) Explain Conversion process of Data Flow Diagram to Structure chart.

b) Explain same of the interface design tools.

9. a) Explain White Box and Black Box Testing.
   b) Explain Integration Testing.

OR

a) Explain System Maintenance.
b) Explain Testing Principles in brief.

10. a) What do you mean by Decomposition Techniques.
    b) Explain Data Design.

OR

a) What is Procedural design?
b) What is Object Oriented Concepts?

11. a) Explain Types of Information System?
    b) Explain Simon's Model of decision making.

OR

a) Explain structured V/s Un-structured decision.
b) Explain Formal V/s Informal System.