

Sl. No.

**A5-R4/B1.5-R4 : STRUCTURED SYSTEM ANALYSIS AND  
DESIGN**

अवधि : 03 घंटे  
DURATION : 03 Hours

अधिकतम अंक : 100  
MAXIMUM MARKS : 100

ओएमआर शीट सं. :					
OMR Sheet No. :					

रोल नं. :   
Roll No. :

उत्तर-पुस्तिका सं. :   
Answer Sheet No. :

परीक्षार्थी का नाम :  
Name of Candidate :

परीक्षार्थी के हस्ताक्षर :  
Signature of Candidate :

**परीक्षार्थियों के लिए निर्देश :**

**Instructions for Candidate :**

कृपया प्रश्न-पुस्तिका, ओएमआर शीट एवं उत्तर-पुस्तिका में दिये गए निर्देशों को ध्यानपूर्वक पढ़ें।	Carefully read the instructions given on Question Paper, OMR Sheet and Answer Sheet.
प्रश्न-पुस्तिका की भाषा अंग्रेजी है। परीक्षार्थी केवल अंग्रेजी भाषा में ही उत्तर दे सकता है।	Question Paper is in English language. Candidate can answer in English language only.
इस मॉड्यूल/पेपर के दो भाग हैं। भाग एक में चार प्रश्न और भाग दो में पाँच प्रश्न हैं।	There are TWO PARTS in this Module/Paper. PART ONE contains FOUR questions and PART TWO contains FIVE questions.
भाग एक "वैकल्पिक" प्रकार का है जिसके कुल अंक 40 हैं तथा भाग दो "व्यक्तिपरक" प्रकार का है और इसके कुल अंक 60 हैं।	PART ONE is Objective type and carries 40 Marks. PART TWO is Subjective type and carries 60 Marks.
भाग एक के उत्तर, ओएमआर उत्तर-पुस्तिका पर ही दिये जाने हैं। भाग दो की उत्तर-पुस्तिका में भाग एक के उत्तर नहीं दिये जाने चाहिए।	PART ONE is to be answered in the OMR ANSWER SHEET only. PART ONE is NOT to be answered in the answer book for PART TWO.
भाग एक के लिए अधिकतम समय सीमा एक घण्टा निर्धारित की गई है। भाग दो की उत्तर-पुस्तिका, भाग एक की उत्तर-पुस्तिका जमा कराने के पश्चात् दी जाएगी। तथापि, निर्धारित एक घंटे से पहले भाग एक पूरा करने वाले परीक्षार्थी भाग एक की उत्तर-पुस्तिका निरीक्षक को सौंपने के तुरंत बाद, भाग दो की उत्तर-पुस्तिका ले सकते हैं।	Maximum time allotted for PART ONE is ONE HOUR. Answer book for PART TWO will be supplied at the table when the Answer Sheet for PART ONE is returned. However, Candidates who complete PART ONE earlier than one hour, can collect the answer book for PART TWO immediately after handing over the Answer Sheet for PART ONE to the Invigilator.
परीक्षार्थी, उपस्थिति-पत्रिका पर हस्ताक्षर किए बिना और अपनी उत्तर-पुस्तिका, निरीक्षक को सौंपे बिना, परीक्षा हॉल/कमरा नहीं छोड़ सकते हैं। ऐसा नहीं करने पर, परीक्षार्थी को इस मॉड्यूल/पेपर में अयोग्य घोषित कर दिया जाएगा।	Candidate cannot leave the examination hall/room without signing on the attendance sheet and handing over his/her Answer Sheet to the invigilator. Failing in doing so, will amount to disqualification of Candidate in this Module/Paper.
प्रश्न-पुस्तिका को खोलने के निर्देश मिलने के पश्चात् एवं उत्तर लिखना आरम्भ करने से पहले उम्मीदवार जाँच कर यह सुनिश्चित कर लें कि प्रश्न-पुस्तिका प्रत्येक दृष्टि से संपूर्ण है।	After receiving the instruction to open the booklet and before starting to answer the questions, the candidate should ensure that the Question Booklet is complete in all respect.

जब तक आपसे कहा न जाए, तब तक प्रश्न-पुस्तिका न खोलें।

DO NOT OPEN THE QUESTION BOOKLET UNTIL YOU ARE TOLD TO DO SO.

## PART ONE

(Answer all the questions)

1. Each question below gives a multiple choice of answers. Choose the most appropriate one and enter in the "OMR" answer sheet supplied with the question paper, following instructions therein.  
(1x10)
- 1.1 Which step of SDLC performs cost-benefit analysis ?  
(A) Coding  
(B) Testing  
(C) Design  
(D) Feasibility Study
- 1.2 SDLC stands for :  
(A) System Development Life Cycle  
(B) Structure Design Life Cycle  
(C) System Design Life Cycle  
(D) Software Development Life Cycle
- 1.3 Which of the following terms best describes data that were originally collected at an earlier time by a different person for a different purpose ?  
(A) Primary data  
(B) Secondary data  
(C) Experimental data  
(D) Field notes
- 1.4 An ER diagram represents :  
(A) Entities  
(B) Keys  
(C) Relationship  
(D) All of the above
- 1.5 Which one of the following models is not suitable for accommodating any change ?  
(A) Build & Fix Model  
(B) Prototyping Model  
(C) RAD Model  
(D) Waterfall Model
- 1.6 COCOMO stands for :  
(A) Cost Constructive Model  
(B) Constructive Cost Model  
(C) Common Cost Model  
(D) None of the above
- 1.7 The entity relationship set is represented in E-R diagram as :  
(A) Double diamonds  
(B) Undivided rectangles  
(C) Dashed lines  
(D) Diamond

1.8 Who performs the Acceptance Testing ?

- (A) Software Developer
- (B) End users
- (C) Testing team
- (D) Systems engineers

1.9 Alpha testing is done at :

- (A) Developer's end
- (B) User's end
- (C) Developer's & User's end
- (D) None of the mentioned

1.10 The data flow diagram is the basic components of \_\_\_\_\_ system.

- (A) Conceptual
- (B) Logical
- (C) Physical
- (D) None.

2. Each statement below is either TRUE or FALSE. Choose the most appropriate one and ENTER in the "OMR" answer sheet supplied with the question paper, following instructions therein. (1×10)

- 2.1 A data dictionary is used for spelling checks in Word Processor.
- 2.2 White-box testing can be started after installation.
- 2.3 A Database Administrator is the one who analyze the database for an application.
- 2.4 The detailed study of existing system is referred to as System Analysis.
- 2.5 Beta testing refers to the system testing carried out by the test team within the developing Organization.
- 2.6 MIS stands for Management Information Security.
- 2.7 The basic tool of structure design is a ER diagram.
- 2.8 The process of hiding internal and implementation details and just representing major functionalities is known as Abstraction.
- 2.9 Sandwicheed Testing is one type of Integration Testing.
- 2.10 The physical connections between elements of the OO design represent coupling within an OO system.

3. Match words and phrases in column X with the closest related meaning/ word(s)/phrase(s) in column Y. Enter your selection in the "OMR" answer sheet supplied with the question paper, following instructions therein. (1×10)

X		Y	
3.1	The GUI part of a software system is almost always developed using the	A.	White box testing method
3.2	The most fundamental parameter based on which all other estimations and project plan are made	B.	Design model
3.3	The measure of coding activity alone is	C.	Functional primitives
3.4	The mechanism by which a subclass can inherit attributes and methods from more than one base class	D.	Program testing
3.5	The objective of coding phase is to transform the design of a system in a	E.	Self-Checking code
3.6	The terms error, fault and defect are considered to be synonyms in the area of	F.	Prototyping model
3.7	Basis path testing is	G.	High level language
3.8	User interface design involves	H.	Performance specification
3.9	Decision trees uses	I.	Size
3.10	The process at the most detailed level of the data flow diagrams are called	J.	Pictorial depiction of alternate Conditions
		K.	LOC
		L.	Data Conversion
		M.	Multiple Inheritance

4. Each statement below has a blank space to fit one of the word(s) or phrase(s) in the list below. Enter your choice in the "OMR" answer sheet supplied with the question paper, following instructions therein. (1×10)

A.	SRS	B.	Module Testing	C.	Branch Testing
D.	Program Testing	E.	Control Flow Graph	F.	Delphi Cost Estimation
G.	Cohesion	H.	Coupling	I.	User Interface
J.	Expert Decision Technique	K.	Brainstorming	L.	Bar
M.	Common Coupling				

- 4.1 The \_\_\_\_\_ contains all the user requirements in an informal form.
- 4.2 The \_\_\_\_\_ of software is responsible for all interactions with the user.
- 4.3 Unit testing is known as \_\_\_\_\_.
- 4.4 A linearly independent path can be defined in terms of \_\_\_\_\_.
- 4.5 Edge Testing is also known as \_\_\_\_\_.
- 4.6 In a good design, the modules should have low \_\_\_\_\_.
- 4.7 \_\_\_\_\_ is one of the Empirical Estimation Techniques.
- 4.8 A Gantt chart is fundamentally a \_\_\_\_\_ chart.
- 4.9 Interviews and \_\_\_\_\_ may be used to elicit information regarding the user's requirements.
- 4.10 If two modules share some global data items then this type of coupling is known as \_\_\_\_\_.

**PART TWO**

**(Answer any FOUR questions)**

5. (a) What are the different types of Information Systems ? Elaborate with an example of each.
- (b) Discuss the various phases of software development life cycle model with suitable diagram.
- (c) Explain the basic role and need of System Analyst. **(7+4+4)**
6. (a) Differentiate Logical and Physical design concepts.
- (b) Explain the following term :
- (i) Modularity
- (ii) Abstraction
- (iii) Disaster Recovery
- (iv) Object Oriented Design
- (3+[3x4])**
7. (a) Define Cohesion and Coupling. Discuss the classification of each with suitable diagram.
- (b) Differentiate between Object Oriented and Function Oriented Design.
- (c) What is DFD ? Discuss the various components used in DFD with appropriate diagram. **(5+5+5)**

8. (a) What are the various maintenance activities performed in a system ?
- (b) What are UML diagrams ? Discuss classification of UML diagrams.
- (c) Explain various levels of software testing techniques in detail with suitable diagram. **(7+4+4)**
9. (a) Differentiate between Verification and Validation.
- (b) What is the significance of Graphical User Interface (GUI) in input and output design of a system ?
- (c) What are advantages and limitations of CASE tools ? **(5+5+5)**

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SPACE FOR ROUGH WORK

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