

Sl. No.

**B1.5-R4 : STRUCTURED SYSTEM ANALYSIS AND DESIGN**अवधि : 03 घंटे  
DURATION : 03 Hoursअधिकतम अंक : 100  
MAXIMUM MARKS : 100ओएमआर शीट सं. :   
OMR Sheet No. :रोल नं. :   
Roll No. :उत्तर-पुस्तिका सं. :   
Answer Sheet No. :

परीक्षार्थी का नाम :

परीक्षार्थी के हस्ताक्षर :

Name of Candidate :

;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, इस प्रश्न-पत्र के साथ दी गई ओएमआर उत्तर-पुस्तिका पर, उसमें दिये गए अनुदेशों के अनुसार 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, supplied with the Question Paper, as per the instructions contained therein. 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 questions)**

**1. Each question below gives a multiple choice of answers. Choose the most appropriate one and enter in the "OMR" answer sheet attached to the question paper, following instructions therein. (1 × 10)**

**1.1** The next major step before system design and after feasibility study is :

- (A) Analysis
- (B) Equipment selection
- (C) Implementation
- (D) Testing

**1.2** An Object Oriented software component :

- (A) is made of objects
- (B) is a part of software architecture
- (C) is a part of structured analysis
- (D) is part of structured system design

**1.3** PERT is model for :

- (A) project management
- (B) project development
- (C) analysis task
- (D) All of the above

**1.4** The CASE tools are used for :

- (A) System Requirement Analysis
- (B) System designing
- (C) Input output design
- (D) All of the above

**1.5** A structure chart :

- (A) Shows module inter-relationships in a hierarchical manner
- (B) Describes the internal structure of a program in a graphical manner
- (C) Is a graphical representation of structured English
- (D) Depicts data structures in the form of a chart

**1.6** Which of the following is not a part of MIS?

- (A) Exception report for middle management
- (B) Summary report for top management
- (C) Action report for line management
- (D) Payroll for workers

1.7 Design trees are developed for :

- (A) Module specification
- (B) System design
- (C) Planning consideration
- (D) None of the above

1.8 UML are used for :

- (A) object oriented module development
- (B) coding of system
- (C) testing of system
- (D) None of the Above

1.9 Which one of the following is not an important characteristic of useful and effective information?

- (A) Accuracy
- (B) Timelines
- (C) Completeness
- (D) Economy

1.10 Which of the following diagram of Object Oriented Design is used for representation of behavioral model of the system?

- (A) State chart
- (B) Class diagram
- (C) Object diagram
- (D) DFD

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

2.1 Cyclomatic number is useful in software testing.

2.2 The primary functions of PERT chart are for planning and controlling complex system projects.

2.3 PERT stands for Program Evaluations & Review Technique.

2.4 An SRS should be unambiguous.

2.5 Decision Tree and Decision Tables perform the same function.

2.6 A well-designed and tested system does not, typically, require maintenance.

2.7 MIS stands for Management Information Security.

2.8 Modular coupling refers to the relationship among elements within a module.

2.9 Design should be traceable to the requirement specifications.

2.10 Modular (Cohesion) refers to the relationship among elements within a module.

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	Structured walkthrough	A.	Testing the interfaces between related modules of a system.
3.2	What-If Analysis	B.	Hardware selection
3.3	Coupling	C.	Table showing the decision rules that apply when certain conditions occur.
3.4	Integration Testing	D.	Analysis of Unstructured decision
3.5	Decision table	E.	Facilitating use of application software
3.6	GUI	F.	Review of a system or its software by persons involved in development team
3.7	System which isolates itself from its environment is known as	G.	Feedback
3.8	JAD	H.	Computer systems in an enterprise that provide information about its business operations. It is also used to refer to the people who manage these systems
3.9	MIS	I.	Closed system
3.10	Modularity	J.	Methodology that involves the client or end user in the design and development
		K.	Method for checking transaction errors
		L	Analysis of Structured Decision
		M.	Feature of Structured Design

4. Each statement below has 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.	System flow	B.	Documentation	C.	Structured chart
D.	Brainstroming	E.	Work Breakdown Structure (WBS)	F.	Use case
G.	Bar	H.	Weakness	I.	Module
J.	All	K.	Common Coupling	L.	Summarized
M.	Open system				

- 4.1 \_\_\_\_\_ charts are an effective means for relating input data to files and output reports.
- 4.2 The three basic sub-systems (business functions) of any industrial organization are Marketing, Operations and \_\_\_\_\_.
- 4.3 \_\_\_\_\_ is used to break a given task into set of small activities.
- 4.4 Review and walkthroughs are carried out at \_\_\_\_\_ stages of the SDLC.
- 4.5 As the management level goes up the hierarchy, information becomes more and more \_\_\_\_\_.
- 4.6 If two modules share some global data items then this type of coupling is known as \_\_\_\_\_.
- 4.7 A Management audit questionnaires is a tool determining managerial \_\_\_\_\_ when evaluating internal administrative control.
- 4.8 System design is made up of Data Design and \_\_\_\_\_ design.
- 4.9 \_\_\_\_\_ diagram in UML is used for describing user and system interaction.
- 4.10 Interviews and \_\_\_\_\_ may be used to elicit information regarding the user's requirements.

## PART TWO

(Answer any FOUR questions)

5. (a) What is Software Development Life Cycle (SDLC)? Describe various phases of SDLC. Briefly explain various types of documentation involved in each phase of SDLC.  
(b) What are the differences between system analysis and system design? Justify your answer with examples. What is the role of system analyst in system analysis and design? (8+7)
6. (a) What features must be specified in an information system design? What is a design specification?  
(b) Define the term Computer Aided Software Engineering (CASE). Describe the types and advantages of CASE tools.  
(c) What is validation in Input designing? Describe various methods of Input validation. (3+8+4)
7. (a) Describe pros and cons of interview and questionnaires' technique for requirement gathering.  
(b) Explain different types of threats that a computer system can have and explain various control measures for those threats.  
(c) What are cohesion and coupling in modular design? How are they different from each other? (5+5+5)
8. (a) What is significance of DFD in System modeling? Differentiate between physical DFD and logical DFD.  
(b) A bank uses the following rules to classify new accounts. If a depositor's age is 21 or above and if the deposit is ₹ 100 or more, classify the account (type) as A. If the depositor is under 21 and the deposit is ₹ 100 or more, classify it as account B. If the depositor is 21 or over and the deposit is below ₹ 100 classify it as account C. If the depositor is under 21 and the deposit is below ₹ 100, do not open an account.  
Derive Decision rules, conditions and actions and Draw decision table for above system. (7+8)
9. (a) Explain the concept of business process re-engineering with the help of an appropriate example.  
(b) Write a short note on  
(i) Decision Support System  
(ii) Transaction Processing System  
(c) What is Object Oriented Modeling? Differentiate between Static and Dynamic Modeling. (4+8+3)

- o o o -

---

SPACE FOR ROUGH WORK

---

SPACE FOR ROUGH WORK