A5-R4: STRUCTURED SYSTEM ANALYSIS & DESIGN

अवधि: 03 घंटे **अधिकतम अंक: 100**

DURATION: 03 Hours **MAXIMUM MARKS: 100**

ओएमआर 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 ध्यान पूर्वक 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** है। **भाग एक** में चार प्रश्न और **भाग दो** में पाँच प्रश्न है।	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 है तथा **भाग दो**, "व्यक्तिपरक" प्रकार है और इसके कुल अंक 60 है।	**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 है। **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 पश्चात 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.**
परीक्षार्थी, उपस्थिति-पत्रिका पर हस्ताक्षर किए बिना एवं अपनी उत्तर-पुस्तिका, निरीक्षक को सौंपे बिना, परीक्षा हाल नहीं छोड़ सकता हैं। ऐसा नही 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 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 पश्चात एवं उत्तर देने से पहले उम्मीदवार यह जाँच कर यह सुनिश्चित कर ले कि प्रश्न-पुस्तिका प्रत्येक दृष्टि से संपूर्ण है।	After receiving the instruction to open the booklet and before answering 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 The components that make up any system is known as System
A) Boundary B) Environment
C) Description D) None of the above

1.2 Running the system under a live environment using live data in order to find errors is known as
A) Beta Testing B) Alpha Testing
C) Acceptance Testing D) System Testing

1.3 Requirements also serve as an evaluation checklist at the end of the development project, so they are sometimes called _____.
A) System Development Life Cycle
B) CASE tool
C) Phased Conversion
D) Success factors

1.4 Which of the following is/are characteristic(s) of structured system development?
A) partitioning of systems into manageable levels of detail
B) specification of the interfaces between modules
C) the use of graphical tools, such as data-flow diagrams to model system
D) All of the above

1.5 In the Analysis phase, the development of the _____ occurs, which is a clear statement of the goals and objectives of the project.
A) Documentation
B) Flowchart
C) Program specification
D) design

1.6 Translating the algorithm into a programming language occurs at the _____ step of the PDLC.
A) Debugging B) Coding
C) Testing D) None of the above

1.7 _____ includes review of the existing procedures and information flow.
A) Feasibility Study B) System Modeling
C) System Design D) System Analysis

1.8 In the analysis and presentation of logic, which of the following techniques will ensure that all combinations of conditions have been considered?
A) HIPO chart B) Decision table
C) Pseudo code D) DFD

1.9 Data Dictionary consists of
A) All transaction that have been entered in the system
B) All words which can be referred to during the spell check by a word processor
C) Data about the files and their contents and about the processes used by the system
D) An indexed sequential file containing frequency of access of each data item in the system

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 your choice in the "OMR" answer sheet supplied with the question paper, following instructions therein. (1x10)

2.1 Cyclomatic number is useful in software testing.

2.2 The primary functions of PERT chart is 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 refers to the relationship among elements within a module cohesion.

ROUGH WORK SPACE:

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. (1x10)

X		Y	
3.1	Feasibility Study	**A.**	sequence diagram
3.2	An external entity	**B.**	It is a repository of the elements in a system.
3.3	A unit external to the system being designed	**C.**	Security feature
3.4	System Documentation	**D.**	An external entity
3.5	Fact-finding technique	**E.**	Reasonable limits of input
3.6	Cost-Benefit Analysis is performed during	**F.**	Coordinated effort, to communicate the information of the system in written form.
3.7	Data Dictionary	**G.**	Includes review of the existing procedures and information flow.
3.8	Transposition errors	**H.**	Questionnaire .
3.9	The structure chart derived by studying the flow through the system supports the activity of	**I.**	Internal controls design
3.10	UML interaction diagrams	**J.**	Feasibility study phase
		K.	A rectangle in a DFD
		L.	Analysis of Structured Decision
		M.	Check digit

4. Each statement below has a blank space to fit one of the word(s) or phrase(s) in the list below. Choose the most appropriate option, enter your choice in the "OMR" answer sheet supplied with the question paper, following instructions therein. (1x10)

A.	System flow	**B.**	Data structure	**C.**	Structure chart
D.	Analysis	**E.**	DFD	**F.**	Use case
G.	Macros	**H.**	Problem/Opportunity Identification	**I.**	Activity
J.	System Prototyping	**K.**	Debugging	**L.**	Top Down Analysis
M.	Open system				

4.1 The first step in the systems development life cycle (SDLC) is _____.

4.2 Most modern software applications enable you to customize and automate various features using small custom-built "miniprograms" called _____.

4.3 _____is finding and correcting errors in the program code.

4.4 In _____and design each succeeding phase is more detailed than the phase before it.

4.5 Data dictionary describes every data element and _____.

4.6 A _____ is the primary tool used in structured system development to graphically depict systems.

4.7 _____ helps the designer in communicating to the user, quickly, how the system, when developed, will look like and get a feedback.

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 _____ is a hierarchical diagram showing the relationship between various program modules.

ROUGH WORK SPACE:

PART TWO
(Answer any FOUR questions)

5.

a) What is Information System? Describe the different categories of Information System. List and explain three different strategies of Information System development.

b) What is Data Flow Analysis in a Structured System Analysis? Give list of tools used for data flow analysis.

(8+7)

6.

a) What are the reasons for project proposal? What are components of the project proposal?

b) An advertisement is issued giving essential qualifications for the specific post. The Last date for receipt of application and the fee to be enclosed with the application. A clerk in the Registrar's office checks the received applications to the concerned department. The department checks the application in detail and decides the applicants to be admitted, those to be put in the waiting list and those to be rejected. Appropriate letters are sent to the Registrar's office, which intimates the applicant.
   i) Give physical and logical DFDs corresponding to the above problem.

c) Describe pros and cones of interview and questionnaires technique for requirement gathering.

(3+8+4)

7.

a) What is the meaning of Prototype in System development? Describe its use in application prototyping?

b) How disaster recovery is performed in the computer systems?

c) What is the meaning of Conversion from old system to new system? Describe various methods of Conversion in detail.

(5+5+5)

8.

a) Define the term Computer Aided Software Engineering (CASE). Describe the types and advantages of CASE tools.

b) What is UML? Why it is called Unified Modeling? List and explain various diagrams involved in modeling using UML, which shows behavioral aspects of the system.

(8+7)

9.

a) Explain the role and responsibilities of a System Analyst.

b) Write a short note on:

i) Prevention of Computer Virus & Malicious Applications

ii) Decision Support System

(5+[5+5])

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ROUGH WORK SPACE:

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