A8-R5 : SYSTEMS ANALYSIS, DESIGN AND TESTING

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 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 है तथा **भाग दो** ''व्यक्तिपरक'' प्रकार का 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, **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 attached to the question paper, following instructions therein. **(1x10)**

1.1 The approach used in top-down analysis and design is _____.

(A) to identify the top level functions by combining many smaller components into a single entity

(B) to prepare flow charts after programming has been completed

(C) to identify a top level function and then create a hierarchy of lower-level modules and components

(D) all of the above

1.2 The primary tool used in structured design is a :

(A) data-flow diagram

(B) module

(C) structure chart

(D) program flowchart

1.3 Documentation is prepared :

(A) at every stage

(B) at system design

(C) at system analysis

(D) at system development

1.4 What is the order in which test levels are performed ?

(A) Unit, Integration, System, Acceptance

(B) Unit, System, Integration, Acceptance

(C) Unit, Integration, Acceptance, System

(D) It depends on nature of a project

1.5 Which testing is concerned with behavior of whole product as per specified requirements ?

(A) Acceptance testing

(B) Component testing

(C) System testing

(D) Integration testing

1.6 A black hole in a DFD is :

(A) a data store with no inbound flows

(B) a data store with only inbound flows

(C) a data store with more than one inbound flow

(D) none of the above

1.7 Which diagram in UML shows a complete or partial view of the structure of a modeled system at a specific time ?

(A) Sequence Diagram

(B) Collaboration Diagram

(C) Class Diagram

(D) Object Diagram

1.8 Which of the following diagram is time oriented ?

(A) Collaboration

(B) Sequence

(C) Activity

(D) None of the above

1.9 The process of hiding internal and implementation details and just representing major functionalities is known as :

(A) Abstraction

(B) Encapsulation

(C) Dynamic Binding

(D) Static Binding

1.10 The entity relationship set is represented in E-R diagram as :

(A) Double diamonds

(B) Undivided rectangles

(C) Dashed lines

(D) Diamond

2. Each statement below is either TRUE or FALSE. Choose the most appropriate one and ENTER in the "OMR" sheet attached to the question paper, following instructions therein. (1x10)

2.1 System testing only deals with functional requirements.

2.2 Structure diagrams emphasize the things that must be present in the system being modeled.

2.3 Decision Trees are easier for most people to understand than decision tables.

2.4 Beta testing is useful way of compatibility testing.

2.5 The first step in system development life cycle is preliminary investigation and analysis.

2.6 Logical design is tied to a specific hardware and software platform.

2.7 If the software process were based on scientific and engineering concepts, it would be easier to re-create new software than to scale an existing one.

2.8 Software is not considered to be a collection of executable programming code, associated libraries and documentations.

2.9 Modelling is a representation of the object-oriented classes and the resultant collaborations will allow a system to function.

2.10 Systems implementation and operation is the final phase of the SDLC.

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 attached to the question paper, following instructions therein.** **(1x10)**

X		Y	
3.1	DDS stands for	**A.**	Use case
3.2	A DFD is normally leveled as	**B.**	Other site can continue operating
3.3	In this testing, the tester has no knowledge of internals of program being tested	**C.**	It is easier to read and understand a number of smaller DFDs than one large DFD
3.4	UML diagrams has an Actor	**D.**	Data Dictionary Systems
3.5	Alpha testing is done at	**E.**	Digital Data Service
3.6	Testing adjunct to the coding step	**F.**	Activity
3.7	Relational schemas are stored in a structure called	**G.**	Black Box
3.8	If one site fails in distributed system	**H.**	Developer's end
3.9	Where one has to process all the records in a file, the best organization is	**I.**	User's end
3.10	Common method for checking transposition errors	**J.**	Data Dictionary
		K.	Unit testing
		L.	Sequential
		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. Enter your choice in the "OMR" answer sheet attached to the question paper, following instructions therein. (1x10)

A.	Database Administrator	**B.**	Signal	**C.**	Feasibility
D.	Structure Chart	**E.**	System	**F.**	Data Dictionary
G.	Arrow	**H.**	Bug	**I.**	Better resource sharing
J.	Low system overhead	**K.**	process ID	**L.**	ine
M.	host name and identifier				

4.1 Inputs are classified as either maintenance or _____.

4.2 A(n) _____ is a set of interacting components that operate within a boundary for some purpose.

4.3 A _____ is a listing of all data elements in a database.

4.4 The person responsible for database management is _____.

4.5 A _____ is an error in a computer program.

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

4.7 In data-flow diagrams, the _____ portrays a data-flow.

4.8 The product of the feasibility study is a _____ document.

4.9 Distributed systems have _____.

4.10 Processes on the remote systems are identified by _____.

PART TWO

(Answer any FOUR questions)

5. (a) Define Information System ? Describe various categories of information system. Explain different types of information strategies in brief.

(b) Compare and contrast between unit testing and integration testing. **(10+5)**

6. (a) Explain in detail about management information system.

(b) Explain the waterfall model along with its advantages and disadvantages. **(8+7)**

7. (a) Define UML. Explain use case diagram with suitable example.

(b) What are different Functional Testing Techniques ? Name them. Describe any two of them. **(8+7)**

8. (a) Explain Aggregation, Association and Composition in class diagram with suitable example.

(b) List and explain the task regions in the Spiral model.

(c) List and explain the phases of Software Development Life Cycle (SDLC). **(5+5+5)**

9. (a) Draw the context and level-1 data flow diagram of food ordering system.

(b) What is the difference between SRS document and design document ? Describe the Structure and Schema of both of them. **(10+5)**

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SPACE FOR ROUGH WORK

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