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 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 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 of the following is not a tool for data collection ?

(A) Interview

(B) Questionnaires

(C) Observation

(D) Experiments

1.2 _____ is an important factor of Management Information System.

(A) System

(B) Data

(C) Process

(D) All

1.3 ER diagram is a tool, which is used for :

(A) Data designing

(B) Data modeling

(C) Data processing

(D) All of the above

1.4 COCOMO stands for :

(A) Cost Constructive Model

(B) Constructive Cost Model

(C) Common Cost Model

(D) None of the above

1.5 CASE stands for :

(A) Computer Aided Software Engineering

(B) Component Aided Software Engineering

(C) Cost Analysis Software Engineering

(D) Computer Application & Software Engineering

1.6 _____ tests the high levels of system before testing its detailed components.

(A) Top-down Testing

(B) Bottom-up Testing

(C) Up-down Testing

(D) None of the above

1.7 Project Planning is done by :

(A) Gantt

(B) State Visits

(C) Spiral Model

(D) COCOMO

1.8 _____ refers to the set of activities that ensure that software correctly implements a specific function.

(A) Validation

(B) Verification

(C) Conversion

(D) Correction

1.9 Design phase includes :

(A) Data, architectural and procedural design only

(B) Architectural, procedural and interface design only

(C) Data, architectural and interface design only

(D) Data, architectural, interface and procedural design

1.10 In object-oriented design of software, objects have :

(A) Attributes and names only

(B) Operations and names only

(C) Attributes, name and operations

(D) None of the above

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 In the development phase of the SDLC, programmers either create software from scratch or Purchase commercially available software.

2.3 A Database Administrator is the one who designs the database for an application.

2.4 CMM is a project management practice to assess quality and has different levels to award Depending on the process standards existing in the industry.

2.5 Coupling is the extent to which subsystems depend on each other.

2.6 MIS stands for Management Information Security.

2.7 A PERT diagram shows, how tasks must be ordered and when an activity should begin and end.

2.8 A firewall is used in a system to a wide area network to prevent spread of fire in the network.

2.9 DFD is used to represent the functional view of the application Domain.

2.10 CASE tools help to visualize structured analysis and design.

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	Password	**A.**	Facilitating use of application software
3.2	Inheritance	**B.**	Concepts that products can be developed faster and of higher quality
3.3	Interviews	**C.**	Table showing the decision rules that apply when certain conditions occur.
3.4	Data Flow	**D.**	Testing the interfaces between related modules of a system.
3.5	Decision table	**E.**	Building a modifiable model before the actual system is installed
3.6	Prototyping	**F.**	Arrow
3.7	Integration Testing	**G.**	Analysis
3.8	GUI	**H.**	Access Control
3.9	RAD	**I.**	Part of relationship
3.10	Aggregation	**J.**	Is a relation
		K.	This marks the completion of the requirements phase of the SDLC, when the economic and practical feasibility of the new system is determined.
		L.	System Development Model
		M.	Management Information System

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. **(1×10)**

A.	Delphi Cost Estimation	**B.**	MICR	**C.**	Software quality assurance
D.	Static	**E.**	Stress Testing	**F.**	Use case
G.	Analysis	**H.**	Biometric	**I.**	Content coupling
J.	DBA	**K.**	Work breakdown structure	**L.**	Content coupling
M.	Maintenance				

4.1 If two modules share their code then this type of coupling is known as _____.

4.2 _____ is also known as endurance testing.

4.3 _____ is one of the Empirical Estimation Techniques.

4.4 _____ is a series of activities that assist an organization in producing high quality software.

4.5 _____ is used to decompose a given task set recursively into small activities.

4.6 _____ can be classified as corrective, adaptive or perfective.

4.7 _____ translates the special fonts printed in magnetic ink on checks into direct computer input.

4.8 PERT and _____ are techniques for scheduling project activities.

4.9 _____ diagram in UML is used for describing user and system interaction.

4.10 A device to measure or detect fingerprints or signature is called a(n) _____ device.

PART TWO

(Answer any FOUR questions)

5. Define the following terms :

(a) Management Information System (MIS)

(b) Validation and Verification

(c) Difference between DFDs and ER diagrams **(5+5+5)**

6. (a) What is the difference between system analysis and system design ?

(b) What role does a repository play in system analysis ?

(c) What is the object – oriented analysis ? How is it similar to, and different from modern structured analysis and information engineering ? **(5+3+7)**

7. (a) Explain SDLC with all its different phases.

(b) What is the importance of SRS document ? Explain major characteristics of SRS. **(8+7)**

8. (a) Define the terms economic feasibility, technical feasibility, operational feasibility and schedule feasibility.

(b) What three phases make up the system design ?

(c) Discuss the relationship between prototyping and JAD. **(8+3+4)**

9. (a) What is a CASE tool ? Explain advantages of CASE tool with its features. Briefly explain types of CASE tools.

(b) State diagram is one of the diagrams of UML. With the help of a suitable example of state diagram, explain the terms : state, transition and event.

(c) Prevention from Computer Virus & Malicious Applications. **(5+5+5)**

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SPACE FOR ROUGH WORK

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