

A5-R4: STRUCTURED SYSTEM ANALYSIS & 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: _____; 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 कर 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 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 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 अथवा अपनी उत्तर-पुस्तिका, निरीक्षक को सौंपे बिना, परीक्षा हॉल नहीं छोड़ सकता है। 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 or 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 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
- 1.2 In a DFD external entities are represented by a
A) Rectangle
B) Ellipse
C) Diamond shaped box
D) Circle
- 1.3 Which of the following is a true statement regarding the SDLC phases?
A) The SDLC is not iterative.
B) The life cycle is always a sequentially ordered set of phases.
C) It is not possible to complete some activities in one phase in parallel with those of another phase.
D) The life cycle may be thought of as a circular process in which the end of the useful life of one system leads to the beginning of another project to develop a new version of or replace an existing system.
- 1.4 An ER diagram represents
A) Entities
B) Keys
C) Relationship
D) All of the above
- 1.5 UML stands for
A) Unified Modeling Language
B) Unified Modular Language
C) Unique Modeling Language
D) None of the above
- 1.6 The output for the analysis phase is the:
A) description of the alternative solution
B) physical system specifications
C) work plan for the project
D) priorities for systems and projects proposal
- 1.7 After the design phase the document prepared is known as-
A) System specification
B) Performance specification
C) Design specification
D) None of the above

- 1.8 The Data flow diagram is the basic components of _____ system.
A) Conceptual
B) Logical
C) Physical
D) None of the above
- 1.9 Entities, attributes and relationship are associated with-
A) Logical concepts of data.
B) Physical concepts of Data
C) Persons of an Organization
D) None of the above
- 1.10 Actual programming of software code is done during the _____ step in SDLC.
A) Maintenance & Evaluation
B) Design
C) Analysis
D) Development & Documentation
- 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 Decision table is a tabular method for describing the logic of the decision to be taken.
- 2.2 An entity in an ER diagram is basically the same as an entity in a DFD, the only difference being that in the former it stores data and in the latter it processes data.
- 2.3 Authentication is the process of verifying the identity of a person.
- 2.4 Program Flow charts are essential tools for data collection.
- 2.5 Linked list is an example of a hierarchical data structure.
- 2.6 Logical design is tied to a specific hardware and software platform.
- 2.7 The bulk of the work in RAD takes place in the requirements planning phase.
- 2.8 Tracing all activities, not affecting a piece of information is called Audit trail.
- 2.9 Systems where a central computer does the processing are called centralized systems.
- 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. (1x10)

X		Y	
3.1	This testing, the tester has no knowledge of internals of program being tested	A.	Recon Michal
3.2	Model of the SDLC incorporates the elements of risk analysis also	B.	Prototype
3.3	A working model of a system	C.	Data Structure
3.4	A module’s connection with other modules is called	D.	Data Dictionary
3.5	Data Dictionary describes every data element and	E.	Black box
3.6	Which describes every data element comprehensively?	F.	BAR Chart
3.7	A Gantt chart is fundamentally a	G.	Spiral model
3.8	The detailed investigation of the present system is referred to as	H.	Coupling
3.9	Where one has to process all the records in a file, the best organization is	I.	System Analysis
3.10	Is used to connect processes to each other and the arrowhead indicates direction of data transfer	J.	Sequential
		K.	ERD
		L.	Pseudo code
		M.	Structured system analysis

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 maintenance	B.	System analysis	C.	Module Testing
D.	Coupling	E.	Module	F.	Analysis activity
G.	DFD	H.	Data Structure	I.	Spiral model
J.	Black holes	K.	Entity Relationship Diagram	L.	Pseudo code
M.	Decision table				

- 4.1 _____ testing must precede Unit testing and System testing.
- 4.2 _____ is a model used for system components.
- 4.3 Data Dictionary describes every data element and _____.
- 4.4 ERD stands for _____.
- 4.5 _____ model of the SDLC incorporates the element of risk analysis also.
- 4.6 Unit testing is known as _____.
- 4.7 The next major step before system design and after feasibility study is _____.
- 4.8 Defining the problem and determining the new system objectives are part of the _____ phase of SDLC.
- 4.9 Changes made periodically to a system after its implementation is called _____.
- 4.10 In a DFD, processes that have inputs but produce no output are called _____.

PART TWO
(Answer any FOUR questions)

- 5.**
- a) What are the objectives of software design? How do we transform a broad design into detail design?
 - b) What are the three views of modeling? Explain briefly their purpose and also name the Models used to represent these views.
- (8+7)**

- 6.**
- a) What is the difference between system analysis and system synthesis?
 - b) State the phases that make up the system design?
 - c) How do users prevent and protect themselves against viruses?
- (8+[4+3])**

- 7.**
- a) Explain the concepts of Coupling and Cohesion with reference to modular design approach.
 - b) Compare the Object-Oriented approach with Module Oriented Approach.
- (9+6)**

- 8.**
- a) What do you understand by System Implementation and Maintenance? Discuss the various methods for evaluation of performance.
 - b) What is the significance of Graphical User Interface (GUI) in input and output design of a system? Describe characteristics of good user interface design.
- (8+7)**

- 9.**
- a) Discuss the various features of Object Oriented Methodology. Define an object mapped to real life scenario.
 - b) What is SRS document? What are the major characteristics of SRS?
- (8+7)**
