

## A8-R5 : 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 Candidates :
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 अंग्रेजी भाषा में है। परीक्षार्थी उत्तर लिखने के लिए केवल अंग्रेजी भाषा का ही प्रयोग कर सकते हैं।	Question Paper is in English language. Candidate has to 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 यह जाँच कर 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. Each question carries ONE mark)**

**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 What are structured analysis tools ?

- (A) Data Flow Diagrams
- (B) Data Dictionary
- (C) Decision Trees
- (D) All of these

1.2 The main ingredient of the report documenting the \_\_\_\_\_ is the cost benefit analysis.

- (A) System Analysis
- (B) Feasibility Study
- (C) System Analyst
- (D) System Design

1.3 A context diagram :

- (A) Describes the context of a system
- (B) is a DFD which gives an overview of the system
- (C) is a detailed description of a system
- (D) is not used in drawing a detailed DFD

1.4 A DFD is normally leveled as :

- (A) It is a good idea in design
- (B) It is recommended by many experts
- (C) it is easy to do it
- (D) It is easier to read and understand a number of smaller DFDs than one large DFD

1.5 Advantages of Structure Chart \_\_\_\_\_.

- (A) Effective communication
- (B) Effective analysis
- (C) In/out flow of dependency in Modules
- (D) All the above

1.6 A physical DFD :

- (A) has no means of showing material flow
- (B) does not concern itself with material flow
- (C) can show only stored material
- (D) can show the flow of material

1.7 After implementation of the system, system maintenance could be done for :

- (A) Minor changes in the processing logic
- (B) Errors detected during the processing
- (C) Revision of the formats of the reports
- (D) All of the above

1.8 Activity diagram, use case diagram, collaboration diagram and sequence diagram are considered as types of :

- (A) non-behavioral diagrams
- (B) non structural diagrams
- (C) structural diagrams
- (D) behavioral diagrams

1.9 Model in which overall success of a project highly depends on risks analysis phase is called :

- (A) risk-driven model
- (B) phase-driven model
- (C) risk-process model
- (D) risk-safe model

1.10 Prototyping is example of :

- (A) phase patterns
- (B) process patterns
- (C) stage patterns
- (D) bit patterns

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 UML stands for Unified Machine Language.

2.2 Use case is a diagram to elaborate classes and objects

2.3 Design specification report is the final output of System Analysis

2.4 A grid chart shows the relationship between input and output documents.

2.5 A decision table shows the various rules that apply to a decision when certain conditions exist.

2.6 Class diagram is a static view of a system.

2.7 External Entities is a source of input data only.

2.8 Oldest paradigm for software engineering is waterfall model .

2.9 Actual work to be done to accomplish objective of software engineering action is termed as task set.

2.10 In incremental process model, some high-end function are designed in modeling framework.

3. Match words and phrases in column X with the closest related meaning / words(s) / phrase(s) in column Y. Enter your selection in the "OMR" answer sheet supplied with the question paper, following instructions therein.

(1x10)

Column X

Column Y

3.1	Physical design	A.	Documentation
3.2	Interview	B.	Type of output
3.3	Input design	C.	Defines design specification that need to be coded
3.4	Installation procedure	D.	Data gathering technique
3.5	report	E.	Identification and design of interfaces to enter data
3.6	Design patterns	F.	Commands
3.7	polymorphism	G.	Code Generators
3.8	A help file for system operations	H.	User site
3.9	CASE tool	I.	One name many forms
3.10	Beta testing	J.	Generic solutions to recurring problems
		K.	User manual
		L.	OOD
		M.	Class

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	agile	B	debugging	C	information	D	Systems analyst
E	data dictionary	F	pilot	G	interaction diagrams	H	system development life cycle
I	module interface	J	system development	K	Document production	L	testing
M	Waterfall						

- 4.1 Using the \_\_\_\_\_ approach, a new system is tested in one part of the organization before being implemented in others.
- 4.2 The final output of \_\_\_\_\_ phase is a fully developed and tested software system along with complete documentation and testing results.
- 4.3 System Development process is also called as \_\_\_\_\_.
- 4.4 A collection of important terms , concepts during analysis is done in \_\_\_\_\_.
- 4.5 Dynamic aspects related to a system are shown with help of\_\_\_\_\_.
- 4.6 \_\_\_\_\_ is done in the development phase by the debuggers.
- 4.7 Locating or identifying the bugs is known as \_\_\_\_\_.
- 4.8 A \_\_\_\_\_ is tested to ensure that information properly flows into and out of the system.
- 4.9 A \_\_\_\_\_ is a person who uses analysis and design techniques to solve business problems using information technology.
- 4.10 \_\_\_\_\_ is a time boxed and iterative approach.

**PART TWO**

**(Answer any FOUR Questions)**

5. (a) Explain system development life cycle (SDLC) in detail.
- (b) How cost/benefit analysis plays an important role in SDLC ?
- (c) Explain SRS.

**(5+5+5)**

6. (a) What is meant by cohesion and coupling in design solution ?
- (b) What is the relation between cohesion and coupling in modular design?
- (c) What is the main difference between analysis and design ?

**(4+5+6)**

7. (a) What is prototyping ? Briefly explain the benefits of prototyping in software development.
- (b) What is reverse engineering? Why it is required ?

**(7+8)**

8. (a) What is meant by system testing? Explain different types of system testing.

- (b) Differentiate between black box and white box testing ?

**(7+8)**

9. (a) Explain the difference between Stress and Load testing ?

- (b) Explain the DevOps development methodology ?

**(8+7)**

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**SPACE FOR ROUGH WORK**

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