A8-R5 : SYSTEMS ANALYSIS, DESIGN AND TESTING

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

OMR Sheet No. : ☐☐☐☐☐

Roll No. : ☐☐☐☐☐☐   **Answer Sheet No. :** ☐☐☐☐☐☐

Name of Candidate : _____ ; **Signature of Candidate :** _____

INSTRUCTIONS FOR CANDIDATES :

- Carefully read the instructions given on Question Paper, OMR Sheet and Answer Sheet.

- Question Paper is in English language. Candidate has to answer in English language only.

- There are **TWO PARTS** in this Module/Paper. **PART ONE** contains **FOUR** questions and **PART TWO** contains **FIVE** questions.

- **PART ONE** is Objective type and carries **40** Marks. **PART TWO** is Subjective type and carries **60** Marks.

- **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**.

- 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.

- **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.**

- 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 respects.

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 _____ is a tabular method for describing the logic of the decisions to be taken.

(A) Decision tables

(B) Decision tree

(C) Decision Method

(D) Decision Data

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 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 UML stands for :

(A) Unified Modeling Language

(B) Unified Modular Language

(C) Unique Modeling Language

(D) None of the above

1.5 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

1.6 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 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

1.8 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

1.9 This is another name for a working model that demonstrates how part of an information system works ?

  (A) CASE tool

  (B) Prototype

  (C) Data flow diagram

  (D) Decision Tree

1.10 The coding of data to keep it safe from unauthorized users is called _____.

  (A) Locking

  (B) Hiding

  (C) Masking & Shading

  (D) Encryption

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 An attribute defines specific tasks that an object can perform.

2.2 Feasibility study is carried out by the users of the proposed system.

2.3 Cyclomatic number is useful in software testing.

2.4 MIS stands for Management Information Security.

2.5 Program Flow charts are essential tools for data collection.

2.6 Systems where a central computer does the processing are called centralized systems.

2.7 In Probabilistic system the interaction between various subsystems cannot be defined with certainty

2.8 Analysis Phase is a time consuming phase and yet a very crucial phase.

2.9 Understanding the problem fully and detailing the requirements of an information system is one of the tasks conducted during the development phase.

2.10 Black Box testing name is due to its black color of the 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	Maintenance	A.	Performance Tuning
3.2	Black Box testing is applied to	B.	It is a repository of the data elements in a system.
3.3	Data Dictionary	C.	Rectangles
3.4	A working model of a system	D.	DFD
3.5	Planning tool	E.	Encryption
3.6	In ER modeling, entities are depicted using	F.	Gantt Chart
3.7	Condition stub	G.	Physical Layer
3.8	A diagram which depicts the flow of data in different elements of the system	H.	COCOMO
3.9	CASE tools	I.	Requirements Specification
3.10	Cost Estimation Model	J.	Automate SDLC activities
		K.	Decision Table
		L.	Check digit
		M.	Prototype

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	Coupling	B	Software Development	C	Analysis	D	System maintenance
E	Debugging	F	System Prototype	G	Data Structures	H	DFD-0
I	Structured chart	J	Overloading	K	Module	L	Testing
M	Black Holes						

4.1 The context diagram is also known as _____.

4.2 _____ is a measure of the degree of interdependence between modules.

4.3 Software Requirement Specification (SRS) is also known as specification of _____.

4.4 OOD languages provide a mechanism where methods performing similar tasks but vary in arguments and that can be assigned to the same name is called _____.

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

4.6 _____ is finding and correcting errors in the program code.

4.7 Data dictionary describes every data element and _____.

4.8 Changes made periodically to a system after its implementation is called _____.

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

4.10 _____ is a process by which the output of a system is measured against a standard and any difference is corrected by altering the input.

PART TWO

(Answer any FOUR Questions)

5. (a) Define Software Development Life Cycle (SDLC). Describe various phases of SDLC. Briefly explain various types of documentation involved in each phase of SDLC.

(b) Elaborate the significance of Use case diagram in UML. At which phase of System Development is it drawn ? Explain steps for preparing Use case diagram with example. **(8+7)**

6. (a) What is the difference between Coupling and Cohesion with reference to modular design approach ?

(b) Compare the Object-Oriented approach with Module Oriented Approach. **(9+6)**

7. (a) What is Computer Aided Software Engineering (CASE) ? Describe the types and advantages of CASE tools.

(b) Explain the DevOps development methodology. **(8+7)**

8. (a) Differentiate between Rapid Application Development (RAD) and Joint Application Development (JAD).

(b) "A form is generally classified by what it does in the system". Considering the above statement what should be the three primary classifications of forms ? Enumerate the requirements of form design.

(c) Differentiate between Black Box and White Box Testing. **(5+5+5)**

9. (a) Differentiate between Boundary Value Analysis and Cause Effect Graphing Technique.

(b) What is Requirement Engineering ? What are the objectives of Requirement Analysis ?

` (c) What are the roles of System Analysts ? **(5+5+5)**

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SPACE FOR ROUGH WORK

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