

## A8-R5 : SYSTEMS ANALYSIS, DESIGN AND TESTING

DURATION : 03 Hours

MAXIMUM MARKS : 100

OMR Sheet No. :

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Roll No. :

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Answer Sheet No. :

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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 respect.

**DO NOT OPEN THE QUESTION BOOKLET UNTIL YOU ARE TOLD TO DO SO.**

**PART-ONE**

**(Answer all the 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** White Box techniques are also classified as

- (A) Error guessing technique
- (B) Design based testing
- (C) Structural testing
- (D) None of the above

**1.2** Which of the following is not a Software Development Life Cycle Phase ?

- (A) Requirements Gathering
- (B) Test Closure
- (C) Coding
- (D) Testing

**1.3** What is the meaning of Functional Cohesion ?

- (A) Operations are part of single functional task and are placed in same procedures.
- (B) All operations that access the same data are defined within one class.
- (C) All operations that access the data from outside the module.
- (D) None of the above.

**1.4** If each higher level entity belongs to the lower level entity, then what kind of generalization is it ?

- (A) Modal generalization
- (B) Partial generalization
- (C) Total generalization
- (D) None of the mentioned

**1.5** What is multiplicity for an association ?

- (A) The multiplicity at the target class end of an association is the number of instances that can be associated with a single instance of source class.
- (B) The multiplicity at the target class end of an association is the number of instances that can be associated with a multiple number of instance of source class.
- (C) Both (A) and (B)
- (D) None of the above

**1.6** Which type of testing will be beneficial to check whether coding standards are followed ?

- (A) Dynamic Testing
- (B) Static Testing
- (C) Parameter Testing
- (D) Computation Testing

**1.7** Which of the following features express the similarities between the entity set ?

- (A) Specialization
- (B) Generalization
- (C) Uniquation
- (D) Inheritance

**1.8** The Switch is switched off once the temperature falls below 18 and then it is turned on when the temperature is more than 21. Identify the Equivalence values which belong to the same class.

- (A) 12,16,22
- (B) 24,27,17
- (C) 22,23,24
- (D) 14,15,19

**1.9** Alpha testing is done at

- (A) Developer's end
- (B) User's end
- (C) Developer's & User's end
- (D) None of the above

**1.10** 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

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 A ternary relationship is so called because it contains two entities and one association between them.

2.2 Business Risk affects the Organization developing or Procuring the software.

2.3 Types of quality tools are Problem Identification Tools but not Problem Analysis Tools.

2.4 Statement testing, decision testing, condition coverage all of them uses white box technique.

2.5 An entity set that has a primary key is called as a weak entity set.

2.6 Black box testing is only functional testing.

2.7 The two types of incremental testing approaches are top down and bottom up approach.

2.8 Every weak entity set must be associated with an identifying entity. The weak entity is then said to be existence dependent on the identifying entity set.

2.9 Product Risk does not affects the quality or performance of the software.

2.10 A minimum cardinality is the minimum number of entity instances that may participate in a relationship instance.

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)

	X		Y
3.1	UML	A.	Modeling the systems processes and threads
3.2	Process View	B.	White box testing
3.3	Handles the invocation of remote methods in a Java program.	C.	Unified Modeling Language
3.4	Boundary value analysis	D.	Stereotypes
3.5	Specification of a communication	E.	RMI framework
3.6	The first phase in the systems development process	F.	Ctrl+P+r
3.7	Cyclomatic complexity	G.	Models
3.8	Identify system goals	H.	Black Box Testing
3.9	Capturing the vocabulary.	I.	Use cases
3.10	Visualizing a system	J.	Uml Messages
		K.	Design View
		L.	Planning
		M.	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	Behaviour of a variable	B	Annotational things	C	Objects	D	Software Systems
E	Data flow diagrams	F	SaaS	G	Modality	H	Diamonds
I	Class	J	Relation	K	Circles	L	Attribute
M	Arrow						

- 4.1 \_\_\_\_\_ is a way of providing functionality on a remote server with client access through a web browser.
- 4.2 The \_\_\_\_\_ of a relationship is 0 if there is no explicit need for the relationship to occur or the relationship is optional.
- 4.3 \_\_\_\_\_ represent relationship sets in an ER diagram.
- 4.4 The \_\_\_\_\_ enables the software engineer to develop models of the information domain and functional domain at the same time.
- 4.5 A run chart is used to monitor the \_\_\_\_\_ over time for a process or system.
- 4.6 In data flow diagrams, \_\_\_\_\_ are used to represent processes that take data inflows and transform them to information outflows.
- 4.7 The descriptive property possessed by each entity set is \_\_\_\_\_.
- 4.8 Algorithmic and Object-Oriented are the two common ways for modeling \_\_\_\_\_.
- 4.9 An Object-Oriented program is structured as a community of interacting agents, called \_\_\_\_\_.
- 4.10 The explanatory parts of the UML model are known as \_\_\_\_\_.

**PART TWO**

**(Answer any FOUR Questions)**

5. (a) What do you understand by system analyst ? Briefly explain the phases of System Development Life Cycle.

(b) What do you understand by Requirements Determination ? Also explain in brief the Major Activities of requirement Determination.

**(8+7)**

6. (a) What is the objective of feasibility study ? Lists the Steps involved in feasibility analysis.

(b) Explain in brief the various Conversion Methods with their advantages.

**(7+8)**

7. (a) Differentiate between unit testing and Integration testing.

(b) What do you understand by Non-Functional Testing ? State any four characteristics of Non-Functional Testing.

(c) Differentiate between Regression testing and Re-testing. (write any five)

**(5+5+5)**

8. (a) Explain an Entity Relationship diagram with Suitable example. Also write any four differences between the strong entity set and weak entity set ?

(b) Explain various type of Attribute define in an entity set. Also explain various type of relationship with example ?

**(8+7)**

9. (a) What do you understand by Rapid Application Development (RAD) ? Also write its advantages ?

(b) What is a Distributed System ? List the Characteristics of Distributed System and write the advantages and disadvantages of Distributed System.

**(7+8)**

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**SPACE FOR ROUGH WORK**

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