ROLL NO. _____

Code: DC59/ DC109 Subject: ANALYSIS & DESIGN OF INFORMATION SYSTEMS

DipIETE – CS (Current & New Scheme)

Time: 3 Hours **JUNE 2016** **Max. Marks: 100**

PLEASE WRITE YOUR ROLL NO. AT THE SPACE PROVIDED ON EACH PAGE IMMEDIATELY AFTER RECEIVING THE QUESTION PAPER.

NOTE: There are 9 Questions in all.

- **Question 1 is compulsory and carries 20 marks. Answer to Q.1 must be written in the space provided for it in the answer book supplied and nowhere else.**
- **The answer sheet for the Q.1 will be collected by the invigilator after 45 minutes of the commencement of the examination.**
- **Out of the remaining EIGHT Questions answer any FIVE Questions. Each question carries 16 marks.**
- **Any required data not explicitly given, may be suitably assumed and stated.**

Q.1 Choose the correct or the best alternative in the following: (2×10)

a. Decision support system is an information system that:

(A) Captures and processes data about business transactions.
(B) Provides for management-oriented reporting based on transaction processing and operations of the organization.
(C) Supports the planning and assessment needs of executive managers.
(D) Helps to identify decision-making opportunities.

b. System owners:

(A) Set the vision and priorities for the system.
(B) Define the business requirements and expectations for the system.
(C) Translate the business requirements into a feasible technical solution.
(D) Construct, deploy, and maintain the information systems.

c. logical Design in System design Phase:

(A) Is a picture of a system that represents reality or a desired reality.
(B) Involves the translation of business user requirements into a system model that depicts only the business requirements.
(C) Involves the translation of business user requirements into a system that depicts a technical implementation of the users' business requirements.
(D) Involves collecting information about system problems, requirements, and preferences.

d. The major task involved in decision analysis phase of system development is:

(A) To recommend a system solution.
(B) To define acceptance test cases.
(C) To communicate the requirements statements.
(D) To establish system improvement objectives.

e. use-case diagram:

(A) Is the act of breaking a system into sub-components.
(B) Is a textual description of the business event and how the user will interact with the system to accomplish the task.
(C) Depicts the inter-actions between the system and external systems and users.
(D) Is a behaviorally related sequence of steps for the purpose of completing a single business task.

f. Association is:

(A) A use case that extends the functionality of the original use-case.
(B) A use case that reduces redundancy among two or more other use cases by combining the common steps found in those cases.
(C) A relationship between use cases indicating that one use case cannot be performed until another use case has been performed.
(D) A relationship between an actor and a use case in which an interaction occurs between them.

g. Normalization is:

(A) A technique used to improve a data model for implementation as a database.
(B) A data analysis technique that organizes data into groups to form non-redundant, stable, flexible, and adaptive entities.
(C) An entity whose attributes have no more than value for a single instance of that entity.
(D) An entity whose non-primary-key attributes is dependent on the full primary key.

h. Model-Driven system design approach is:

(A) The specification of a detailed computer-based solution.
(B) A system design technique that decomposes the system's processes into manageable components.
(C) A system design approach that utilizes structured, prototyping, and JAD techniques to quickly develop systems.
(D) A system design approach that emphasizes drawing system models to document technical and implementation aspects of a system.

i. Entity class is an object class that:

(A) Contains business- related information and implements the analysis classes.
(B) Contains application logic.
(C) Provides functionality to read and write persistent attributes in a database.
(D) Specifies the software solution in terms of collaborating objects, their attributes, and their methods.

j. Data store of accumulated system knowledge is called the:

(A) Repository **(B)** Program library
(C) Database **(D)** Data warehouse

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Answer any FIVE Questions out of EIGHT Questions.
Each question carries 16 marks.

Q.2 a. Who is a systems analyst? Briefly describe the skills, knowledge and traits that the system analyst must possess. **(8)**

b. Explain the most important business trends that are impacting information systems. **(8)**

Q.3 a. What is a Capability Maturity Model (CMM)? Explain the different maturity levels of CMM. **(8)**

b. Briefly explain any five general principles that should underlie all systems development methodologies. **(8)**

Q.4 a. Briefly explain the different tasks involved in Scope Definition Phase of System Development. **(8)**

b. Briefly explain the different tasks involved in Requirements Analysis Phase of System Development. **(8)**

Q.5 a. Explain the advantages provided by use-case modelling. **(8)**

b. Explain the following terms related to Data Modelling: **(2x4 = 8)**
(i) Entities (ii) Attributes
(iii) Relationships (iv) Cardinality

Q.6 a. Explain the different steps that should be performed to evolve the requirements use-case into analysis case-use model in object-oriented analysis. **(8)**

b. Briefly explain the main task involved in the system design for In-House Development. **(8)**

Q.7 a. Explain the following terms in the context of user interface design:
(i) Pull-down and cascading menus.
(ii) Toolbar and Iconic menus. **(4x2 = 8)**

b. What is a dialogue? Explain the guidelines related to dialogue tone and terminology. **(8)**

Q.8 a. Explain the following terms in the context of Object-Oriented System:
(i) Entity Classes. (ii) Interface Classes.
(iii) Control Classes. (iv) System Classes. **(2x4=8)**

b. What is a state machine diagram? Explain the activities involved in the construction of state machine diagram. **(8)**

Q.9 a. Briefly explain the tasks involved in the System Construction Phase. **(8)**

b. Briefly explain the commonly used installation strategies of conversion plan. **(8)**