Subject: ANALYSIS & DESIGN OF INFORMATION SYSTEMS

DiplETE – CS (Current & New Scheme)

Time: 3 Hours | **DECEMBER 2018** | 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. A task of developing a technical blueprint and specifications for a solution that fulfills the business requirements is undertaken in the following phase of the system development process
(A) System initiation **(B)** System implementation
(C) System analysis **(D)** System design

b. System builders and designer's perspective of an information system tend to focus on:
(A) database technologies and software technologies
(B) data base systems only
(C) expert transaction systems
(D) transaction processing systems

c. Which one is NOT a phase of the systems development life cycle?
(A) Problem analysis **(B)** Scope definition
(C) Post implementation review **(D)** Requirement analysis

d. A bank customer is stopped by her bank's ATM to withdraw money from her checking account. In this case, who is the primary system actor?
(A) The bank Teller **(B)** The Bank
(C) The bank customer **(D)** The money withdrawal authorization company

e. In object-oriented analysis we evolve the requirements use-case model into the analysis use-case model by performing all of the following steps, except:
(A) Identify, define, and document new use cases
(B) Identify, define, and document new actors
(C) Identify, define, and document new data stores
(D) Identify any reuse possibilities

f. A relationship that exists between the instances of the same entity is called:
(**A**) Associative   (**B**) Recursive
(**C**) Reflexive   (**D**) Identifying

g. The following are intangible entities which can be defined as objects
(i) a motor car
(ii) a bank account
(iii) an aircraft
(iv) a linked list
(**A**) i, ii   (**B**) ii, iv
(**C**) iii, iv   (**D**) ii, iii, iv

h. The condition where the methods and/or attributes defined in an object class can be reused by another object class is known as:
(**A**) Generalization   (**B**) Reusability
(**C**) Encapsulation   (**D**) Inheritance

i. A class that takes data pertaining to a business event and translates the data for appropriate presentation to the user would be a
(**A**) System Class   (**B**) Persistence Class
(**C**) Interface Class   (**D**) Control Class

j. Which of the following is the first phase of the Systems Implementation phase?
(**A**) Conduct system test   (**B**) Build and test networks
(**C**) Prepare conversion plan   (**D**) Build and test databases

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

Q.2   a. What are the four steps in a system development process? What happens in each step? **(8)**

       b. What are the differences between internal and external users of an Information System? Give examples. **(8)**

Q.3   a. Explain any two strategies for automated tools and techniques. **(8)**

       b. Explain the following System development strategies :- **(8)**
           (i)   Model – Driven Development strategy
           (ii) Rapid Application Development strategy

Q.4   a. Who is the system analyst and what are the roles played by system analyst? **(8)**

       b. What is Rapid Architected Analysis? Describe the two different techniques for applying rapid architected analysis. Give examples for both techniques. **(8)**

Q.5   a. Explain the steps required in the process of Use Case Modeling. **(8)**

       b. Explain various components of Use Case diagram. **(8)**

Q.6 a. Illustrate the different diagrams of UML with an example for each. **(12)**

b. Discuss some of the benefits of prototyping. **(4)**

Q.7 a. Explain Menu Driven Interfaces with different types of menus. What are the advantages over instruction driven interface? **(8)**

b. Explain, what are the steps involved in user interface design process? **(8)**

Q.8 a. Explain briefly the following: **(8)**
(i) Strategy Pattern
(ii) Organization Pattern
(iii) Adapter pattern

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

Q.9 a. What is System Construction and Implementation? Explain the Construction Phase. **(6)**

b. Why is it necessary to recover the existing physical system in system enhancement? **(4)**

c. Define : **(6)**
(i) system maintenance
(ii) system enhancement