## Code: DC59    Subject: ANALYSIS & DESIGN OF INFORMATION SYSTEMS

## DiplETE – CS (Current Scheme)

Time: 3 Hours          **JUNE 2015**          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. The step-by-step instructions that solve a problem are called _____.

   (A) An algorithm                (B) A list
   (C) A sequential structure      (D) None of these

b. An information system that captures and processes data about business transactions is called

   (A) MIS                         (B) Expert System
   (C) Transaction Processing System  (D) Office Automation System

c. A candidate key that will most commonly be used to uniquely identify a single entity instance is known as

   (A) Concatenated Key            (B) Primary Key
   (C) Alternate Key               (D) Foreign Key

d. In top down analysis and design

   (A) each succeeding phase is more detailed than the phase before it
   (B) each succeeding phase is as detailed as the phase before it
   (C) each succeeding phase is less detailed than the phase before it
   (D) All of these

e. System prototyping helps the designer in

   (A) Making the programmers understand how the system will function.
   (B) Communicating to the user, quickly, how the system, when developed, will look like and get a feedback.
   (C) Giving a demo of the software, to the system manager to whom he reports.
   (D) Both (A) and (B)

f. Which of the following systems implementation approaches should be used if you want to run the old system and the new system at the same time for a specified period?

(A) Direct                          (B) Pilot
(C) Parallel                        (D) Phased

g. A technique where by a subclass uses an attribute or behaviour of its own instead of an attribute or behaviour inherited from the class is defined as

(A) Polymorphism                    (B) Aggregation
(C) Composition                     (D) Override

h. The Data Flow Diagram (DFD) shows;

(A) The flow of data               (B) The processes
(C) The areas where they are stored (D) All of these

i. The person communicating with the manager to identify information needs is the

(A) Executive vice-president       (B) Vice- president of information system
(C) Programmer                     (D) System analyst

j. In processing controls must be established in a system, in order to

(A) Prohibit tampering with information by unauthorized person
(B) Verify that all data have been processed
(C) Block or trap faulty data from entry into processing
(D) All of the above

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

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**Q.2**  a.  What are the differences between internal and external users of a system? Give examples.    **(8)**

b. Describe the four building blocks of the COMMUNICATION goal for an information system.    **(8)**

**Q.3**  a. Explain the essential phases of system development. For each phase describe its purpose, inputs and outputs.    **(10)**

b.  What are the various automated tools available for system development?    **(6)**

**Q.4**  a.  What is Model-Driven Analysis? Why is it used? What is the major focus of structured analysis?    **(9)**

    b. Why is the decision analysis phase needed?  What are some ways to identify Candidate Solutions?  **(7)**

**Q.5**   a. What are the three components used in Use-Case diagram?  What is their purpose?  **(6)**

    b. What are the six criteria in the Use-Case ranking and priority matrix?  What is Use-Case dependency diagram and why do we use it?  **(10)**

**Q.6**   a. What are the five high-level tasks involved in Conducting System design for a development project to be built-in-house?  **(8)**

    b. What is prototyping?  Explain some of the benefits of prototyping?  **(8)**

**Q.7**   a. What are the basic steps involved in the User Interface design?  How should the interfaces handle errors?  **(8)**

    b. Explain some of the important human engineering factors that should be incorporated into user interface design.  **(8)**

**Q.8**   a. What are main activities of Object Oriented Design?  **(8)**

    b. What are Design Patterns?  Explain any two Design Patterns.  **(8)**

**Q.9**   a. Why is system maintenance necessary?  What are the tasks needed for system maintenance?  **(8)**

    b. What are some of the tasks suggested in technical support?  Why will system enhancement occur?  **(8)**