

**DIPLOMA - VIEP - COMPUTER SCIENCE AND
ENGINEERING (DCSVI)****Term-End Examination****December, 2015****BICS-032 : SYSTEM ANALYSIS AND DESIGN***Time : 2 hours**Maximum Marks : 70*

Note : *All questions are to be answered in English language only. Attempt **five** questions in all. Question no. 1 is **compulsory**. All questions carry equal marks.*

1. (a) Which of the following systems interacts freely with its environment, i.e. taking input and returning output, freely ?
- (i) Closed System
 - (ii) Decision Support System
 - (iii) Open System
 - (iv) All of the above
- (b) Which of the following is the process of systems development, where requirements are converted to a working system that is continually revised ?
- (i) Prototyping
 - (ii) Waterfall Model
 - (iii) Joint Application Design
 - (iv) None of the above

- (c) Which of the following diagrams shows the overview of an organisational system that shows the system boundaries, external entities that interact with the system, and the major information flows between the entities and the system ?
- (i) Context Level DFD
 - (ii) Flow Chart
 - (iii) ERD
 - (iv) All of the above
- (d) Which of the following types of attributes distinctly identifies each instance of an entity type in E-R diagram ?
- (i) Primary key
 - (ii) Secondary key
 - (iii) Alternate key
 - (iv) Candidate key
- (e) In UML (Unified Modeling Language), the class diagrams are prepared for which of the following models ?
- (i) Object Model
 - (ii) Dynamic Model
 - (iii) Functional Model
 - (iv) Spiral Model

- (f) Software is a computer program associated with _____ .
- (i) Proper Documentation
 - (ii) Training Schedule
 - (iii) Both (i) and (ii)
 - (iv) None of the above
- (g) Which of the following types of testing involves the running of the entire system with live data by the actual user ?
- (i) Acceptance testing
 - (ii) Unit testing
 - (iii) Modular testing
 - (iv) None of the above 7×2=14
2. (a) Compare and contrast any *two* of the following : $2 \times 3 \frac{1}{2} = 7$
- (i) Open System and Closed System
 - (ii) Coupling and Cohesion
 - (iii) Logical System and Physical System
- (b) Discuss the traditional methods used to determine the System Requirements. 7
3. (a) Draw the E-R diagram for the following statement : “Teachers teach students in an institution affiliated to a university, the institution involves colleges from different disciplines viz. Management, Science, Engineering, etc.” Use proper notations for each component of the diagram. 7

(b) Write short notes on any **two** of the following : $2 \times 3 \frac{1}{2} = 7$

(i) Methods of System Analysis

(ii) Methods of System Design

(iii) Process Models for System Development

4. (a) Draw the Decision Tree for the following statement : 7

“Only good payment history does not entitle the client for priority treatment. Two other conditions, i.e, Order value > 5000, or Association > 10 years, must be checked while determining the entitlement to receive the priority treatment.”

(b) Discuss any **two** of the following : $2 \times 3 \frac{1}{2} = 7$

(i) Unit Testing

(ii) Integration Testing

(iii) Acceptance Testing

5. (a) Explain all the stages of SDLC (System Development Life Cycle). Draw block diagram, showing interconnectivity and sequencing of stages. 7

(b) What are the components of a Data Flow Diagram ? Give notation and role of each component. Draw DFD (Data Flow Diagram) upto level-1, for a Railway Reservation System. 7

6. (a) Enlist and discuss the various training aids used to train users. Why is training of the users important, before the implementation of the system ? $3\frac{1}{2}+3\frac{1}{2}=7$
- (b) What do you understand by the term 'System Maintenance' ? What are the objectives of system maintenance ? Briefly discuss any two types of system maintenance. $2+2+3=7$
7. Discuss the models developed while designing the system through OOAD (Object Oriented Analysis and Design) technique. Among the identified models, which model is most important ? Justify your answer with a suitable example. $12+2=14$
8. Write short notes on any *two* of the following with suitable examples : $7+7=14$
- (a) Management Information System
 - (b) Decision Support System
 - (c) Transaction Processing System
 - (d) Expert System
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