



Seat No. : \_\_\_\_\_

# NF-101

November-2025

BS (BCA), Sem.-V

## DSC-C-BCA-351T : System Analysis – Design & Development (NEP-2020)

Time : 2:00 Hours]

[Max. Marks : 50

1. Answer the following :
- (1) What is the need of feasibility study? Explain in detail. 5
- (2) Define DFD. Create a context level DFD for Order Placing System where the customer places order for the product. The customer has to do registration and login and also makes payment. The admin manages customers, products, orders and payment. 5
- OR**
- (1) What is data dictionary? Define its rules and example. 5
- (2) What is the use of fact-finding techniques? Explain Interview in detail. 5
2. Answer the following :
- (1) Explain Aggregation & Composition, Link & Association with example. 5
- (2) List elements of use-case diagram. Draw use case diagram for a student contacts a college for admission. He/she submits details on a form. The college verifies the student details. The management takes the decision (Admission granted or rejected) and conveys the status to the students. 5
- OR**
- (1) Explain class & Object, Generalization & specialization. 5
- (2) Explain objects in sequence diagram. Create sequence diagram for login process. 5
3. Answer the following :
- (1) Explain types of relationship in class diagram. 5
- (2) Create an object diagram for ABC India Pvt. Ltd. The company has many departments. Each department has a manager. The company has many employees. 5
- OR**
- (1) Create a class diagram for a publisher who publishes different books. An author can write different books for the same publisher. The publisher pays amount to the author and also generates reports. 5
- (2) List and explain elements of object diagram. 5
4. Answer the following :
- (1) List and explain elements of activity diagram. 5
- (2) Explain types of states in a state-chart diagram. 5

**OR**

- (1) Create a state-chart diagram for a library book states (i.e. available, borrowed, to-be-returned etc.) 5
- (2) State any 5 guidelines for the design of an activity diagram. 5

5. Answer following : (Any Ten) 10

- (1) \_\_\_\_\_ is a document containing number of questions that can be sent to many individuals
- (a) Document Review (b) Questionnaires  
(c) Interview (d) None of the above
- (2) \_\_\_\_\_ symbol is not included in context level DFD.
- (a) Process (b) Data Flow  
(c) Data Store (d) External Entity
- (3) \_\_\_\_\_ is a type of relationship between two use-cases.
- (a) include (b) extends  
(c) Both (a) and (b) (d) None of these
- (4) The \_\_\_\_\_ combined fragment is used to make only one choice between two or more message sequences.
- (a) Alternatives (b) Options  
(c) Loop (d) Fragment
- (5) \_\_\_\_\_ are the conditions used to messages to be executed.
- (a) Activation (b) Lifeline  
(c) Guards (d) Messages
- (6) When a class is associated with itself then it is called \_\_\_\_\_ association.
- (a) Unidirectional (b) Bidirectional  
(c) Reflexive (d) Associative
- (7) \_\_\_\_\_ is the right symbol for external entity.
- (a) Circle (b) Rectangle  
(c) Oval (d) Diamond
- (8) An object diagram is derived from the \_\_\_\_\_ diagram.
- (a) Class (b) Use-case  
(c) Sequence (d) Activity
- (9) The state-chart diagram is also called \_\_\_\_\_.
- (a) State Diagram (b) State machine diagram  
(c) State-transition diagram (d) All of these
- (10) A \_\_\_\_\_ is a synchronization element where a single flow of control divides into two or more simultaneous flows.
- (a) Synchronization (b) Fork  
(c) Join (d) Parallel
- (11) Which is the true statement about context diagram ?
- (a) It represents the entire system.  
(b) It shows all internal processes of the system.  
(c) It shows the data stored in the database.  
(d) All of these
- (12) \_\_\_\_\_ is the other name of “has-a” relationship.
- (a) Generalization (b) Aggregation  
(c) Composition (d) Link