

**Q.P. Code : 581400****(3 HOURS)****[Total Marks: 80]**

- N.B.: (1) Question no. 1 is compulsory.  
 (2) Attempt any three questions from remaining.  
 (3) Assume suitable data wherever necessary.

- Q.1. Answer the following: [20]  
 a) Explain the representation of Zachman Framework for an Enterprise.  
 b) Describe different phases of SDLC.
- Q.2. a) Explain purpose of use case diagram with example. [10]  
 b) Draw two levels of DFD for Stock/Inventory Management System. The items which are purchased from the various dealers and suppliers are recorded into the database. The software system provides facilities for adding new item, removing an item, updating the stock, purchasing and total stock. [10]
- Q.3. a) You are required to present an outline design of a system that will be used by doctors at a medical practice to keep basic patient records. The system should record each consultation between a doctor and patient, any illness diagnosed, and any drugs prescribed to the patient. At regular intervals, an auditor will use the system to check whether the same drug is being prescribed repeatedly to a particular patient. Draw UML Class diagram for system to support this functionality. [10]  
 b) Explain Cohesion and coupling in short. [10]
- Q.4. a) A project requires an initial investment of Rs. 2,25,000 and is expected to generate the following net cash inflows:
- | Year              | 1      | 2      | 3      | 4      |
|-------------------|--------|--------|--------|--------|
| Cash inflow (Rs.) | 95,000 | 80,000 | 60,000 | 55,000 |
- Compute net present value of project if the minimum desired rate of return is 12%. [10]
- b) Draw Interaction/Communication diagram for new course registration at college. [10]
- Q.5. a) Explain the need of deployment diagram. Draw a deployment diagram to model fully distributed systems. [10]  
 b) Draw a state diagram for online shopping system where a Customer can browse through the product catalog and add the items to shopping cart. He will require to login for purchase with different payment options and provided to give feedback. [10]
- Q.6. Write short notes on: (Any two) [20]  
 a) Application Architecture  
 b) Principles of user interface (UI) design  
 c) Software requirements specification (SRS)  
 d) Design pattern