

Duration: 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

- Q1 (a) Define system and with suitable diagram explain the System Development Life Cycle in detail. 10  
 (b) List and explain the roles of system analyst in brief. 10  
 "Systems Analyst as Agent of Change", Justify with suitable example.
- Q2 (a) Define Process and Re-engineering. Draw and explain Business Process Reengineering (BPR) life cycle. 10  
 (b) What is cohesion and coupling in the context of software design? Explain different types of coupling. 10
- Q3 (a) Explain the need of deployment diagram. Draw a deployment diagram to model fully distributed systems. 10  
 (b) Draw the use case diagram for online railway reservation system with extend, include relations between use cases. 10
- Q4 (a) Draw and explain Zachman framework. 10  
 (b) Give Types of Costs and Benefits. Explain **ALL** the techniques used for Cost-Benefit Analysis in brief with formulae. 10
- Q5 (a) What is the importance of Data flow diagram (DFD) in structured analysis and design? Draw DFD for suitable example. 10  
 (b) Explain the rules for developing State Machine Diagram. Draw the State Machine Diagram for **Water Phases** e.g. Water can exist in several states - liquid, vapor, solid, and plasma. 10
- Q6 Write short note (Any Two) 20  
 a) SRS document  
 b) Design of user interface  
 c) Requirement gathering techniques