

**N.B. :** (1) Question No. 1 is **compulsory**.

(2) Attempt any **four** questions from the remaining **six** questions.

(3) **Figures** to the **right** indicate **full** marks.

1. Answer the following :- 20
  - (a) How is Software architecture different from Software design ?
  - (b) Explain how Middle ware and Component frame-work induces architectural style.
  - (c) What are the different types of connectors based on interactive services ?
  - (d) Explain in brief the guidelines of a good Software architecture for achieving NFP (no-functional property) goals.
  
2. (a) Explain Prescriptive and Descriptive architecture with examples. 10  
 (b) Compare the Model-based and Simulation-based analysis techniques used in Software architecture. 10
  
3. (a) Compare and contrast on the following :- 10
  - (i) Event-based and Client-server based Data Distribution Connectors.
  - (ii) Static and dynamic aspects of Models in Software Architecture.
 (b) List various architectural styles. What are the differences between Architectural styles and Architectural patterns. 10
  
4. (a) Explain the basic features of xADL used as a modeling language. 10  
 (b) Explain MVC architectural pattern and give an example of an application where it is used. 10
  
5. (a) Comment on the styles of architecture pattern for a Mobile Code and Implicit Invocation. 10  
 (b) Explain the Distributed Object Style in connection with CORBA middle ware. 10
  
6. (a) Define and explain the following terms :- 8
  - (i) Architectural drift and Architectural erosion
  - (ii) Architectural model and Architectural recovery.
 (b) Suggest an Architecture with Implicit Invocation style for the following system :- 12  
 The KWIC (Key Word in Context) index system accepts an ordered set of lines. Each line is a ordered set of words and each word is a ordered set of characters. Any line may be 'circularly shifted' by repeatedly removing the first word and appending it at the end of the line. The KWIC index system outputs a listing of circular shifts of all lines in an alphabetical order.

1. Answer the following :-
  - (a) How is Software architecture different from Software design ?
  - (b) Explain how Middle ware and Component frame-work induces architectural style.
  - (c) What are the different types of connectors based on interactive services ?
  - (d) Explain in brief the guidelines of a good Software architecture for achieving NFP (no-functional property) goals.
  
2. (a) Explain Prescriptive and Descriptive architecture with examples. 10  
 (b) Compare the Model-based and Simulation-based analysis techniques used in Software architecture. 10
  
3. (a) Compare and contrast on the following :- 10
  - (i) Event-based and Client-server based Data Distribution Connectors.
  - (ii) Static and dynamic aspects of Models in Software Architecture.
 (b) List various architectural styles. What are the differences between Architectural styles and Architectural patterns. 10
  
4. (a) Explain the basic features of xADL used as a modeling language. 10  
 (b) Explain MVC architectural pattern and give an example of an application where it is used. 10
  
5. (a) Comment on the styles of architecture pattern for a Mobile Code and Implicit Invocation. 10  
 (b) Explain the Distributed Object Style in connection with CORBA middle ware. 10
  
6. (a) Define and explain the following terms :- 8
  - (i) Architectural drift and Architectural erosion
  - (ii) Architectural model and Architectural recovery.
 (b) Suggest an Architecture with Implicit Invocation style for the following system :- 12  
 The KWIC (Key Word in Context) index system accepts an ordered set of lines. Each line is a ordered set of words and each word is a ordered set of characters. Any line may be 'circularly shifted' by repeatedly removing the first word and appending it at the end of the line. The KWIC index system outputs a listing of circular shifts of all lines in an alphabetical order.
  
7. Write short notes on the following :- 20
  - (a) Ambiguity, Accuracy and precision in the characterization of architectural models.
  - (b) Service-oriented Architecture and Web Services
  - (c) Domain Specific Software Architectures (DSSAS)
  - (d) Architecture Description Language (ADL).