

Total No. of Questions: 8]

SEAT No. :

**P281**

**[6003]-360**

[Total No. of Pages : 2

**T.E. (Computer Engineering)/(A.I.D.S.)  
SOFTWARE MODELING AND ARCHITECTURES  
(2019 Pattern) (Semester-II) (Elective II) (310254 D)**

*Time : 2½ Hours]*

*[Max. Marks : 70*

*Instructions to the candidates:*

- 1) Answer Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8.
- 2) Neat diagrams must be drawn wherever necessary.
- 3) Figures to the right indicate full marks.
- 4) Assume suitable data, if necessary.

- Q1)** a) What are the major components of interaction overview diagrams? [6]  
b) What are the types of a state machine diagram? Explain its types in detail. [6]  
c) Explain Fork and Join concept in Activity diagram with a suitable example [6]

OR

- Q2)** a) Explain the significance of timing diagram with a suitable example. [6]  
b) Draw state machine diagram for coffee vending machine. [6]  
c) Explain Communication diagram with example. [6]

- Q3)** a) Explain the real time software architecture with a suitable example. [8]  
b) Explain the importance of Object oriented software architecture and its applicability in software development? [9]

OR

- Q4)** a) What is architecture pattern? What is significance of architecting software product? [5]  
b) What is the software architecture? What are the three different views of an architecture? Explain the component of 4+1 architectural view model. [12]

*P.T.O.*

- Q5)** a) Define the importance of architecture structure and views. [6]  
b) Explain the importance of Object oriented software architecture and its applicability in software development. [6]  
c) Explain the broker pattern for design of service oriented architecture. [6]

OR

- Q6)** a) Explain the real time software architecture with a suitable example. [6]  
b) Explain synchronous communication pattern in Client server architecture with example? [6]  
c) Explain Location & Platform transparency in service oriented architecture [6]

- Q7)** a) What is singleton pattern? Explain one example scenario where you will singleton pattern to get applied? [7]  
b) Draw the structure of observer pattern with suitable class diagram including subject and observer [6]  
c) Explain the broker pattern for design of service oriented architecture [4]

OR

- Q8)** a) What is *Behavioral Pattern*? In which situation you use the *Behavioral* pattern? What is observer *Behavioral* pattern? Explain observer *Behavioral* in detail with the applicability of singleton creational pattern. [9]  
b) What are the different approaches of design patterns in software architecture? [8]

