

Total No. of Questions : 10]

SEAT No. :

**P3995**

**[5561]-702**

[Total No. of Pages : 2

**B.E. (Information Technology)**  
**SOFTWARE DESIGN AND MODELING**  
**(2015 Pattern) (Semester - I) (End Sem.) (414455)**

*Time : 2½ Hours]*

*[Max. Marks : 70*

*Instructions to the candidates:*

- 1) *Answers Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8, Q.9 or Q.10.*
- 2) *Neat diagrams must be drawn whenever necessary.*

**Q1)** a) Explain process & component of unified approach with a neat diagram. [6]

b) Explain building blocks of UML. [4]

OR

**Q2)** a) Draw a detailed sequence diagram for Banking system scenario. [6]

b) What do you understand by Multiple Inheritances? Describe with suitable example. [4]

**Q3)** a) List classifiers in UML & explain in brief with suitable example. [6]

b) Explain collaboration diagram with suitable example. [4]

OR

**Q4)** a) What do you understand activity. Explain with suitable example. [6]

b) Prepare an activity diagram for awarding marks to regular student. If the student has attended 80% classes. He is awarded minimum 5 marks. If the student has attended more than 80% classes. He is awarded 10marks. Those who have completed 50% are given 5marks & rests are given 0 marks. [4]

**Q5)** a) Consider the hospital management system application with the following requirements. [8]

i) System should handle the in-patient, out-patient information through receptionist.

ii) Doctors are allowed to view the patient history & give their prescription.

iii) Give the state chart, component & development diagrams.

b) Why software architecture is so important in system design? Enlist & briefly explain different Architectural styles. [8]

OR

**P.T.O.**

- Q6)** a) Explain various types of design patterns with suitable example. [8]  
b) Draw an activity diagram for e-commerce website using UML. [8]

- Q7)** a) What are the principles of testing? Explain in detail. [8]  
b) Apply strategy design pattern to company employee has a name & a performance index in the range of 1 to 5. When the Index is 2 the increment is 10% of the previous year salary, 3 the increment is 15% of the previous salary same like 4<sup>th</sup> & 5<sup>th</sup>. [8]

OR

- Q8)** a) What is strategy pattern & skeleton code with their merits & demerits. [8]  
b) What is UTRASP? Explain its pattern creator, information expert, low high cohesion controller in detail. [8]

- Q9)** a) Difference between Black & White box Testing with suitable example in detail. [10]  
b) Describe multiple client server Architecture patterns with suitable example in detail. [8]

OR

- Q10)** a) Explain V model with diagram & give their advantages & disadvantages. [10]  
b) Draw & explain state chart diagram for E-ticketing. [8]

