

INTERNATIONAL CENTRE FOR APPLIED SCIENCES

(Manipal University)

II SEMESTER B.S. DEGREE EXAMINATION – JUNE 2016

SUBJECT: SOFTWARE DESIGN USING OBJECT ORIENTED PARADIGM (CS 122)

(BRANCH: CE /CS /E&C/ E&E)

WEDNESDAY, 15TH JUNE, 2016

Time: 3 Hours

Max. Marks: 100

✓ **Answer ANY FIVE full Questions.**

Railway Reservation System(RRS)

Railway Reservation System is a system used for booking tickets over internet. Any Customer Can book tickets for different trains. Customer can book a ticket only if the tickets are available. Customer searches for the availability of tickets then if the tickets are available he books the tickets by initially filling details in a form. Tickets can be booked in two ways by i-ticket or by e-ticket booking.

In case of i-ticket booking customer can book the tickets online and the tickets are couriered to Particular customer at their address. But in case of e-ticket booking and cancelling tickets are booked and cancelled online sitting at the home and customer himself has to take print of the ticket but in both the cases amount for tickets are deducted from customers account.

For cancellation of ticket the customer has to go at reservation office than fill cancellation form and ask the clerk to cancel the ticket than the refund is transferred to customer account. After booking ticket the customer has to checkout by paying fare amount to clerk.

- 1.A. Draw the Use Case Diagram for Railway Reservation System (RRS CASE). (10)
- 1.B. Explain «includes» and «extends» relationship using the examples from the above Railway Reservation System (RRS CASE). (10)
- 2.A (i) Explain Noun Phrase Approach and apply the same for Railway Reservation System (RRS CASE). (5)
- (ii) Write a Fully Dressed Use case description for any use case of your choice for Railway Reservation System (RRS CASE). (5)
- 2.B. Explain CRC Approach with help of anyone Class for Railway Reservation System (RRS CASE). (10)

3. Explain Common Class Patterns Approach with examples for each category for Railway Reservation System (RRS CASE). (20)
- 4.A. Draw the Activity Diagram “Book Ticket” and “Cancel Ticket” for the Railway Reservation System (RRS CASE) (10)
- 4.B. Draw System Sequence Diagram for "Cancel Ticket " Railway Reservation System (RRS CASE) (10)
5. Draw a Domain/Conceptual Class Diagram/Domain Object Model for point-of-sale terminal of a Super Market with all associations. Make suitable assumptions (20)
- 6.A. What do you mean by a State-Chart-Diagram? Draw a State Chart Diagram for an Telephone. Make suitable Assumptions (10)
- 6.B. Compare Waterfall Model and Rational Unified Process (10)
7. What is a package? Explain visibility, importing, exporting, generalization in packages (20)
8. Explain with examples
 - (i) Inheritance
 - (ii) Abstraction
 - (iii) Polymorphism
 - (iv) UP Phases(5+5+5+5)

