

**TILAK MAHARASHTRA VIDYAPEETH, PUNE**  
**BACHELOR OF COMPUTER APPLICATIONS (B.C.A.)/**  
**SPECIALIZATION IN CYBER SECURITY (CS)**

**EXAMINATION : MAY - 2024**

**SEMESTER – V/VI**

**Sub : Unified Modeling Language (BCA-546-18/ BCA-546-20/BCA-641)**

**Object Oriented Modeling & Design (BCA-CS-546-20)**

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**Date : 25/05/2024**

**Total Marks : 60**

**Time: 2.00 pm to 4.30 pm**

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**Instructions:**

1. All questions are compulsory unless and otherwise stated.
2. Bold figures to the right of every question are the maximum marks for that question.
3. Candidates are advised to attempt questions in order.
4. Answers written illegibly are likely to be marked zero.
5. Use of scientific calculators, Log tables, Mollier Charts is allowed.
6. Draw neat and labelled diagrams wherever necessary.

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**Q.1. Case Study**

**(20)**

Draw a class diagram, use case diagram and activity diagram for a 4 wheeler garage system. Consider below problem statement and draw the diagram.

The garage is for different types of four wheelers. The advanced booking/appointment is done on phone or in person. On the day of the appointment as soon as the customer arrives, a job card is created to note all the problems, requirements for the vehicle. On completion of the repair / maintenance / service the engineer prepares a report based on which a bill is created. The payment is accepted in cash against the bill.

**Q.2. Solve (Any two)**

**(30)**

1. Design an use case diagram, class diagram and activity diagram for College Management System
2. Draw use case diagram, class diagram, sequence diagram for banking application.
3. What are the principles of Modeling? Draw activity diagram and sequence diagram for library management system for issuing a book.

**Q.3. Answer the following in 2-3 lines (Solve any 5)**

**(10)**

1. What is model?
2. Draw a Sequence diagram for telephone talk process.
3. What is swimlanes in UML?
4. What is UML? What is the importance of UML?
5. What is difference between flowchart and activity diagram
6. What is a use of actor in usecase diagram?
7. What is an event and how it influences the states of an object?