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**Question Paper Code : X 10321**

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2020  
Fifth/Sixth Semester  
Computer Science and Engineering  
CS 8592 – OBJECT ORIENTED ANALYSIS AND DESIGN  
(Common to Information Technology/Computer and Communication  
Engineering)  
(Regulations 2017)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions

PART – A

(10×2=20 Marks)

1. Define OOAD.
2. List any two common ways to relate use cases and give suitable examples.
3. State the objective of Elaboration.
4. What is multiplicity ?
5. State the purpose of UML activity diagram.
6. Differentiate event, state and transition.
7. What is meant by cohesion ?
8. “Coupling should be low” – Justify.
9. How is debugging different from testing ?
10. What is method testing ?

PART – B

(5×13=65 Marks)

11. a) Elaborate use case modelling process with suitable examples.  
(OR)  
b) With suitable example explain the use case include relationship and extend relationship.



12. a) Differentiate Elaboration and Inception. List any five and artifacts related to Inception.

(OR)

- b) With an illustration, explain the class hierarchies. Also state the guidelines for defining a super class.

13. a) Justify the need for component and deployment diagrams with a suitable real time example.

(OR)

- b) Differentiate state independent and state dependent objects. How to model them using State Machine Diagrams ?

14. a) What is GRASP ? List and explain the nine object oriented design principles.

(OR)

- b) With an illustrated example diagram, brief on adapter pattern.

15. a) What are test cases ? List the guidelines for developing quality assurance test cases.

(OR)

- b) Suggest strategies to carry out unit testing and integration testing in an object oriented development environment.

PART – C

**(1×15=15 Marks)**

16. a) A library has books, journals and laptops. Undergraduate students can borrow only books and journals. Post graduate students can borrow only journals and laptops. A maximum of three books, two journals and one laptop will be issued per student. If they return these items beyond ten days, a fine of Rs. 10 per day is levied for each book/journal. However, for late return of laptop a fine of Rs. 1,000 is levied. The librarian also periodically takes stock of books, journals and laptops and generates the report of lent out items and lost items. Construct the necessary activity diagrams for the operations carried out by the librarian.

(OR)

- b) A mobile device has to be fitted with an alarm clock. The clock has a display unit to show the time of day. Using buttons, the user can set the hours and minutes fields individually. It supports a 24-hour display. It is possible to set one or two alarms. When an alarm fires, it will sound some noise. The user can turn it off, or choose to 'snooze'. If the user does not respond at all the alarm will turn off itself after 2 minutes. 'Snoozing' means to turn off the sound, but the alarm will fire again after some minutes of delay. This 'snoozing time' is pre-adjustable. Identify the functional requirements for the clock and model it with a use case diagram.
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