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Code No. : 17644 S N/O

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS), HYDERABAD

Accredited by NAAC with A++ Grade

B.E. (I.T.) VII-Semester Supplementary Examinations, May/June-2023

Software Reuse Techniques (PE-III)

Time: 3 hours

Max. Marks: 60

Note: Answer all questions from **Part-A** and any **FIVE** from **Part-B**

Part-A (10 × 2 = 20 Marks)

Q. No.	Stem of the question	M	L	CO	PO
1.	Mention the Four Interlocking domains of Reuse Driven Software Engineering.	2	1	1	1
2.	Design pattern is necessary in Software Design- Justify.	2	2	1	2
3.	Distinguish domain engineering and application systems engineering.	2	3	2	1
4.	Compare components and abstract components.	2	2	2	1
5.	Illustrate the structure of proxy pattern.	2	3	3	1
6.	Mention one advantage of chain responsibility pattern.	2	1	3	1
7.	Mention the participants in observer pattern.	2	1	4	1
8.	Write the intent of iterator pattern.	2	1	4	1
9.	What are the common uses of model -view-controller architectural pattern?	2	1	5	1
10.	Write the context of blackboard pattern.	2	1	5	1
Part-B (5 × 8 = 40 Marks)					
11. a)	Software reuse requires changes in process. Justify.	4	3	1	2
b)	Explain different concurrent process involved in software reuse.	4	1	1	1
12. a)	Illustrate the structure of builder design pattern with class diagram and describe the collaboration with a sequence diagram.	4	2	2	1
b)	How can we use design pattern? Illustrate with a simple approach to applying a design pattern effectively.	4	3	2	1
13. a)	Consider the two-way adapter that integrates Unidraw, a graphical editor framework, and QOCA, a constraint-solving toolkit Both systems have classes that represent variables explicitly: Unidraw has StateVariable, and QOCA has Constraint Variable. To make Unidraw work with QOCA, ConstraintVariable must be adapted to State Variable; to let QOCA propagate solutions to Unidraw, StateVariable must be adapted to ConstraintVariable. Justify how two- way adapter pattern to provides the solution to the above problem.	5	3	3	3
b)	Discuss the several ways the design pattern affect the way object-oriented software is designed.	3	2	3	1

Contd... 2

14. a)	Consider a context-sensitive help facility for a graphical user interface. The user can obtain help information on any part of the interface just by clicking on it. The help that's provided depends on the part of the interface that's selected and its context; for example, a button widget in a dialog box might have different help information than a similar button in the main window. If no specific help information exists for that part of the interface, then the help system should display a more general help message about the immediate context—the dialog box as a whole. Design the structure, use, collaborations and consequences of chain of responsibility pattern that is used to develop the above help facility.	5	3	4	3
b)	Discuss the implementation issues of composite pattern.	3	2	4	1
15. a)	Consider a simple information system for political elections with proportional representation. This offers a spreadsheet for entering data and several kinds of tables and charts for presenting the current results. Users can interact with the system via a graphical interface. All information displays must reflect changes to the voting data immediately. Design the system using Model-View-controller Design pattern	5	3	5	3
b)	Illustrate the structure of Presentation-Abstraction-Control Design Pattern.	3	2	5	1
16. a)	Illustrate how business engineering can be applied when installing reuse business?	4	2	1	1
b)	Discuss the implementation issues of builder design pattern.	4	3	2	1
17.	Answer any <i>two</i> of the following:				
a)	Sketch the structure of decorator pattern and List the use of decorator pattern for object oriented user interface toolkit.	4	3	3	1
b)	Demonstrate the intent, consequences and applicability of State pattern.	4	4	4	1
c)	Discuss the structure and consequences of pipes and filter pattern.	4	2	5	1

M : Marks; L: Bloom's Taxonomy Level; CO; Course Outcome; PO: Programme Outcome

i)	Blooms Taxonomy Level – 1	20%
ii)	Blooms Taxonomy Level – 2	31.25%
iii)	Blooms Taxonomy Level – 3 & 4	48.75%
