Hall Ticket Number:

Code No. : 14164 (B) N/O

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS), HYDERABAD
Accredited by NAAC with A++ Grade
B.E. IV-Semester Main & Backlog Examinations, July-2023
Introduction to Software Engineering (OE-II)

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.	Define Software Engineering	2	1	1	1
2.	What is waterfall model? Write its advantages.	2	2	1	1
3.	Is software being better than hardware? Justify your answer?	2	3	2	1, 2
4.	What is the purpose of process assessment? How the process does assessed?	2	2	2	1, 2
5.	What is sequence diagram? List the components of sequence diagram.	2	1	3	1
6.	Differentiate between link and association	2	2	3	1
7.	Compare object diagram and class diagram.	2	1	4	1
8.	What are artifacts? Give an example.	2	2	4	1
9.	List object oriented testing strategies.	2	1	5	1,2
10.	What are the test characteristics?	2	2	5	1, 2

Part-B (5 × 8 = 40 Marks)

11. a)	Discuss the importance of SCRUM tool in agile process.	4	1	1	1, 2
b)	Design the Agile process of your own department. (Web application/ IoT application/ Robotics application/ Construction)	4	3	1	1,2,3
12. a)	What are the various tasks in requirements engineering? Illustrate with an example the task of collecting requirements at various steps.	4	3	2	1
b)	What does feasibility analysis imply when it is discussed within the context of the inception function?	4	1	2	1 ,2
13. a)	Design a state chart diagram for ticket object in bus reservation system.	4	3	3	1,3
b)	What is a component diagram? Design the component diagram for withdrawal and flow of cash in ATM machine.	4	3	3	1,2

			M	L	CO	PO
14.	a)	Design a Class Diagram for a web-based library system. The library system needs to be able to conduct simple book keeping tasks, such as keeping track of the books and journals that users have borrowed. Staff members are allowed to borrow both books and journals, but students can only borrow books. The system should also allow users to browse books, reserve books (if there is a copy available) and enable librarians to keep the catalogue up to date. The system can use the current library Information System which contains a database of all books, journals, and users. You will need to identify the actors in the system, the functional requirements of the system (i.e. the use cases), and the relationships between actors and functional requirements.	4	3	4	1,2

	b)	Draw an Activity Diagram for the following scenario-
		     a. Diagram represents a banking process, which maintains customer accounts.
		     b. Customers can deposit the amount.
			4	2	4	1,2,3

15.	a)	Discuss debugging process and how debugging is different from testing. Explain different testing strategies for conventional software.	4	2	5	1

	b)	Implement the following for Vasavi college finance management system:
		     a. State transition diagram
		     b. Class diagram
		     c. Sequence diagram
			4	3	5	1,2

16.	a)	"The software is an integral part of every human's life". Substantiate the statement with suitable discussions on evolving role of software.	4	3	1	1, 3
	b)	Describe five desirable characteristics of a good software requirement specification document.	4	2	2	1
17.		Answer any *two* of the following:				
	a)	Draw the class diagram for airline reservation system.	4	3	3	1,2
	b)	Draw the use case diagram for ATM system.	4	3	4	1,2
	c)	Explain the levels of testing in detail.	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	35%
iii)	Blooms Taxonomy Level – 3 & 4	45%

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