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Code No. : 35002

VASAVI COLLEGE OF ENGINEERING (Autonomous), HYDERABAD
MCA (CBCS) V-Semester Main Examinations, December-2018

Object Oriented System Development

Time: 3 hours

Max. Marks: 70

Note: Answer ALL questions in Part-A and any FIVE from Part-B

Q. No	Stem of the Question	M	L	CO	PO
Part-A (10 × 2 = 20 Marks)					
1	A model is simplification of reality. Justify the statement.	2	3	1	1
2	What is realization in UML? Give an example.	2	2	1	1
3	Differentiate between the following concepts used in use case diagrams: <<includes>>, <<uses>>, and <<extends>>	2	3	2	1
4	What is the purpose of interaction diagrams?	2	2	2	1
5	List the five stereotypes that apply to components in UML	2	2	3	1
6	Differentiate the following terms: Pattern, Framework, and Architecture.	2	2	3	1
7	What is unified process? Is it agile?	2	2	4	1
8	Why do we need software architecture?	2	2	4	1
9	Who is an actor in use case diagram? Can a legacy system be an actor?	2	2	5	1
10	What are artifacts in software?	2	2	5	1
Part-B (5 × 10 = 50 Marks)					
11. a)	Describe the following relationships in UML: Association, Generalization, and Realization	5	2	1	1
b)	Discuss the three levels of visibility in UML classes.	5	2	1	1
12. a)	Suppose a person is waiting for a taxi and takes a ride once he gets a taxi. The process is completed when he reaches his destination. Draw figure depicting the start and end of process along with state transitions and states.	4	4	2	4
b)	A customer wants to draw money from his bank account. He enters his card into an ATM. The ATM machine prompts Enter PIN. The customer enters his PIN. The ATM (internally) retrieves the bank account number from the card. The ATM encrypts the PIN and the account number and sends it over to the bank. The bank verifies the encrypted Account and PIN number. If the PIN number is correct, the ATM displays Enter amount, draws money from the bank account and pays out the amount. Draw: i) Use Case Diagram ii) Sequence diagram	6	4	2	4
13. a)	Discuss the common uses of Artifact diagrams.	3	2	3	1
b)	Briefly Explain the five views used to model the system's architecture.	7	2	3	1

14. a)	List and explain the four P's in software development.	5	2	4	2
b)	Discuss the concept of use-case driven process.	5	2	4	1
15. a)	Illustrate the role of analysis in software life cycle	5	2	5	2
b)	How do you capture requirements as use cases?	5	3	5	1
16. a)	Consider the Library Management System. Take Use Case of 'Check Out Books'. Draw the UML based Class Diagram for it.	3	4	1	4
b)	To give an exam, an instructor first notifies the students of the exam date and the material to be covered. She then prepares the exam paper (with sample solutions). She gets enough copies (by office staff) of the question paper for the class, and hands them out to students on the designated time and location. The students write their answers to exam questions and hand in their papers to the instructor. The instructor then gives the exam papers to the Teaching Assistants, along with sample solutions and gets them to mark it. She then records all marks and returns the papers to the students. Draw a sequence diagram that represents this process. Make sure to show when each actor participating in the process. Also, show the operation that is carried out during each interaction, and what its arguments are.	7	4	2	4
17.	Answer any <i>two</i> of the following:				
a)	What are deployment diagrams in UML? How are they helpful in modeling distributed systems? Give an example.	5	3	3	4
b)	What is software architecture? How is it obtained and described?	5	2	4	1
c)	Differentiate between Analysis and Design Model.	5	3	5	1

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

S. No.	Criteria for questions	Percentage
1	Fundamental knowledge (Level-1 & 2)	61
2	Knowledge on application and analysis (Level-3 & 4)	39
3	*Critical thinking and ability to design (Level-5 & 6) (*wherever applicable)	---
