

derive sequence and collaboration diagram from the interaction diagram.

32. a. Consider an ATM system. Identify at least five different actors that interacts with the system. Can the system under consideration be represented as an actor? Justify your answer. 12 4 6 2

(OR)

- b. Illustrate the deployment model with neat sketch. Distinguish between deployment model and deployment diagram. 12 4 6 2

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Reg. No.

B.Tech. DEGREE EXAMINATION, MAY 2023
Fourth Semester

18CSC268J – SOFTWARE DESIGN WITH UNIFIED MODELING LANGUAGE
(For the candidates admitted during the academic year 2018-2019 to 2021-2022)

Note:

- (i) **Part - A** should be answered in OMR sheet within first 40 minutes and OMR sheet should be handed over to hall invigilator at the end of 40th minute.
(ii) **Part - B & Part - C** should be answered in answer booklet.

Time: 3 hours

Max. Marks: 100

PART – A (20 × 1 = 20 Marks)

Answer **ALL** Questions

- | | Marks | BL | CO | PO |
|---|-------|----|----|----|
| 1. UML _____ diagram gives an overview of a software system.
(A) Use case (B) Activity
(C) Class (D) Attributes | 1 | 2 | 2 | 1 |
| 2. Which among the following can be heuristic for use case diagram?
(A) The product can be made actor (B) Never name actors with noun phrases
(C) Name use cases with verb (D) Actor is a human phrases | 1 | 1 | 1 | 1 |
| 3. Constraints can be represented in UML by
(A) {TEXT} (B) [TEXT]
(C) (TEXT) (D) <TEXT> | 1 | 2 | 2 | 1 |
| 4. The collection of model elements is called
(A) Box (B) Dependency
(C) UML packages (D) Package members | 1 | 1 | 2 | 1 |
| 5. Which is not a valid design pattern?
(A) Structural (B) Creational
(C) Functional (D) Behavioral | 1 | 1 | 3 | 1 |
| 6. The physical element that exists at run time in UML
(A) Activity (B) Interface
(C) Node (D) Annotations | 1 | 2 | 4 | 2 |
| 7. _____ is a condition or situation during the life of an object which satisfies some condition.
(A) A transition (B) A state
(C) An event (D) An activity | 1 | 1 | 2 | 1 |
| 8. Which symbol is used to represent protected visibility in UML?
(A) # (B) +
(C) % (D) * | 1 | 1 | 3 | 1 |

9. A lifeline is specified as (A) A rectangle with a pentagon (C) A name compartment	(B) A rectangle with a dashed line (D) A rectangle with a solid line	1	2	3	1
10. UML interfaces are used to (A) API for all the classes (C) Specify required services for types of objects	(B) Program only in java (D) Executable logic to reuse across classes	1	2	3	1
11. The diagram used to show interaction between messages (A) Activity (C) Collaboration	(B) State chart (D) Object	1	3	4	2
12. Sequence diagram is _____ oriented. (A) Time (C) Object	(B) Class (D) Activity	1	1	3	1
13. Select the characteristics of UML from the following (A) It is not a general programming language (C) It is interrelated to OOPS concept	(B) It is similar to C++, python languages (D) It is not used to program the workflow	1	2	4	1
14. _____ gives the relationship between component parts and objects in UML diagrams. (A) Segregation (C) Dependency	(B) Aggregation (D) Composite	1	1	3	2
15. A component diagram is essentially a more specialized version of which of the following diagram? (A) Use case (C) Activity	(B) Sequence (D) Class	1	1	3	2
16. The dynamic aspects related to a system are shown with the help of _____ diagrams. (A) Sequence (C) Deployment	(B) Interaction (D) Component	1	2	5	1
17. Interaction diagram is a combined term for (A) Sequence + collaboration (C) Class + object	(B) Activity + state chart (D) Deployment + collaboration	1	2	5	2
18. UML diagram that specifies sequences/ steps of operations to be performed. (A) Activity diagram (C) E-R diagram	(B) Use case diagram (D) Component diagram	1	2	5	1
19. _____ diagram is used to distribute files, libraries and tables across topology of hardware. (A) Deployment (C) Sequence	(B) Use case (D) Collaboration	1	2	6	2

20. Which of the following is not an UML diagram? (A) Class (C) Interface	(B) Object (D) Interaction	1	1	6	1
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PART – B (5 × 4 = 20 Marks)
Answer ANY FIVE Questions

	Marks	BL	CO	PO
21. Draw the classical waterfall model and discuss the importance of each step.	4	2	2	2
22. Illustrate the significances of the object oriented concepts.	4	2	1	1
23. Describe the strengths and weakness of users during the requirements activity.	4	2	2	2
24. Differentiate between state and activity diagrams.	4	3	3	2
25. Write about the design issues of distributed systems.	4	3	4	2
26. Draw a class diagram representing the relationship between parents and children. Take into account that a person can have both a parent and a child. Annotate associations with roles and multiplicities.	4	3	5	3
27. Describe about the logical architectural view model with clear diagram.	4	2	6	2

PART – C (5 × 12 = 60 Marks)
Answer ALL Questions

	Marks	BL	CO	PO
28. a. Analyze the concept of object oriented system development and sketch the use case model for Library Management System.	12	3	2	2
(OR)				
b. With neat diagram, explain the working of spiral model. Bring out its pros and cons.	12	3	2	2
29. a. From you point of view, describe the process of requirement analysis. Describe various requirement gathering techniques.	12	2	3	2
(OR)				
b. Discuss about the need of design patterns. Explain also about the design issues of distributed systems.	12	2	2	1
30. a. Explain in detail about sequence diagram with a case study and analyze it.	12	3	3	3
(OR)				
b. Draw the use case diagram and component diagram for online shopping.	12	3	3	2
31. a. With a case study, demonstrate the components of collaboration diagram.	12	3	4	2
(OR)				
b. Explain about the interaction diagram with an example. Analyze how to	12	4	5	2