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KATHMANDU UNIVERSITY
End Semester Examination
February/March, 2019

Level : B. E./ B. Sc.

Year : IV

Course : COMP 421

Semester: I

Exam Roll No. :

Time: 30 mins.

F. M. : 10

Registration No.:

Date : 15 Feb - 2019

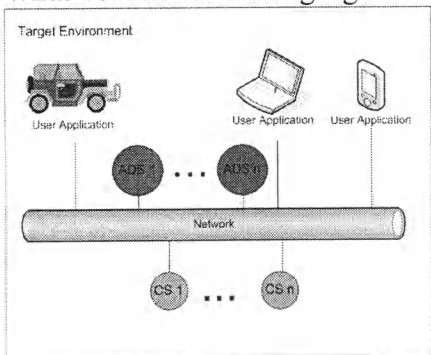
SECTION "A"

[20 Q.× 0.5= 10 marks]

1. What is Software Architecture?
 - a. The structures of the system, which comprise software elements, the externally visible properties of those elements, and the relationships among them
 - b. The structures of the sub-system, which comprise software elements, the externally visible properties of those elements, and the relationships among them
 - c. The structures of the system, which only comprise the externally visible properties of those elements, and the relationships among them
 - d. The structures of the system, which comprise software elements and the relationships among them
2. What was the main feature of pre-architectural style?
 - a. Involvements of multiple stakeholders
 - b. Balancing of functional and quality requirements
 - c. Iteration on both functional and quality requirements
 - d. Iteration mainly on functional requirements
3. Why is Software Architecture required while developing software?
 - a. To introduced non-functional properties
 - b. To introduce functional properties
 - c. To deliver software on time
 - d. To reduce software development costs
4. What does the model hold in MVC?
 - a. Output
 - b. Processing and Data
 - c. Input
 - d. Storage
5. Suppose you are working with a large, complex system and you want to manage complexity by decomposition and the problem is how do you structure an application to support such operational requirements as maintainability, scalability, extensibility, robustness, and security? Which architectural pattern do you follow?
 - a. Broker Architecture
 - b. Blackboard Architecture
 - c. Layer Architecture
 - d. OO Architecture
6. What does Service Oriented Architecture (SOA) offer?
 - a. Promise of enabling existing legacy system to expose their functionality as services
 - b. Promise of disabling existing legacy system to expose their functionality as services
 - c. Promise of enabling existing legacy system to expose their non-functionality as services
 - d. Promise of enabling existing legacy system to expose their functionality as systems

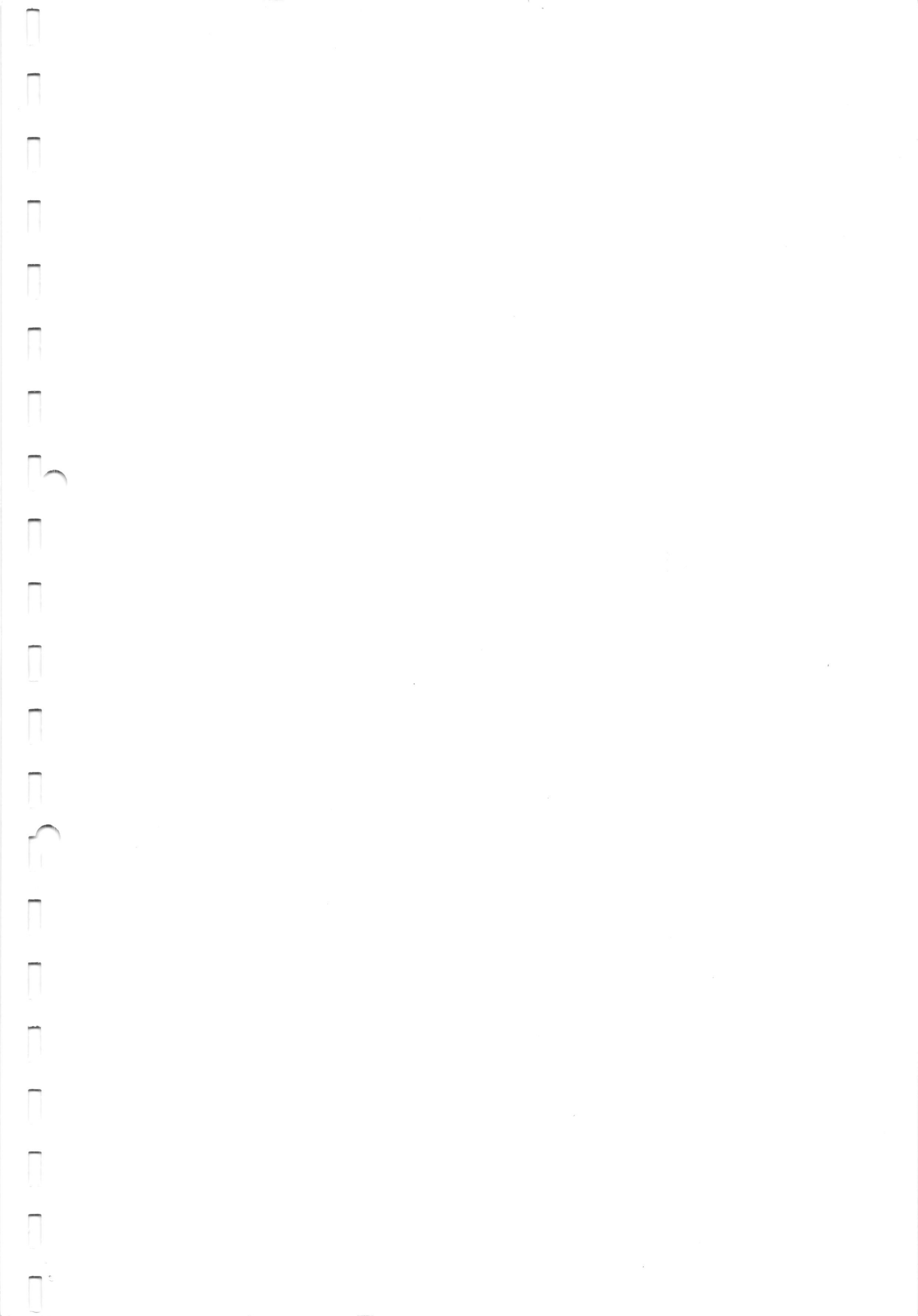
7. What does SMART stands for?
- Service-Oriented Migration and Reuse Technique
 - System-Oriented Migration and Reuse Technique
 - Service-Oriented Migration and Re-engineering Technique
 - Service-Oriented Mitigation and Reuse Technique

8. What does the following figure describe?



- The SOA includes common services (CS) that are not to be used by user applications and application domain services (ADS)
 - The SOA includes common services (CS) that are to be used by user applications and application domain services (ADS)
 - The SOA includes common services (CS) that are to be used by user applications and not application domain services (ADS)
 - The SOA does not include common services (CS) that are to be used by user applications and application domain services (ADS)
9. Camelot is based on _____ and uses remote procedure calls both locally and remotely to provide communication among applications and servers.
- Client Server Model
 - Broker Model
 - Remote Invocation Model
 - Tier Architectural Model
10. Why is OO more used in Software Architecture?
- Because it reduces the complexity
 - Because it hides its representations from its clients
 - Because it generates the common platform for both developer and clients
 - Because it enhances the degree of satisfaction
11. What is Knowledge Source (KS) in Black Board Architecture?
- Separate, independent parcels of application dependent knowledge
 - Separate, dependent parcels of application dependent knowledge
 - Separate, independent parcels of application independent knowledge
 - Separate, independent parcels of non-application dependent knowledge
12. How did the ACME architectural interchange language begin?
- With the goal of not providing a framework to move information between architecture description languages
 - With the goal of providing a system to move information between architecture description languages
 - With the goal of providing a framework to move information between architecture description languages
 - With the goal of providing a framework to move information between system description languages

13. What is CORBA?
- Common Object Oriented Reuse Broker Architecture
 - Common Object Oriented Request Broker Architecture
 - Center based Object Oriented Request Broker Architecture
 - Common Object Oriented Re-engineering Building Architecture
14. What is Software Architectural Tactics?
- It is a transformation of a software or system architecture that improves its response with respect to a particular measure
 - It is a transformation of software only but no system architecture that improves its response with respect to a particular measure
 - It is a transformation of a software or system architecture that relates its response with respect to a particular measure
 - It is a transformation of a software or system architecture that improves its response with respect to a particular case
15. Which of the following statement is true?
- Encrypting data does not help respond to a DDoS attack
 - Encrypting data helps respond to a DDoS attack
 - Decrypting data does not help respond to a DDoS attack
 - Encrypting and Decrypting both data is needed to help respond to a DDoS attack
16. What is a Stimulus?
- A pre- condition that needs to be considered when it arrives at a system
 - A post- condition that needs to be considered when it arrives at a system
 - A condition that needs to be considered when it arrives at a system
 - A condition that needs to be considered when it departs from a system
17. What is the attack when a system is compromised in providing service(eg. DDoS)?
- Application attack
 - System attack
 - Network attack
 - Data centric attack
18. What are the types of software reuse?
- Develop with Reuse and Develop for Reuse
 - Design with Case and Develop with Component
 - Design with Structures and Develop with Structure
 - Develop with sub-systems and Develop with sub-systems
19. What is the goal of Model Driven Architecture?
- To make it easier for software developers to combine business and application logic from underlying execution platform technology
 - To make it easier for software developers to separate business and application logic from underlying execution platform technology
 - To make it easier for software developers to separate business and technology from underlying execution platform technology
 - To make it easier for customers to separate business and application logic from underlying execution platform technology
20. What makes SOA different than CORBA and DCOM?
- Discoverable and coarse grained
 - Reliable and survival
 - Reusable and maintainable
 - Dependable and trustworthy



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SECTION "B"
[6 Q × 4 = 24 marks]

Attempt *ANY SIX* questions.

1. What is Software Architecture? Give your own definition and write down the importance of Software Architecture.
2. What are the challenges of Pipe and Filter Architecture? Explain with examples.
3. What is modifiability? Why do you think we need while developing software product?
4. Compare between safety and security with examples.
5. Why is layer architecture not suitable for UNIX system?
6. What are the challenges of migration? How do you address those challenges?
7. Compare between CORBA and Blackboard Architecture with examples.

SECTION "C"
[2 Q × 8 = 16 marks]

Attempt *ANY TWO* questions.

8. What is DDoS attack? Write down how the system gets DDoS attacked with figure and also write down the solution for such attacks.
9. What is MVC(Model / View / Controller)? Explain with figure.
10. What is survivability? How does survivability work in SOA?

