KUMARAGURU college of technology
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Register Number:…….

MCA DEGREE EXAMINATIONS: NOV/DEC 2024

(Regulation 2020)

Third Semester

MASTER OF COMPUTER APPLCATIONS

P20CAI3201**:** Service Oriented Architecture

COURSE OUTCOMES

CO1: Get the foundations and concepts of service-based computing.

CO2: Understand service - oriented analysis techniques.

CO3: Understanding the basic operational model of web services.

CO4: Gain the knowledge of key technologies in the service-oriented computing arena.

CO5: Apply and practice the learning through a real or illustrative project/case study.

Time: Three Hours **Maximum Marks: 100**

Answer all the Questions: -

PART A (10 x 1 = 10 Marks)

1. Consider the following steps of service development CO1 [K_4]

   1. Identify analysis classes
   2. Gather the business requirement.
   3. Code and test
   4. Map the analysis classes to design classes.

   Arrange them in correct sequence.

   a) 3-2-1-4 b) 2-1-4-3

   c) 1-2-4-3 d) 4-1-3-2

2. URI stands for_____. CO1 [K_2]

   a) Unique Response Identifier b) Uniform Record indicator

   c) Unity Reference Identification d) Uniform Resource Identifier

3. Which of the following describes a message-passing taxonomy for a component-based architecture that provides services to clients upon demand ? CO2 [K_2]

   a) SOA b) EBS

   c) GEC d) Engine

4. Match the List –I (SOA Layer) with List-II (Purpose) and select the correct answer using the codes given below. CO2 [K_4]

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List I	List II
A. Integration layer	1. Provides Integrated and consistent view of data
B. Information layer	2. Monitor services
C. Governance layer	3. Perform Transformation, routing, and protocol conversion
D. Quality of Service layer	4. Establish Policies and guidelines

a) A-1 B-2 C-3 D-4 b) A-2 B-3 C-4 D-1

c) A-3 B-1 C-4 D-2 d) A-4 B-3 C-2 D-1

5. Which of the following is commonly used to describe the service interface, how to bind information, and the nature of the component's service or endpoint? CO3 [K_2]

a) WSDL b) SCDL

c) XML d) XHTML

6. _____ is the degree of control of a service over its environment and the required resources. CO3 [K_2]

a) Abstraction b) Cohesion

c) Autonomy d) Coupling

7. Assertion (A):Big data technologies is essential to handle the massive amount of data. CO4 [K_4]
Reason (R): Traditional data base is not capable to handle the huge volumes and wide variety of unstructured and semi-structured data at high-speed.

a) Both A and R are individually true and R is the correct explanation of A b) Both A and R are individually true but R is not the correct explanation of A

c) A is true but R is false d) A is false but R is true

8. Which of the following is the correct formula for Development Cost Savings? CO4 [K_3]

a) [(NxR)/100] × (C x A) b) [(N+R)/100] × (C - A)

c) [(NxR)/100] + (C x A) d) [(N-R)/100] - (C x A)

9. Consider the following steps of service development CO5 [K_4]

1. Identification of (Proof of Concept) PoCs to validate the strategic architecture.
2. Tools to specify and manage changes to strategic architecture
3. Establishment of standards for technologies used for development and deployment.

Arrange them in correct sequence:

a) 1-3-2 b) 2-3-1

c) 1-2-3 d) 3-1-2

10. _____is the ability to automate processes for service delivery. CO5 [K_2]

a) Migration b) Security

c) Orchestration d) Metering

PART B (10 x 2 = 20 Marks)

11. Define SOA CO1 [K_2]
12. Write the Four Principles of SOA. CO1 [K_2]
13. Draw a diagram to represent the key steps of OOAD process. CO2 [K_3]
14. Compare ESB and API Gateway. CO2 [K_4]
15. Analyze need of loose coupling. CO3 [K_4]
16. Define Restful Web Services. CO3 [K_2]
17. Draw a diagram to represent the SOAP architecture. CO4 [K_3]
18. Analyze the impact of the cloud in SOA. CO4 [K_4]
19. What is the Impact of MSA in Social Media. CO5 [K_2]
20. List the different types of Mobile Applications. CO5 [K_2]

PART C (6 x 5 = 30 Marks)

21. Discuss the evaluation of SOA and MSA. CO1 [K_2]

22. Draw the architecture of Conceptual model of SOA. CO2 [K_3]

23. Write the formula to calculate Return on Investment (ROI) and explain the parameters. CO3 [K_3]

24. Draw the Architecture of APlary solution. CO4 [K_3]

25. Compare SAAS, PAAS and IAAS. CO5 [K_2]

26. Explain about the technologies for service integration. CO2 [K_2]

Answer any FOUR Questions
PART D (4 x 10 = 40 Marks)

27.	Compare Service Oriented Architecture and Micro Service Architecture.		CO1	[K_4]
28.	Apply the SOA reference architecture for online shopping cart application. Explain the drivers of SOA.		CO2	[K_3]
29.	a. Explain the technologies for service integration with suitable example.	5	CO3	[K_2]
	b. Write the process for arriving at the SOA strategic architecture.	5	CO3	[K_2]
30.	Explain the high-level view of the working of the MapReduce algorithm for a word count scenario with neat sketch.		CO4	[K_2]
31.	Describe the Micro Service Architecture with neat Sketch. List out various challenges in SOA implementation.		CO5	[K_4]

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