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**PRESIDENCY UNIVERSITY
BENGALURU**

SET – A

**SCHOOL OF ENGINEERING
END TERM EXAMINATION – MAY/JUNE 2024**

Semester : Semester VI - 2021

Date : June 10, 2024

Course Code : CSE3125

Time : 01.00pm to 04.00pm

Course Name : Service Oriented Architecture

Max Marks :100

Program : B.Tech. Computer Science and Engineering

Weightage : 50%

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- Note:** 1. Answer ALL 5 FULL Questions.
2. Each Full Question carries 20 Marks
3. Scientific and non-programmable calculator are permitted.
4. Do not write any information on the question paper other than Roll Number.
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- 1.a. Describe the basic structure of XML document. **[Knowledge]** (C01) (04 Marks)
- 1.b. Explain how to declare a namespace with an example. **[Comprehension]** (C01) (06 Marks)
- 1.c. Demonstrate the process of designing an appropriate XML namespace for the Library Management System **[Application]** (C01) (10 Marks)
- or**
- 2.a. Define the XML declaration components with suitable example. **[Knowledge]** (C01) (04 Marks)
- 2.b. Explain with an example that how would you apply XSLT to an XML document. **[Comprehension]** (C01) (06 Marks)
- 2.c. Prepare an external DTD file named Employee.dtd to define the structure for the employee. Xml document. Describe the instructions on how to link the external DTD to the XML document. **[Application]** (C01) (10 Marks)
- 3.a. Describe how does the practice of layering services address various challenges within Service-Oriented Architecture. **[Knowledge]** (C02) (04 Marks)
- 3.b. Distinguish standards, specification, extension in SOA **[Comprehension]** (C02) (06 Marks)
- 3.c. Imagine you're a software architect tasked with enhancing the efficiency of a large-scale e-commerce platform. The platform currently lacks a systematic approach for discovering and integrating new services. Defend how would you leverage the contemporary Service-Oriented Architecture (SOA) principles that promote discovery to revamp the platform's service discovery process, ensuring seamless integration of new functionalities while maintaining system reliability and scalability?" **[Application]** (C02) (10 Marks)

or

- 4.a. Identify the differences between client server architecture and service oriented architecture. **[Knowledge]** (C02) (04 Marks)
- 4.b. Describe how does the Service Orientation Principle interrelate with other foundational principles and practices in service oriented architecture. **[Comprehension]** (C02) (06 Marks)
- 4.c. Apply the concept of tangible SOA to demonstrate its benefits. Then, relate how these benefits can be employed in practical scenarios. **[Application]** (C02) (10 Marks)

- 5.a. Outline an example of a WSDL document for a simple web service named "calculator service" with on operation. **[Knowledge]** (C03) (04 Marks)
- 5.b. Discuss the challenges faced in real-world implementations of orchestration in enterprise systems. **[Comprehension]** (C03) (06 Marks)
- 5.c. Illustrate e the WS-Coordination registration process. What steps are involved for a web service to register with a coordination service, and how does this process ensure proper participation in a coordinated transaction? **[Application]** (C03) (10 Marks)

or

- 6.a. Describe the advantages of choreography **[Knowledge]** (C03) (04 Marks)
- 6.b. Explain the different protocols supported by WS-Transaction **[Comprehension]** (C03) (06 Marks)
- 6.c. Explain in detail the structure of a SOAP (Simple Object Access Protocol) message, with its key components **[Application]** (C03) (10 Marks)

- 7.a. Describe the benefits of entity centric business service oriented architecture. **[Knowledge]** (C04) (04 Marks)
- 7.b. Explain the components WS security framework. **[Comprehension]** (C04) (06 Marks)
- 7.c. Illustrate the bottom up strategy in SOA and demonstrate its implementation **[Application]** (C04) (10 Marks)

or

- 8.a. List the primary goals of performing service oriented design. **[Knowledge]** (C04) (04 Marks)
- 8.b. Describe the key features in J2EE that facilitate SOA deployment. **[Comprehension]** (C04) (06 Marks)
- 8.c. Outline the steps involved in composing SOA. **[Application]** (C04) (10 Marks)

- 9.a Describe the metadata of a service contract. **[Knowledge]** (C03) (04 Marks)
- 9.b Explain message exchange pattern supported by WSDL 1.1 **[Comprehension]** (C03) (06 Marks)
- 9.c Illustrate the components of UDDI (Universal Description, Discovery, and Integration) and apply their functionalities. **[Application]** (C03) (10 Marks)

or

- 10.a Define (i)Task centric business services (ii) Business centric business services. **[Knowledge]** (C04) (04 Marks)
- 10.b Explain the basic phases of SOA delivery lifecycle. **[Comprehension]** (C04) (06 Marks)
- 10.c Illustrate the basic elements and structure of a WS-BPEL process definition structure, and explain hoconfigurations are linked to web services to define their requirements and capabilities. **[Application]** (C04) (10 Marks)