SRM VALLIAMMAI ENGINEERING COLLEGE

SRM Nagar, Kattankulathur – 603 203

DEPARTMENT OF INFORMATION TECHNOLOGY

QUESTION BANK

VIII SEMESTER

1908803 SERVICE ORIENTED ARCHITECTURE

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Prepared by

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Department of Information Technology

Question Bank

SUBJECT : 1908803 SERVICE ORIENTED ARCHITECTURE

SEM / YEAR : VIII Sem / IV Year

UNIT I - INTRODUCTION TO XML			
XML document structure – Well-formed and valid documents – Namespaces – DTD – XML Schema – X-Files			
PART-A			
Q.No	**Question**	**BTL**	**Competence**
1	**Define XML.**	BTL1	Remembering
2	**Describe** what XML Document Prolog is.	BTL2	Understanding
3	**Identify** what constitutes a well-formed and valid XML document.	BTL1	Remembering
4	**List** the building blocks of XML document structure.	BTL1	Remembering
5	**Define** XML Declaration and **mention** its components.	BTL1	Remembering
6	**Define** Document Type Declaration and **mention** its components.	BTL1	Remembering
7	**Describe** elements and attributes in XML with an example.	BTL2	Understanding
8	**Illustrate** Entity Reference with an example.	BTL2	Understanding
9	**Provide** the rules for well-formed documents in XML.	BTL2	Understanding
10	**Write** a code snippet for a simple XML document.	BTL1	Remembering
11	**Demonstrate** the meaning of namespace in XML.	BTL2	Understanding
12	**Illustrate** DTD and **write** its syntax.	BTL2	Understanding
13	**Illustrate** various DTD element rules.	BTL2	Understanding
14	**Describe** what an XML Document Type Definition is and **provide** an example.	BTL2	Understanding
15	**Analyze** the XML predefined entities.	BTL2	Understanding
16	**Analyze** the drawbacks of DTD.	BTL2	Understanding
17	**Evaluate** XSD and **identify** some XPointer functions with their purposes.	BTL2	Understanding
18	**Assess** XPath and **mention** its syntax.	BTL2	Understanding
19	**List** the advantages of XML over SGML.	BTL1	Remembering
20	**Describe** how tags in XML are defined with an example.	BTL2	Understanding
21	**Provide** the rules for valid documents in XML.	BTL2	Understanding
22	**Illustrate** the root element and **write** its syntax.	BTL2	Understanding
23	**Analyze** the merits of DTD.	BTL2	Understanding

24	**Assess** X-File.	BTL2	Understanding

	PART-B			
1	Explain in detail about XML document Structure.	(13)	BTL5	Evaluating
2	Determine the rules of XML document structure and demonstrate the need of Namespace in XML.	(13)	BTL4	Analyzing
3	Analyze in detail about XML schema.	(13)	BTL4	Analyzing
4	Discriminate the XML schema elements supported by W3C standard.	(13)	BTL4	Analyzing
5	What is XML namespace? Identify the different types of XML namespaces with an example for each.	(13)	BTL3	Applying
6	Explain about the following: (i) XML Namespace with an example (ii) XML schema with an example.	(7) (6)	BTL5	Evaluating
7	Examine in detail about DTD.	(13)	BTL4	Analyzing
8	Briefly explain the characteristics of Web service framework and web service roles.	(13)	BTL3	Applying
9	How XML schema helps in structuring an XML document? Examine XML schema types with an example.	(13)	BTL4	Analyzing
10	Write about XFILES. How to identify the valid documents?	(13)	BTL4	Analyzing
11	List and explain the XML syntax rules in detail.	(13)	BTL3	Applying
12	(i) Differentiate between internal and external DTD. (ii) Classify the architecture of the X-Files application.	(7) (6)	BTL4	Analyzing
13	Deduce how to create a XML DTD for displaying student details.	(13)	BTL5	Evaluating
14	Develop a program for Library Management System using XML Schema.	(13)	BTL6	Creating
15	Examine in detail about XFILES.	(13)	BTL4	Analyzing
16	Briefly explain about well-formed and valid documents.	(13)	BTL3	Applying
17	Deduce how to create a XML DTD for displaying employee details.	(13)	BTL5	Evaluating
	PART C			
1	(i) Create a document type definition that defines the structure for email message; further create a XML document that reference to the created document type definition. (ii) With examples explain internal and external DTD.	(8) (7)	BTL6	Creating
2	Develop an XML schema for a "Banking System". State the functional requirements you are considering.	(15)	BTL5	Evaluating
3	Create a DTD for a catalog of four stroke motorbikes, where each motorbike has the following child elements – make, model, year, color, engine, chassis number and accessories. The engine element	(15)	BTL6	Creating

	has the child elements engine number, number of cylinders and type of fuel. The accessories element has the attributes like disc brake, auto-start and radio, each of which is required and has the possible values yes and no. Entities must be declared for the names of the popular motorbike makes.			
4	Briefly discuss about XML and DTD. Write a DTD for employee including employee name (first name and last name), employee Date of birth (month, date and year) and address (city and state)	(15)	BTL5	Evaluating
5	Briefly discuss about XML and DTD. Write a DTD for student including student name (first name and last name), student Date of birth (month, date and year) and address (city and state)	(15)	BTL5	Evaluating

UNIT II - BUILDING XML- BASED APPLICATIONS			
Parsing XML – using DOM, SAX – XML Transformation and XSL – XSL Formatting – Modeling Databases in XML			
PART-A			
Q.No	**Question**	**BTL**	**Competence**
1	What is DOM? List the DOM interfaces.	BTL1	Remembering
2	Describe the need of DOM.	BTL1	Remembering
3	Tell the steps in parsing XML document using DOM.	BTL1	Remembering
4	List DOM Levels.	BTL1	Remembering
5	What is meant by XSL formatting?	BTL1	Remembering
6	Outline the functions performed by an XML parser.	BTL1	Remembering
7	Give the disadvantages of DOM.	BTL2	Understanding
8	Distinguish between DOM and SAX.	BTL2	Understanding
9	Describe SAX.	BTL2	Understanding
10	Interpret what XERCES is.	BTL2	Understanding
11	List the disadvantages of SAX.	BTL2	Understanding
12	Demonstrate **what XSLT is.**	BTL2	Understanding
13	Define **an XML parser.**	BTL1	Remembering
14	Illustrate the disadvantages of JAXB.	BTL2	Understanding
15	Show **how XSLT works.**	BTL2	Understanding
16	Mention the advanced features of XSLT.	BTL1	Remembering
17	Define marshalling and unmarshalling.	BTL1	Remembering
18	Summarize the steps involved in steps involved in creating database in XML.	BTL2	Understanding
19	Describe **how to create a DAO.**	BTL2	Understanding

20	Write a simple stylesheet using XSL.	BTL1	Remembering
21	List the advantages of SAX	BTL2	Understanding
22	Define DOM.	BTL1	Remembering
23	Illustrate the advantages of JAXB.	BTL2	Understanding
24	Interpret what is XML Transformation.	BTL2	Understanding

PART-B				
1	Explain in detail about parsing XML using DOM.	(13)	BTL5	Evaluating
2	Derive the process of parsing XML document using SAX. Identify the various error handler methods.	(13)	BTL3	Applying
3	Analyze in detail about XSLT.	(13)	BTL4	Analyzing
4	Examine SAX parsing for invoicing a customer's order XML file.	(13)	BTL4	Analyzing
5	Organize the process of modeling databases in XML with an example.	(13)	BTL3	Applying
6	Examine various XSL tags with an example.	(13)	BTL4	Analyzing
7	What way a namespace in the XML document or the schema document affects validation? Model it with an example.	(13)	BTL3	Applying
8	Analyze in detail about how to create well-formed XML and XSL transformations.	(13)	BTL4	Analyzing
9	Examine DOM parsing for a "purchase order" xml file that contains bill to and send to warehouse details provided as XML schema with DocBuilder Output.	(13)	BTL4	Analyzing
10	Outline the XML document object model with an example and explain the working principle of a SAX parser.	(13)	BTL3	Applying
11	(i)Explain in detail about DOM Parser (ii)Explain the XML representation of a relational database with example of a single database with two table.	(7) (6)	BTL5	Evaluating
12	(i)Demonstrate in detail about various XSL tags with an example. (ii)Point out the DOM XML Parser with Example how to get the node by "name", and display the value.	(7) (6)	BTL4	Analyzing
13	Outline the use of XSLT for document publishing. Illustrate the process for converting XML document to HTML document.	(13)	BTL5	Evaluating
14	Create a code to populate an Employee objects to DOM -parser using an XML content.	(13)	BTL6	Creating
15	Inspect how XSL formatting is done with an example.	(13)	BTL4	Analyzing
16	Derive the process of SAX with an example.	(13)	BTL3	Applying
17	Outline a code to populate a Student objects to DOM -parser using an XML content.	(13)	BTL5	Evaluating

	PART C			
1	Evaluate the steps involved in processing XML database using JAXB with a simple case study.	(15)	BTL5	Evaluating
2	(i)Evaluate the steps in XML parsers. (ii)With example show how XSLT can transform an XML document into HTML.	(8) (7)	BTL5	Evaluating
3	Give an XSLT document and a source XML document and explain the XSLT transformation process that produces a single result XML document.	(15)	BTL6	Creating
4	Evaluate XML document for checking well formedness of XML document using DOM API.	(15)	BTL5	Evaluating
5	Give a note on various modeling databases in XML with an example.	(15)	BTL6	Creating

UNIT III - SERVICE ORIENTED ARCHITECTURE			
Characteristics of SOA, Comparing SOA with Client-Server and Distributed architectures – Benefits of SOA - Principles of Service orientation – Service layers			
PART-A			
Q.No	**Question**	**BTL**	**Competence**
1	Define SOA.	BTL1	Remembering
2	State service component.	BTL2	Understanding
3	List any 4 principles of service orientation.	BTL1	Remembering
4	What is a distributed system?	BTL1	Remembering
5	List any 4 characteristics of SOAs.	BTL1	Remembering
6	Define Contemporary SOA.	BTL1	Remembering
7	How loose coupling concept achieved in SOA?	BTL1	Remembering
8	How do components in an SOA inter- relate? Express it diagrammatically?	BTL1	Remembering
9	Compare SOA from distributed internet architecture.	BTL2	Understanding
10	List any four characteristics of Contemporary SOA.	BTL1	Remembering
11	Illustrate the components of automation logic.	BTL2	Understanding
12	Infer enterprise architecture.	BTL2	Understanding
13	Illustrate Wrapper Services.	BTL2	Understanding
14	What are fundamental parts of SOA framework?	BTL1	Remembering
15	Show the primary characteristics of the two tier client server architecture.	BTL2	Understanding

16	Summarize the benefits of SOA.	BTL2	Understanding
17	Extend the common pitfalls of adopting SOA.	BTL2	Understanding
18	List the issues that are raised in the client-server and the distributed Internet architecture.	BTL1	Remembering
19	Outline the layers of abstraction identified for SOA.	BTL2	Understanding
20	Summarize some of the characteristics of Application Service layer.	BTL2	Understanding
21	State the challenges faced in SOA adoption.	BTL2	Understanding
22	Illustrate Service layers.	BTL2	Understanding
23	What are fundamental parts of distributed architecture?	BTL1	Remembering
24	Relate the cloud computing integration into SOA.	BTL2	Understanding

PART-B				
1	Compare SOA to Client-Server Architecture and Distributed internet architecture.	(13)	BTL5	Evaluating
2	Give an overview of SOA and explain the characteristics of SOA.	(13)	BTL5	Evaluating
3	Analyze the principles of service orientation standardized in detail.	(13)	BTL5	Evaluating
4	Explain Distributed Internet Architecture and compare with SOA.	(13)	BTL5	Evaluating
5	Analyze the characteristics of Contemporary SOA.	(13)	BTL4	Analyzing
6	Examine about web services as component wrappers.	(13)	BTL4	Analyzing
7	What is service orientation? Inspect the common principles of service orientation.	(13)	BTL4	Analyzing
8	i. Organize out the primary characteristics of service oriented architecture ii. Identify the common tangible benefits of SOA.	(6) (7)	BTL3	Applying
9	Compare SOA with distributed client-server architecture. Identify the anatomy of service oriented architecture.	(13)	BTL3	Applying
10	Apply the concepts of primitive SOA.	(13)	BTL3	Applying
11	How Orchestration service layer works to link process logic to service interaction within the workflow logic? Explain.	(13)	BTL4	Analyzing
12	Explain in detail the Atomic Transactions.	(13)	BTL4	Analyzing
13	Discover the functionalities of Application Service Layer in terms of utility service and wrapper service.	(13)	BTL4	Analyzing
14	Briefly analyze about: i) Service layer abstraction. ii) Application service layer.	 (7) (6)	BTL4	Analyzing
15	Examine about: i) Business service layer. ii) Agnostic services.	 (7) (6)	BTL4	Analyzing

16	Model the principles of service orientation.	(13)	BTL3	Applying
17	Explain about how to transform enterprise business in SOA.	(13)	BTL5	Evaluating
	PART C			
1	Explain the basic building blocks of Service Oriented Architecture.	(15)	BTL5	Evaluating
2	Explain the components of service oriented architecture? How the components in service oriented architecture inter-relate? Give example.	(15)	BTL5	Evaluating
3	Give a note on Coordination in detail Explain in detail about benefits of SOA.	(15)	BTL6	Creating
4	Give a note on three primary Service layers for service oriented architecture.	(15)	BTL6	Creating
5	Give a note on SOA with client-server and distributed architecture.	(15)	BTL6	Creating

UNIT IV - WEB SERVICES			
Service descriptions – WSDL – Messaging with SOAP – Service discovery – UDDI – Message Exchange Patterns – Orchestration – Choreography –WS Transactions			
PART-A			
Q.No	**Question**	**BTL**	**Competence**
1	Define service.	BTL1	Remembering
2	Show the anatomy of a SOAP message.	BTL1	Remembering
3	What is the responsibility of the service?	BTL1	Remembering
4	List any four pitfalls of SOA.	BTL1	Remembering
5	What do you mean by UDDI?	BTL1	Remembering
6	Show the difference between abstract and concrete service description.	BTL1	Remembering
7	What are the two types of WSDL elements?	BTL2	Understanding
8	State the characteristics of Orchestration service layer.	BTL2	Understanding
9	Identify some types of Message Exchange Patterns.	BTL2	Understanding
10	What are the standards that Web service depends on?	BTL2	Understanding
11	What is the usage of Envelope element in SOAP message structures?	BTL1	Remembering
12	Define a web service.	BTL1	Remembering
13	Mention the three types of Choreography.	BTL2	Understanding
14	Compare orchestration and choreography.	BTL2	Understanding
15	What are the potential types of logic suitable for abstract orchestration layer?	BTL1	Remembering
16	What is message processing logic?	BTL1	Remembering
17	What are dynamic proxy and dynamic invocation interface?	BTL1	Remembering

18	Define choreography.	BTL1	Remembering
19	Define SOAP message.	BTL1	Remembering
20	Summarize the types of intermediaries.	BTL2	Understanding
21	What are the advantages of SOAP web services?	BTL2	Understanding
22	Show interoperability in web services?.	BTL2	Understanding
23	What is WSDL?	BTL1	Remembering
24	Recall the tools that are used to test web services.	BTL1	Remembering

	PART-B			
1	Briefly examine Messaging with SOAP and service discovery.	(13)	BTL4	Analyzing
2	What is SOAP? Analyze the SOAP messaging framework with diagram?	(13)	BTL4	Analyzing
3	Explain about service layer abstraction and orchestration service layer.	(13)	BTL5	Evaluating
4	What is WSDL? Explain the WSDL document structure with an example.	(13)	BTL5	Evaluating
5	i. Examine the structure of a SOAP message. ii. Inspect the concept of UDDI.	(6) (7)	BTL4	Analyzing
6	Explain Orchestration in detail.	(13)	BTL5	Evaluating
7	Give a detailed note on WS-Atomic transactions.	(13)	BTL5	Evaluating
8	Explain briefly about technical requirements for Orchestration and Choreography.	(13)	BTL3	Applying
9	How the challenge of coordinating messages is accomplished by Message exchange patterns?	(13)	BTL3	Applying
10	Show the WSDL document consisting of abstract and concrete parts that collectively describe a service endpoint.	(13)	BTL3	Applying
11	Explain the basics of web services description language in detail.	(13)	BTL4	Analyzing
12	i. Explain UDDI in detail ii. Write an example for addition of two numbers using WSDL FILE.	(7) (6)	BTL4	Analyzing
13	Explain briefly different types of security attacks and Threats and also give the web service security road map.	(13)	BTL5	Evaluating
14	i. Design a WS-Transaction with an example of how to apply the framework defined by WS-Coordination. ii. Explain Atomic transactions and business activity model in detail.	(7) (6)	BTL6	Creating
15	Explain about message exchange pattern.	(13)	BTL5	Evaluating
16	Analyze in detail about service discovery.	(13)	BTL4	Analyzing
17	Explain Choreography in detail.	(13)	BTL5	Evaluating

	PART C			
1	Explain in detail about Atomic Transaction Process with suitable diagrams.	(15)	BTL5	Evaluating
2	Describe the protocols of Atomic Transaction in detail.	(15)	BTL6	Creating
3	Describe the elements of Web services platform in detail.	(15)	BTL6	Creating
4	Explain in detail about Business service layer and Orchestration service layer in detail.	(15)	BTL5	Evaluating
5	Explain in detail about WSDL with example.	(15)	BTL5	Evaluating

UNIT V - BUILDING SOA-BASED APPLICATIONS			
Service Oriented Analysis and Design – Service Modeling – Design standards and guidelines -- Composition – WS-BPEL – WS-Coordination – WS-Policy – WS-Security – SOA support in J2EE.			
PART-A			
Q.No	**Question**	**BTL**	**Competence**
1	What is service modeling process?	BTL1	Remembering
2	List out some guidelines of service modeling.	BTL1	Remembering
3	What is Web service composition?	BTL1	Remembering
4	Write the syntax for getVariableData function in WS BPEL.	BTL1	Remembering
5	What are the standards that Web service depends on?	BTL1	Remembering
6	Mention the goals of performing a service oriented analysis.	BTL2	Understanding
7	Give the step-by-step process in the service oriented analysis.	BTL2	Understanding
8	Define loose coupling.	BTL2	Understanding
9	Show the structure of common WS-BPEL process definition.	BTL2	Understanding
10	Give the various elements in WS-BPEL.	BTL2	Understanding
11	Show the set of basic tasks for creating web service composition.	BTL1	Remembering
12	Point out the set of structured tasks for web service composition	BTL1	Remembering
13	Classify the difference between RMI and JAX-RPC.	BTL2	Understanding
14	Write any four attributes of ‘invoke’ element of BPEL.	BTL1	Remembering
15	Define WS-Policy.	BTL1	Remembering
16	Compare getVariableproperty and getVariableData functions.	BTL2	Understanding
17	What is J2EE?	BTL1	Remembering
18	What do you mean by WS-Security?	BTL1	Remembering

19	Find WS-Policy element with attributes.	BTL1	Remembering
20	Write about JAX-WS.	BTL1	Remembering
21	Define WS-Security.	BTL2	Understanding
22	Demonstrate In SOA do we need to build systems from scratch?	BTL2	Understanding
23	Relate SOA suite 10g and 11g.	BTL1	Remembering
24	Illustrate how do we integrate legacy applications with SOA	BTL2	Understanding

PART-B				
1	Identify the features of Web Service Business Process Execution Language and outline the structure of the same with an example.	(13)	BTL3	Applying
2	Analyze the Web Services Security Requirements in detail.	(13)	BTL4	Analyzing
3	Examine the overview of SOA and the role of web services with .NET and J2EE Interoperability.	(13)	BTL4	Analyzing
4	Organize the operations in entity centric.	(13)	BTL3	Applying
5	Explain the various standards in the development of web services.	(13)	BTL5	Evaluating
6	Explain the steps involved in service modeling process.	(13)	BTL5	Evaluating
7	Analyze the following: (i) Give the skeleton of the Coordination Context construct in WS-Coordination. (ii) Outline the primitive SOA support in J2EE.	(6) (7)	BTL4	Analyzing
8	Write down the syntax of the following with example: (i) The process element (ii) The partnerLinks and partnerLink (iii)The variable (iv)getVariableProperty and getVariableData (v) sequence and invoke	(2) (3) (3) (3) (2)	BTL3	Applying
9	Write short notes on i. WS-coordination overview. ii. Benefits of JAX_RPC	(7) (6)	BTL3	Applying
10	List out the security treats in detail.	(13)	BTL3	Applying
11	Explain briefly about WS-choreography model description.	(13)	BTL4	Analyzing
12	Demonstrate WS-Security framework in terms of the ‘security’ element with an example.	(13)	BTL4	Analyzing
13	Classify service model logic as service operation candidates and service candidates with basic building block activities.	(13)	BTL5	Evaluating
14	Discover the steps in building an application using service oriented architecture.	(13)	BTL4	Analyzing
15	Explain in detail about design standards and guidelines.	(13)	BTL2	Understanding

16	List out the service modeling in detail.	(13)	BTL3	Applying
17	Classify the various building model for SOA based application.	(13)	BTL5	Evaluating
	PART C			
1	Identify the various steps involved in service oriented modeling and elaborate them in detail.	(15)	BTL5	Evaluating
2	i. Summarize the design guidelines for web services. ii. Specify the WS-Coordination registration and completion process with neat sketches.	(5) (10)	BTL5	Evaluating
3	Discuss on how SOA is related to the layers of the J2EE platform.	(15)	BTL6	Creating
4	Identify the type of WS-Security with their salient features in detail.	(15)	BTL5	Evaluating
5	Discuss in detail about building applications with Oracle SOA suite.	(15)	BTL6	Creating

Prepared by :

Verified by :