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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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	What is XML Document Prolog?	BTL1	Remembering
3	Identify what is well formed and valid 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	What is meant by element and attributes in xml? Describe with example.	BTL2	Understanding
8	Describe Entity reference with an example.	BTL2	Understanding
9	Give the rules for well formed documents in XML.	BTL2	Understanding
10	Give a code snippet for simple XML document.	BTL3	Applying
11	Demonstrate the meaning of namespace in XML.	BTL2	Understanding
12	Illustrate DTD and write the syntax for it.	BTL3	Applying
13	Illustrate the various DTD element rules.	BTL3	Applying
14	What is XML document type definition? Give example.	BTL4	Analyzing
15	Analyze the XML predefined entities.	BTL4	Analyzing

16	Analyze the DTD drawbacks.	BTL4	Analyzing
17	Evaluate XSD. Identify some XPointer functions with their purposes.	BTL5	Evaluating
18	Assess XPATH and mention its syntax	BTL5	Evaluating
19	List out the advantages of XML over SGML.	BTL6	Creating
20	How tags in XML are defined? Give example.	BTL6	Creating
21	Give the rules for valid documents in XML.	BTL2	Understanding
22	Illustrate Root element and write the syntax for it.	BTL3	Applying
23	Analyze the DTD merits.	BTL4	Analyzing
24	Assess X-File	BTL5	Evaluating

PART-B			
1	i. Describe in detail about XML document Structure. (13)	BTL1	Remembering
2	ii. Determine the rules of XML document structure. (6) iii. Demonstrate the need of Namespace in XML. (7)	BTL 4	Analyzing
3	Describe in detail about XML schema. (13)	BTL1	Remembering
4	Discriminate the XML schema elements supported by W3C standard. (13)	BTL1	Remembering
5	What is XML namespace? Elaborate the different types of XML namespaces with an example for each. (13)	BTL2	Understanding
6	i. Explain XML Namespace with an example. (6) ii. Outline an XML schema with an example. (7)	BTL2	Understanding
7	Examine in detail about DTD. (13)	BTL2	Understanding
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? Explain XML schema types with an example. (13)	BTL1	Remembering
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. (7) (ii) Classify the architecture of the X-Files application .(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)	BTL2	Understanding
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. (8) (ii)With examples explain internal and external DTD. (7)	**BTL 6**	**Creating**
2	Develop an XML schema for a "Banking System". State the functional requirements you are considering. (15)	**BTL 5**	**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 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. (15)	**BTL6**	**Creating**
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)	**BTL 5**	**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)	**BTL 5**	**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 is XERCES	BTL5	Evaluating
11	List the disadvantages of SAX	BTL2	Understanding
12	Show what is XSLT What is XSL?	BTL3	Applying
13	Define a XML parser.	BTL3	Applying
14	Illustrate the disadvantages of JAXB.	BTL4	Analyzing
15	Explain how XSLT works?	BTL4	Analyzing
16	Mention the advanced features of XSLT.	BTL4	Analyzing
17	What is XSL:if ? Support with an example for it.	BTL3	Applying
18	Summarize the steps involved in steps involved in creating database in XML	BTL5	Evaluating
19	How do you create a DAO?	BTL6	Creating
20	Write a simple stylesheet using XSL.	BTL6	Creating
21	List the advantages of SAX	BTL2	Understanding
22	Define DOM.	BTL3	Applying
23	Illustrate the advantages of JAXB	BTL4	Analyzing
24	Interpret what is XML Transformation	BTL5	Evaluating

PART-B			
1	Describe in detail about parsing XML using DOM. (13)	BTL1	Remembering
2	Derive the process of parsing XML document using SAX. Identify the various error handler methods. (13)	BTL3	Applying
3	Describe in detail about XSLT. (13)	BTL1	Remembering
4	Examine SAX parsing for invoicing a customer's order XML file. (13)	BTL4	Analyzing
5	Outline the process of modeling databases in XML with an example. (13)	BTL2	Understanding

6	Summarize various XSL tags with an example. (13)	BTL2	Understanding
7	What way a namespace in the XML document or the schema document affects validation? Illustrate it with an example. (13)	BTL2	Understanding
8	Describe in detail about how to create well-formed XML and XSL transformations. (13)	BTL1	Remembering
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	i. Outline the XML document object model with an example ii. Outline the working of a SAX parser.	BTL3	Applying
11	(i)Explain in detail about DOM Parser (7) (ii)Explain the XML representation of a relational database with example of a single database with two table.(6)	BTL1	Remembering
12	(i)Demonstrate in detail about various XSL tags with an example. (7) (ii)Point out the DOM XML Parser with Example how to get the node by "name", and display the value.(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	Deduce how XSL formatting is done with an example. (13)	BTL2	Understanding
16	Derive the process of SAX with an example. (13)	BTL3	Applying
17	Outline a code to populate an 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)	**BTL 5**	**Evaluating**
2	(i)Evaluate the steps in XML parsers (8) (ii)With example show how XSLT can transform an XML document into HTML. (7)	**BTL 5**	**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)	**BTL 5**	**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.	BTL2	Understanding
8	How do components in an SOA inter- relate? Express it diagrammatically	BTL2	Understanding
9	Distinguish SOA from distributed internet architecture	BTL2	Understanding
10	List any four characteristics of Contemporary SOA.	BTL1	Remembering
11	Illustrate the components of automation logic	BTL3	Applying
12	Define enterprise architecture.	BTL3	Applying
13	Illustrate Wrapper Services	BTL3	Applying
14	What are fundamental parts of SOA framework?	BTL4	Analyzing
15	Explain the primary characteristics of the two tier client server architecture?	BTL4	Analyzing
16	Analyze the benefits of SOA	BTL4	Analyzing
17	Explain the common pitfalls of adopting SOA	BTL5	Evaluating
18	Evaluate the issues that are raised in the client-server and the distributed Internet architecture?	BTL5	Evaluating
19	Design the layers of abstraction identified for SOA.	BTL6	Creating
20	Compose some of the characteristics of Application Service layer.	BTL6	Creating
21	State the challenges faced in SOA adoption	BTL2	Understanding
22	Illustrate Service layers.	BTL3	Applying
23	What are fundamental parts of distributed architecture?	BTL4	Analyzing
24	Explain the cloud computing integration into SOA	BTL5	Evaluating

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)	BTL1	Remembering
3	Mention the principles of service orientation standardized in detail. (13)	BTL1	Remembering
4	Explain Distributed Internet Architecture and compare with SOA. (13)	BTL1	Remembering
5	List the characteristics of Contemporary SOA. (13)	BTL1	Remembering
6	Discuss briefly about web services as component wrappers. (13)	BTL6	Creating
7	What is service orientation? Outline the common principles of service orientation. (13)	BTL2	Understanding
8	i. List out the primary characteristics of service oriented architecture. (6) ii. Summarize the common tangible benefits of SOA. (7)	BTL3	Applying
9	Compare SOA with distributed client-server architecture. Discuss the anatomy of service oriented architecture. (13)	BTL3	Applying
10	Explain briefly about 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	Illustrate the functionalities of Application Service Layer in terms of utility service and wrapper service. (13)	BTL2	Understanding
14	Briefly explain about: i) Service layer abstraction. (7) ii) Application service layer. (6)	BTL2	Understanding
15	Briefly explain about: i) Business service layer. (7) ii) Agnostic services. (6)	BTL2	Understanding
16	Explain briefly about 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)	**BTL 5**	**Evaluating**
2	Explain the components of service oriented architecture? How the components in service oriented architecture inter-relate? Give example. (15)	**BTL 5**	**Evaluating**
3	Give a note on Coordination in detail Explain in detail about benefits of SOA. (15)	**BTL 6**	**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)	**BTL 6**	**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	Sketch the anatomy of a SOAP message.	BTL6	Creating
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?	BTL3	Applying
12	Define a web service.	BTL3	Applying
13	Mention the three types of Choreography.	BTL3	Applying
14	Distinguish between orchestration and choreography.	BTL4	Analyzing
15	What are the potential types of logic suitable for abstract orchestration layer?	BTL4	Analyzing
16	What is message processing logic?	BTL4	Analyzing
17	What are dynamic proxy and dynamic invocation interface?	BTL5	Evaluating
18	Define choreography.	BTL5	Evaluating
19	Define SOAP message.	BTL1	Remembering

20	Give the types of intermediaries.	BTL6	Creating
21	What are the advantages of SOAP web services	BTL2	Understanding
22	What is interoperability in web services	BTL3	Applying
23	What is WSDL?	BTL4	Analyzing
24	What tools are used to test web services	BTL5	Evaluating

PART-B			
1	Briefly explain Messaging with SOAP and service discovery. (13)	BTL1	Remembering
2	What is SOAP? Explain the SOAP messaging framework with a diagram. (13)	BTL1	Remembering
3	Explain about service layer abstraction and orchestration service layer. (13)	BTL1	Remembering
4	What is WSDL? Explain the WSDL document structure with an example. (13)	BTL1	Remembering
5	i. Describe the structure of a SOAP message. (6) ii. Outline the concept of UDDI. (7)	BTL2	Understanding
6	Explain Orchestration in detail. (13)	BTL2	Understanding
7	Give a detailed note on WS-Atomic transactions. (13)	BTL2	Understanding
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 (7) ii. Write an example for addition of two numbers using WSDL FILE. (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 is an example of how to apply the framework defined by WS-Coordination. (7) ii. Explain Atomic transactions and business activity model in detail (6)	BTL6	Creating
15	Give a detailed note on message exchange pattern. (13)	BTL2	Understanding
16	Explain briefly about service discovery. (13)	BTL3	Applying
17	Explain Choreography in detail. (13)	BTL5	Evaluating

PART C			
1	Explain in detail about Atomic Transaction Process with suitable diagrams.(15)	**BTL 5**	**Evaluating**
2	Describe the protocols of Atomic Transaction in detail. (15)	**BTL 6**	**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)	**BTL 5**	**Evaluating**
5	Explain in detail about WSDL with example.(15)		

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.	BTL5	Evaluating
3	What is Web service composition?	BTL5	Evaluating
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.	BTL4	Analyzing
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	Demonstrate the set of basic tasks for creating web service composition.	BTL3	Applying
12	Point out the set of structured tasks for web service composition	BTL3	Applying

13	Classify the difference between RMI and JAX-RPC.	BTL3	Applying
14	Write any four attributes of 'invoke' element of BPEL.	BTL4	Analyzing
15	Define WS-Policy.	BTL1	Remembering
16	Differentiate getVariableproperty and getVariableData functions	BTL4	Analyzing
17	What is J2EE?	BTL1	Remembering
18	What do you mean by WS-Security?	BTL1	Remembering
19	Create WS-Policy element with attributes.	BTL6	Creating
20	Write about JAX-WS.	BTL6	Creating
21	Define WS-Security.	BTL2	Understanding
22	Demonstrate In SOA do we need to build systems from scratch?	BTL3	Applying
23	Differentiate between SOA suite 10g and 11g	BTL4	Analyzing
24	Illustrate how do we integrate legacy applications with SOA	BTL5	Evaluating

	PART-B		
1	Highlight the features of Web Service Business Process Execution Language and outline the structure of the same with an example. (13)	BTL1	Remembering
2	Describe the Web Services Security Requirements in detail. (13)	BTL1	Remembering
3	Explain the overview of SOA and the role of web services with .NET and J2EE Interoperability. (13)	BTL1	Remembering
4	Explain about the operations in entity centric. (13)	BTL1	Remembering
5	Explain the various standards in the development of web services. (13)	BTL2	Understanding
6	Explain the steps involved in service modeling process. (13)	BTL2	Understanding
7	i. Give the skeleton of the Coordination Context construct in WS-Coordination. (6) ii. Outline the primitive SOA support in J2EE. (7)	BTL2	Understanding
8	Write down the syntax of the following with example The process element (2) The partnerLinks and partnerLink (3) The variable (3) getVariableProperty and getVariableData (3) sequence and invoke (2)	BTL3	Applying

9	Write short notes on i. WS-coordination overview. (7) ii. Benefits of JAX_RPC (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	Outline the steps in building an application using service oriented architecture. (13)	BTL6	Creating
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).	**BTL 5**	**Evaluating**
2	i. Summarize the design guidelines for web services. (5) ii. Specify the WS-Coordination registration and completion process with neat sketches. (10)	**BTL 5**	**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).	**BTL 5**	**Evaluating**
5	Discuss in detail about building applications with Oracle SOA suite. (15)	**BTL6**	**Creating**