

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

## GUJARAT TECHNOLOGICAL UNIVERSITY

M.E Sem-I Regular Examination January / February 2011

Subject code: 710101N

Subject Name: Service Oriented Architecture

Date: 31 /01 /2011

Time: 02.30 pm – 05.00 pm

Total Marks: 70

### Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Use Standard conventions from book.

- Q.1 Attempt on ANY TWO 14**
- (a) Develop a XML document for Payment Fee Receipt for ME Exam fee to Gujarat Technological University and make use XSL process instruction in it to link XSL file and also use XML elements and Attributes
- (b) Create an XML Schema for a Document based on input below for an online mobile shop
- a) A “Mobile” is a base abstract type which is having attributes as “Manufacturer” (eg. Nokia, Samsung) and “ModelNumber”
  - b) Another type “GSM Mobile” has been derived from abstract “Mobile” type
  - c) In addition “GSM Mobile” will also have “ConnectivityType”
- Using above schema represent a document for a GSM Mobile with following attribute values in XML  
Manufacturer : Nokia; Model Number : N73; Connectivity Type: Blue Tooth, Infrared, USB
- (c) Develop DTD elements for generating the Students Mark sheet XML documents and show the sample use of it where Mark sheet contains University name at top and College name as attributes and Subject and Internal marks ( mid-sem), practical and theory marks for 1 or more subjects with credit and at the end it gives grand total with CPI
- Q.2 (a) Draw business process model for ordering a cellular phone at an online mobile store, where payments are accepted by credit cards and shipping is being managed by an agency based on request by store. 07**
- (b) What are challenges for SOA? List the architectural requirement of each challenge 07
- OR**
- (b) Develop ACME Insurance Use case Model and show the Basic Work flow for Scenario for Requesting Quote. 07
- Q.3 (a) Write a brief note on ‘4+1 Software architectural views’ in Context of SOA & SOA Design and show the relationship with Business Architecture 07**
- (b) What are Important Aspects of enterprise SOA reference architecture? And also show the major components of SOA reference architecture 07
- OR**
- Q.3 (a) Develop a Service Hierarchies for a ‘Gujarat Technological University’ which is having in general Business process related to provide new affiliation of Self finance college, affiliation to Government college as approved by Department of education and Directorate of Technical education. 07**

- (b) Define or Explain following **07**  
(i) Service dimensions (ii) design- time governance as architectural requirements.  
(iii) change-time governance as architectural requirements (iv) Service Context  
(v) Service Inventory (vi) Responsibility of Service Implementation Layer (vii)  
Enterprise Architecture
- Q.4 (a)** Discuss and Differentiate between two common approaches to incorporating SaaS into an overall SOA. **07**  
**(b)** Differentiate between Enterprise Solution and Software Application **07**
- OR**
- Q.4 (a)** What is service Meta Model and how it is significant in SOA. Explain the components of service. Show various example's for service Interface. **07**  
**(b)** What is Programmatic Service Composition? What are the major drawbacks of this approach? **07**
- Q.5 (a)** Why Two Phase Commit (2PC) Protocol based transactions are not preferred during composition of a service? Which approach you will suggest to avoid/compliment 2PC **07**  
**(b)** Write a brief note on Hierarchical and conversational composition of services **07**
- OR**
- Q.5 (a)** Define ANY of SIX from Following **07**  
(i) Enterprise Business process (ii) Common Service Pattern (iii) Orchestration (iv) Atomic services (v) Dynamic binding (vi) separation of Concern (vii) Semantic data (viii) service contract  
**(b)** What semantics are important in SOA? Describe three basic layers of maturity for semantic interoperability. **07**

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