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Question Paper Code : 40768

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2021.

Seventh Semester

Information Technology

IT 8074 — SERVICE ORIENTED ARCHITECTURE

(Common to Computer Science and Engineering/ Computer and
Communication Engineering)

(Regulations 2017)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Outline the use of namespace with an example.
2. Predict an outline of document object model.
3. How loose coupling is achieved in Service orientation?
4. Define a Web service.
5. What is UDDI?
6. Outline the use of the fault section in a SOAP message.
7. How to integrate legacy applications with SOA?
8. What is SSL?
9. Differentiate task centric and entity centric services.
10. Outline the relationship between composition and coordination.

PART B — (5 × 13 = 65 marks)

11. (a) Write an XML document to store the details of at least 2 employees with 3 fields (Name [fname,lname], empID, Salary) and define the structure of the XML document with a valid DTD. If it is possible to check the length of the empID is 8 digits and also an Integer type include in the DTD validation, if not discuss its limitations and the alternative solution.

Or

- (b) Outline the steps in parsing, XML using DOM with an example.

12. (a) Compare SOA with client-server architecture and outline the characteristics of SOA.

Or

- (b) Elaborate the principles of Service orientation and service layers in SOA.

13. (a) What is SOAP? What are the building blocks of SOAP? With a simple example explain how the request is sent to a server and the response is received from the server.

Or

- (b) Elaborate the technical requirements of Orchestration and Choreography.

14. (a) Explain in detail WS-Coordination and its types.

Or

- (b) Elaborate the WS-Security framework with an example.

15. (a) Elaborate the step by step process of service modeling with a suitable use case scenario.

Or

- (b) Outline WS-BPEL language and design a BPEL process to integrate the recharge service with a discount service and return the discounted bill.

PART C — (1 × 15 = 15 marks)

16. (a) For the contact tracing use case mentioned below, we are interested in parsing XML files containing information about the users. Identify the suitable parser and write the relevant code snippet to list the contacted users when a particular person is at risk.

Contact Tracing use case: Each user will have information like their location, Bluetooth code of the other users they were contact in, timestamp of contact, location of contact, user's health parameters like temperature and other signs of corona. Each person might have met multiple users at different location and timestamp.

Or

- (b) Discuss web service architecture and its key fundamentals. Using web service technology of your choice, Create a Web Service for parking lot bill calculation based on vehicle type and duration.
