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MANIPAL INSTITUTE OF TECHNOLOGY
(Constituent Institute of Manipal University)
MANIPAL-576104

II SEMESTER M.TECH.(CSIS & CSE) DEGREE
END-SEMESTER EXAMINATION - MAY 2015
SUBJECT: WEB SERVICES (CSE 562) (ELECTIVE II)
DATE: 16-05-2015

TIME: 3 HOURS MAX.MARKS: 50

Instructions to Candidates

- **Note:** Answer any **FIVE** full questions.

1.A. Explain three properties of a service endpoint.
1.B. Write queries in XSLT and XQuery that will run against the sample XML file (as shown in Fig.Q.1.B) to create an HTML table with one-pixel border that lists all "CS" department courses with enrollment greater than 20. Sort the rows alphabetically by course title. Each row should contain course title in bold. (3 + 7)

```
<Course_Catalog>
  <Department Code='CS'>
    <Title>Computer Science</Title>
    <Course Enrollment='22' Number='CSE562'>
      <Title>Web Services</Title>
    </Course>
    <Course Enrollment='20' Number='CSE522'>
      <Title>Advanced Database Systems</Title>
    </Course>
    <Course Enrollment='25' Number='CSE520'>
      <Title>Software Testing and Analysis</Title>
    </Course>
  </Department>
  <Department Code='EE'>
    <Title>Electrical Engineering</Title>
    <Course Enrollment='30' Number='EE522'>
      <Title>Digital Systems I</Title>
    </Course>
    <Course Enrollment='20' Number='EE524'>
      <Title>Digital Systems II</Title>
    </Course>
  </Department>
</Course_Catalog>
```

Fig.Q.1.B

2.A. A web service named “StockService” contains an operation “GetLastTradePrice”, which takes company name as the parameter and returns the last trade price.
(i) With other suitable assumptions, write the WSDL document to describe this service.
(ii) Write the WCF contract for the method "GetLastTradePrice", its parameter and return type.
2.B. Write the C# code to access a REST service which returns data in JSON format.
((5 + 2) + 3)

3.A. Design a REST service for "ManipalBlog" with the following requirements:

- Users can register by providing email or phone number.
- Only registered users are allowed to create a new blog.
- Even anonymous users are allowed to comment on a blog.

Write the URI and the HTTP method for the following operations:

- User registration
- Update existing blog.
- Registered user adds comment.
- Anonymous user deletes comment.

3.B. Explain any five key WS-* Security Standards.
3.C. Explain SOA. (2 + 5 + 3)

4.A. Explain any five differences between SOAP 1.1 and SOAP 1.2.
4.B. Explain any five differences between HTML and XHTML with example. (5 + 5)

5.A. Consider the XML file for Bookstore's inventory given in Fig.Q.5.A.

```
<?xml version="1.0"?>
<bookstore specialty="novel">
  <book style="autobiography">
    <author>
      <first-name>Joe</first-name>
      <last-name>Bob</last-name>
      <award>Trenton Literary Review Honorable Mention</award>
    </author>
    <price>12</price>
  </book>
  <book style="novel" id="myfave">
    <author>
      <first-name>Toni</first-name>
      <last-name>Bob</last-name>
      <degree from="Trenton U">B.A.</degree>
      <degree from="Harvard">Ph.D.</degree>
      <award>Pulitzer</award>
    </author>
    <price intl="Canada" exchange="0.7">6.50</price>
  </book>
</bookstore>
```

Fig.Q.5.A: Sample Xml File

Write the XPATH expressions for the following natural language description with respect to the XML file in Fig.Q.5.A.
(i) Selects the last <degree> element of all the authors
(ii) Selects first two <award> elements of all the authors
(iii) Selects the <author> elements who have authored books which has <price> element. Also the <price> element should not contain any attributes.
5.B. Write the XML Schema Document for the sample XML file shown in Fig.Q.5.A.
5.C. Explain any four XPath axes.
((1 + 1 + 1) + 5 + 2)

6.A. Explain the following:
(i) WebSphere MQ
(ii) JSON
(iii) Limitations of client-side scripting
(iv) Web service protocol stack
(v) Operation patterns supported by WSDL 1.1 (2 + 2 + 2 + 2 + 2)

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