

(2 ½ Hours)

[Total Marks: 75]

- N.B. 1) All questions are compulsory.
 2) Figures to the right indicate marks.
 3) Illustrations, in-depth answers and diagrams will be appreciated.
 4) Mixing of sub-questions is not allowed.

Q. 1 Attempt All (Each of 5Marks)

(15M)

(a) Multiple Choice Questions

(5M)

1. _____ is the endpoint to test your service through tester for JAX-WS.
 - a) `http://localhost:8080/app-name/service-name?Tester`
 - b) `http://localhost:8080/app-name/service-name?WebServiceTester`
 - c) `http://localhost:8080/app-name/service-name?WSDL`
 - d) `http://localhost:8080/app-name/service-name?WSDLTester`
2. _____ indicates that web method has only an input message and no output.
 - a) Request/Response
 - b) Two-way
 - c) One-way
 - d) None of these
3. Which of the following is not a valid HTTP method used in RESTful web services?
 - a) OPTIONS
 - b) DATE
 - c) GET
 - d) POST
4. Which of the following HTTP Status code means NOT MODIFIED, used to reduce network bandwidth usage in case of conditional GET requests?
 - a) 200
 - b) 201
 - c) 204
 - d) 304
5. A WCF service is exposed to the world as a collection of _____.
 - a) Messages
 - b) endpoints
 - c) services
 - d) None of these

(b) Fill in the blanks

(5M)

(Use these pool of options - channels, payload, UDDI, Granularity, JSR353)

1. Web services can be discovered using _____.
2. Service _____ refers to the scope of functionality exposed by a service.
3. The request data which is present in the body part of every HTTP message is referred as _____.
4. _____ is Java API for JSON Processing.
5. The messaging layer in a WCF Architecture is composed of _____.

(c) Give short answers in 1-2 sentences

(5M)

1. What is XML?
2. Define Informational/Type I service?
3. What is a Jersey Client?
4. Define HATEOAS.
5. What is .NET Framework Client Profile?

Q. 2 Attempt the following (Any THREE)(Each of 5Marks) (15M)

- (a) What is SOAP? Explain in detail.
- (b) Write a short note on fault element in SOAP.
- (c) Describe the structure of WSDL document.
- (d) Explain the Client Service Model with respect to Web Service.
- (e) Describe in brief any one of the SOAP communication models.
- (f) Write a web service method that accepts two numbers as parameters and returns the value of addition of those numbers using JAX-WS. **(Write only the Webservice method block)**

Q. 3 Attempt the following (Any THREE) (Each of 5Marks) (15M)

- (a) Write a short note on Swagger with respect to JAX-RS.
- (b) List and explain any five JAVA frameworks for building RESTful web services.
- (c) Describe the characteristics required for Good Resource Representation.
- (d) Explain HTTP and its working with a neat diagram.
- (e) Write a note on HTTP basic authentication.
- (f) Describe the Media Type Annotation in JAX-RS APIs.

Q. 4 Attempt the following (Any THREE) (Each of 5Marks) (15M)

- (a) Write down the steps to create a Windows Communication Foundation Client.
- (b) Explain different environment of hosting web services.
- (c) Explain the Features of WCF in detail.
- (d) Write a note on Quality of Service (QoS) for Webservices.
- (e) What do you mean by Service Contract? Explain in detail.
- (f) What do you mean by Operation Contract? Explain in detail.

Q. 5 Attempt the following (Any THREE) (Each of 5Marks) (15M)

- (a) Write a short note on Web Service Development Lifecycle.
- (b) List and explain the core constraint of RESTful system.
- (c) What is Windows Communications Foundation?
- (d) Describe the characteristics of Inter-process communication.
- (e) How does data exchange happens using JSON in JAX-RS? Explain.
