

(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**(a) Multiple Choice Questions.****(10M)**

- 1) _____ layer is responsible for actually transporting XML messages between two computers.
 - a) Service Protocol
 - b) Service Messaging
 - c) Service Transport
 - d) Service Description
- 2) _____ is an XML-based standard for describing, publishing, and finding web services.
 - a) SOAP
 - b) HTTP
 - c) WSDL
 - d) UDDI
- 3) The basic Web Services platform is combination of _____ and _____.
 - a) CSS + HTTP
 - b) XML + HTML
 - c) XML + HTTP
 - d) CSS + JAVA
- 4) SOAP is _____.
 - a) Simple Object Active Protocol
 - b) Sample Object Access Protocol
 - c) Sample Object Active Protocol
 - d) Simple Object Access Protocol
- 5) Which of the following is not a valid HTTP method used in RESTful web services?
 - a) OPTIONS
 - b) DATE
 - c) GET
 - d) POST
- 6) Which of the following annotation of JAX RS API is used to annotate a method to get the relative path of the resource class/method?
 - a) @Path
 - b) @GET
 - c) @PUT
 - d) @POST
- 7) URI Stands for _____.
 - a) Unit Resource Identifier
 - b) Uniform Representation Identifier
 - c) Uniform Resource Identifier
 - d) Unified Resource Identifier.

- 8) Which contract supports Transaction Flow?
 - a) Service
 - b) Operation
 - c) Message
 - d) Data
- 9) WCF services can communicate with _____.
 - a) All programming languages.
 - b) XML.
 - c) only the languages included with Visual Studio .NET.
 - d) multiple platforms and multiple languages.
- 10) Which one is not a class in WCF?
 - a) BasicHttpBinding
 - b) BasicHttpContextBinding
 - c) BasicHttpsBinding
 - d) ClientBinding

(b) Fill in the blanks (HTTP, Two , 200, Elements & Attribute, Envelop & Header, TCP/IP, One, Stub, 300) (5M)

- i. XML Schema Consist of _____.
- ii. RPC provides a _____ on the client side, a separate one for each remote procedure.
- iii. _____ protocol is used by RESTful web services as a medium of communication between client and server.
- iv. _____ HTTP Status code means OK, shows success.
- v. The default WCF Request Send/Receive timeout is _____ min(s).

Q. 2 Attempt the following (Any THREE) (15M)

- (a) Explain the characteristics of Web Services.
- (b) Explain SOAP web Service in detail.
- (c) Describe the structure of WSDL document.
- (d) What is the Enterprise Service Bus and how does it relate to SOA?
- (e) What is JAX-WS? How it is useful for describing SOAP web services?
- (f) Explain XML Document structure with example.

Q. 3 Attempt the following (Any THREE) (15M)

- (a) List and explain the various Http methods required for creating RESTful Web Services.
- (b) Explain annotations used in RESTful web service.
- (c) List and explain any five JAVA frameworks for building RESTful web services.
- (d) Describe the core constraint of RESTful system.
- (e) Explain the characteristics required for Good Resource Representation.
- (f) Write a short note of JSON object and JSON array.

Q. 4 Attempt the following (Any THREE) (15M)

- (a) What is Windows Communication Foundation (WCF)? Explain the Features of WCF in detail.
- (b) Write a note on Quality of Service (QoS) for Webservices.
- (c) Giving example, explain how to define a Windows Communication Foundation Service Contract.
- (d) Describe Windows Communication Foundation Architecture in Detail.
- (e) What do you mean by Operation Contract? Explain in detail.
- (f) Explain different tasks that are required to build a WCF application

Q. 5 Attempt the following (Any FIVE) (15M)

- (a) Write a short note on the Client-Server model.
 - (b) What is the use of XML schema?
 - (c) Write about the characteristics of Inter-process communication in brief.
 - (d) Write a note on HTTP basic authentication.
 - (e) What is Swagger?
 - (f) List the advantages and disadvantages of Statelessness.
 - (g) What are WCF's ABC?
 - (h) Write about Endpoint in WCF.
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