QUESTION NO 1: Multiple Choice Questions

1. What does the following declaration specify?
MethodInfo[] GetMethods()
a) Returns an array of MethodInfo objects
b) Returns a list of the public methods supported by the type by using GetMethods()
c) Both a & b
d) None of the mentioned

2. Select the two type of threads mentioned in the concept of multithreading:
a) foreground
b) background
c) only a
d) Both a & b

3. Which of these method of Thread class is used to Suspend a thread for a period of time?
a) sleep()
b) terminate()
c) suspend()
d) stop()

4. What are the applications of Reflection?
a) it allows to view attribute information at runtime.
b) It allows late binding to methods and properties.
c) It allows creating new types at runtime.
d) It allows examining various types in an assembly.
e) All of the above.

5. A secure and interoperable binding that is designed for use with duplex service contracts that allows both services and clients to send and receive messages.
a) WSHttpBinding
b) WS2007HttpBinding
c) WSHttpContextBinding
d) WSDualHttpBinding

6. Which keyword is used for using the synchronization features defined by the Monitorclass?
a) lock
b) synchronized
c) Monitor
d) locked

7. Which method is called when a thread is blocked from running temporarily?
a) Pulse()
b) PulseAll()
c) Wait()
d) Both b & c

8. Which method is used to abort thread prior to it's normal execution?
a) sleep()
b) terminate()

c) suspend()
d) Abort()

9.Represents a binding that a Windows Communication Foundation (WCF) service can use to configure and expose endpoints that are able to communicate with ASMX-based Web services and clients.
a) BasicHttpBinding
b) WSHttpBinding
c) NetMsmqBinding
d) NetNamedPipeBinding

10. WCF default message exchange pattern
a) OneWay
b) Request/Response
c) Duplex
d) None

11. Which of the following attribute is used to define Header and Body Elements of Message Contract?
a) Header and Member
b) MessageHeader and MessageMember
c) MessageHeader and MessageBodyMember
d) None

QUESTION NO 2:
State the following as True or False and in case of false, justify your answer.

1. The *mustUnderstand* attribute in the header element of SOAP messages indicates that a header entry is either required or optional for the recipient to process further. (T)
2. Message Contract defines the parameters and return type of an operation. (F)
3. ASP.Net WebServices and WCF uses DataContractSerializers for conversion into XML. (F)
4. Reflection API can read meta data of all obfuscated assemblies. (F)
5. DataReader object is used to fill a DataSet/DataTable with query results in ADO.net. (T)

QUESTION NO 3:
Explain the following questions. You may use diagrams where necessary.

1. Explain the purpose of SOAP Fault Element.
2. Briefly compare WCF and WebAPI with reference to their usages.
3. What is an EndPoint in WCF. Briefly explain the pillars of WCF.
4. Convert the following ASP.Net Web Service Code to equivalent WCF code. You do not need to write the bindings that would be required for this:

```
public class Student
{
        public int StudentId { get; set; }
        public string Name { get; set; }
        public string Gender { get; set; }

        public bool isGraduated { get; set; }

        public Student ()
        {
```

```csharp
            isGraduated = false;
        }
}

public class WebService1 : System.Web.Services.WebService
{
        public List<Student> std = new List<Student>();

        [WebMethod]
         public Student GetStudent(int _StudentId)
         {
            foreach(Student studentObj in std)
            {
                if(studentObj.StudentId == _StudentId )
                {
                    return studentObj;
                }
            }
            return null;
        }
        [WebMethod]
        public bool AddStudent(Student obj)
        {
            std.Add(obj);
            return true;
        }

        public void UpdateGraduatedStatus(Student obj, bool isGraduated)
        {
            obj.isGraduated = isGraduated;

        }

}
```