1. **Which of the following best describes the purpose of the Dispose() method in .NET?**  
   A. To delete an object from memory  
   B. To release unmanaged resources  
   C. To finalize an object  
   D. To trigger garbage collection  
   **Answer:** B  
   **Explanation:** Dispose() is used to explicitly release unmanaged resources like file handles, database connections, etc.
2. **What is the output of the following LINQ query?**

var result = numbers.Where(n => n % 2 == 0).Select(n => n \* 2);  
A. Filters odd numbers and doubles them  
B. Filters even numbers and doubles them  
C. Doubles all numbers  
D. Filters even numbers only  
**Answer:** B

1. **Which of the following is true about the finally block in exception handling?**  
   A. It executes only if an exception occurs  
   B. It executes only if no exception occurs  
   C. It always executes regardless of exceptions  
   D. It never executes if an exception is thrown  
   **Answer:** C
2. **What is the role of the GC.SuppressFinalize() method?**  
   A. Forces garbage collection  
   B. Prevents the finalizer from running  
   C. Deletes the object  
   D. Pauses garbage collection  
   **Answer:** B
3. **Which class is used to build dynamic strings efficiently in C#?**  
   A. String  
   B. StringBuilder  
   C. TextWriter  
   D. StringBuffer  
   **Answer:** B
4. **What is the default access modifier for members of an interface?**  
   A. Private  
   B. Protected  
   C. Internal  
   D. Public  
   **Answer:** D
5. **Which LINQ operator is used to flatten a collection of collections?**  
   A. Select  
   B. Where  
   C. SelectMany  
   D. Join  
   **Answer:** C
6. **What does the IQueryable interface provide over IEnumerable?**  
   A. Deferred execution  
   B. In-memory filtering  
   C. Query translation to data source  
   D. Faster iteration  
   **Answer:** C
7. **Which of the following is a correct way to declare a multicast delegate?**  
   A. delegate void Multi();  
   B. Multi += Method1; Multi += Method2;  
   C. Multi = Method1 + Method2;  
   D. All of the above  
   **Answer:** D
8. **What is the purpose of the lock statement in multithreading?**  
   A. To pause a thread  
   B. To prevent deadlocks  
   C. To ensure mutual exclusion  
   D. To create a new thread  
   **Answer:** C
9. **Which method is used to read a line from a StreamReader?**  
   A. Read()  
   B. ReadLine()  
   C. ReadText()  
   D. GetLine()  
   **Answer:** B
10. **What is the output of Regex.Match("abc123", @"\d+")?**  
    A. abc  
    B. 123  
    C. abc123  
    D. \d+  
    **Answer:** B
11. **Which of the following is true about finalizers in C#?**  
    A. They are called explicitly  
    B. They are deterministic  
    C. They are called by the garbage collector  
    D. They are faster than Dispose  
    **Answer:** C
12. **Which keyword is used to throw an exception in C#?**  
    A. raise  
    B. throw  
    C. catch  
    D. error  
    **Answer:** B
13. **Which of the following is a valid lambda expression?**  
    A. (x, y) => x + y  
    B. x, y => x + y  
    C. => x + y  
    D. (x, y) -> x + y  
    **Answer:** A
14. **Which method is used to serialize an object to JSON in .NET?**  
    A. JsonConvert.Serialize()  
    B. JsonSerializer.Serialize()  
    C. JSON.Write()  
    D. Json.Write()  
    **Answer:** B
15. **What is the purpose of the Path.Combine() method?**  
    A. To merge two files  
    B. To combine directory and file names  
    C. To split a path  
    D. To create a new directory  
    **Answer:** B
16. **Which of the following is true about Parallel.ForEach?**  
    A. It executes sequentially  
    B. It blocks the main thread  
    C. It executes iterations in parallel  
    D. It is slower than foreach  
    **Answer:** C
17. **Which attribute is used to mark a method as obsolete?**  
    A. [Deprecated]  
    B. [Ignore]  
    C. [Obsolete]  
    D. [Outdated]  
    **Answer:** C
18. **What is the purpose of CancellationToken in TPL?**  
    A. To pause a task  
    B. To cancel a running task  
    C. To restart a task  
    D. To delay a task  
    **Answer:** B
19. **Which of the following is NOT a valid stream class in .NET?**  
    A. FileStream  
    B. MemoryStream  
    C. DataStream  
    D. NetworkStream  
    **Answer:** C
20. **Which method is used to deserialize a JSON string in .NET?**  
    A. JsonConvert.Read()  
    B. JsonSerializer.Deserialize()  
    C. JSON.Parse()  
    D. Json.Read()  
    **Answer:** B
21. **What is the purpose of the Monitor class in threading?**  
    A. To create threads  
    B. To manage thread priorities  
    C. To synchronize access to objects  
    D. To kill threads  
    **Answer:** C
22. **Which of the following is a correct way to define a delegate?**  
    A. delegate int MyDelegate(string s);  
    B. delegate void MyDelegate();  
    C. Both A and B  
    D. None  
    **Answer:** C
23. **Which method is used to write binary data to a file?**  
    A. WriteBinary()  
    B. BinaryWriter.Write()  
    C. File.WriteBinary()  
    D. Stream.WriteBinary()  
    **Answer:** B
24. **Which of the following is true about async methods?**  
    A. They block the calling thread  
    B. They return void  
    C. They return Task or Task  
    D. They cannot use await  
    **Answer:** C
25. **What is the purpose of Directory.Exists(path)?**  
    A. To create a directory  
    B. To delete a directory  
    C. To check if a directory exists  
    D. To rename a directory  
    **Answer:** C
26. **Which of the following is a valid use of throw keyword?**  
    A. throw new Exception();  
    B. throw;  
    C. Both A and B  
    D. None  
    **Answer:** C
27. **Which method is used to append text to a file?**  
    A. File.WriteAllText()  
    B. File.AppendAllText()  
    C. File.Write()  
    D. File.AddText()  
    **Answer:** B
28. **What is the purpose of Task.ContinueWith()?**  
    A. To cancel a task  
    B. To chain tasks  
    C. To delay a task  
    D. To restart a task  
    **Answer:** B
29. **Which of the following is true about StringBuilder?**  
    A. It is immutable  
    B. It is thread-safe by default  
    C. It is mutable and efficient for string manipulation  
    D. It cannot be resized  
    **Answer:** C
30. **Which of the following is a valid regular expression to match an email?**  
    A. \w+@\w+\.\w+  
    B. .\*@.\*  
    C. \d+@\d+  
    D. @.\*  
    **Answer:** A
31. **Which method is used to start a new thread in C#?**  
    A. Thread.Run()  
    B. Thread.Start()  
    C. Thread.Begin()  
    D. Thread.Execute()  
    **Answer:** B
32. **Which of the following is NOT a LINQ standard query operator?**  
    A. Select  
    B. Where  
    C. Filter  
    D. GroupBy  
    **Answer:** C

**35. What is the purpose of IDisposable interface?**  
A. To manage memory allocation  
B. To allow object serialization  
C. To release unmanaged resources deterministically  
D. To finalize objects  
**Answer:** C  
Explanation: IDisposable provides a mechanism for releasing unmanaged resources explicitly using the Dispose() method.

**36. Which of the following is true about Task.Run() in TPL?**  
A. It blocks the main thread  
B. It creates a new thread manually  
C. It schedules a task on the thread pool  
D. It runs synchronously  
**Answer:** C

**37. Which method is used to match a pattern in a string using Regex?**  
A. Regex.Match()  
B. Regex.Find()  
C. Regex.Search()  
D. Regex.Locate()  
**Answer:** A

**38. What is the purpose of the using statement in C#?**  
A. To import namespaces  
B. To define a scope for IDisposable objects  
C. To create a new thread  
D. To handle exceptions  
**Answer:** B

**39. Which of the following is a correct way to define a custom exception?**  
A. class MyException : Exception {}  
B. class MyException : ApplicationException {}  
C. Both A and B  
D. class MyException : Error {}  
**Answer:** C

**40. Which of the following is true about Parallel.For?**  
A. It executes iterations sequentially  
B. It is used for asynchronous file operations  
C. It executes iterations in parallel using multiple threads  
D. It is slower than a regular for loop  
**Answer:** C

**41. Which method is used to read binary data from a file?**  
A. BinaryReader.Read()  
B. File.ReadBinary()  
C. Stream.ReadBinary()  
D. File.ReadAllBytes()  
**Answer:** A

**42. What is the output of string.Concat("abc", "123")?**  
A. abc 123  
B. abc123  
C. abc+123  
D. abc,123  
**Answer:** B

**43. Which of the following is true about MulticastDelegate?**  
A. It can point to only one method  
B. It can point to multiple methods  
C. It is obsolete in .NET  
D. It cannot be used with events  
**Answer:** B

**44. Which of the following is used to define a custom attribute?**  
A. [AttributeUsage]  
B. [CustomAttribute]  
C. [DefineAttribute]  
D. [AttributeDefine]  
**Answer:** A

**45. Which of the following is NOT a valid threading synchronization primitive in C#?**  
A. Mutex  
B. Semaphore  
C. Monitor  
D. Binder  
**Answer:** D

**46. What is the purpose of TextWriter class?**  
A. To read text from a file  
B. To write text to a stream  
C. To write binary data  
D. To serialize objects  
**Answer:** B

**47. Which of the following is true about async and await keywords?**  
A. They are used for multithreading  
B. They are used for asynchronous programming  
C. They are used for exception handling  
D. They are used for serialization  
**Answer:** B

**48. Which of the following is used to define a delegate that returns a value?**  
A. delegate void MyDelegate();  
B. delegate int MyDelegate();  
C. delegate bool MyDelegate();  
D. Both B and C  
**Answer:** D

**49. Which of the following is true about FileStream?**  
A. It is used only for text files  
B. It is used for both binary and text file operations  
C. It is obsolete  
D. It cannot be used with using  
**Answer:** B

**50. What is the purpose of TaskScheduler in TPL?**  
A. To manage memory  
B. To schedule and control task execution  
C. To serialize objects  
D. To handle exceptions  
**Answer:** B

**51. Which of the following is true about GroupBy in LINQ?**  
A. It filters elements  
B. It projects elements  
C. It groups elements based on a key  
D. It sorts elements  
**Answer:** C

**52. Which of the following is used to define a thread-safe block of code?**  
A. lock  
B. try  
C. catch  
D. await  
**Answer:** A

**53. What is the purpose of Directory.CreateDirectory()?**  
A. To delete a directory  
B. To rename a directory  
C. To create a new directory  
D. To move a directory  
**Answer:** C

**54. Which of the following is true about MemoryStream?**  
A. It reads/writes to disk  
B. It reads/writes to memory  
C. It is obsolete  
D. It is used for network operations  
**Answer:** B

**55. Which of the following is a valid LINQ query expression?**  
A. from x in list select x;  
B. select x from list;  
C. list select x from x;  
D. query x in list;  
**Answer:** A

**56. Which of the following is true about throw; inside a catch block?**  
A. It throws a new exception  
B. It rethrows the original exception  
C. It suppresses the exception  
D. It logs the exception  
**Answer:** B

**57. Which of the following is used to serialize an object to XML?**  
A. XmlSerializer  
B. XmlWriter  
C. XmlReader  
D. XmlDocument  
**Answer:** A

**58. Which of the following is true about Semaphore?**  
A. It allows only one thread at a time  
B. It allows a limited number of threads  
C. It is used for file operations  
D. It is used for serialization  
**Answer:** B

**59. Which of the following is used to define a custom event?**  
A. event EventHandler MyEvent;  
B. delegate void MyEvent();  
C. event MyEventHandler MyEvent;  
D. Both A and C  
**Answer:** D

**60. Which of the following is true about BinaryFormatter?**  
A. It is used for JSON serialization  
B. It is used for XML serialization  
C. It is used for binary serialization  
D. It is obsolete in .NET 5+  
**Answer:** C  
Note: BinaryFormatter is used for binary serialization, but it is obsolete and insecure in .NET 5+.

Here are **questions 61 to 90** in a clean, copy-paste-friendly format for Microsoft Word. Each question includes options (A–D), the correct answer, and a brief explanation—no special formatting, just plain text for easy use.

**61. What is the purpose of the Dispose() method in the IDisposable interface?**  
A. To delete an object from memory  
B. To finalize an object  
C. To release unmanaged resources  
D. To trigger garbage collection  
**Answer:** C  
Explanation: Dispose() is used to explicitly release unmanaged resources like file handles, database connections, etc.

**62. Which of the following LINQ methods is used to return a single element that satisfies a condition?**  
A. First()  
B. Where()  
C. Select()  
D. GroupBy()  
**Answer:** A  
Explanation: First() returns the first element that satisfies a condition.

**63. What is the role of the finally block in exception handling?**  
A. Executes only if an exception occurs  
B. Executes only if no exception occurs  
C. Always executes regardless of exceptions  
D. Executes only when the catch block is skipped  
**Answer:** C  
Explanation: The finally block always executes, whether or not an exception is thrown.

**64. Which of the following is true about StringBuilder in C#?**  
A. It is immutable  
B. It is thread-safe by default  
C. It is mutable and efficient for string manipulation  
D. It cannot be resized  
**Answer:** C  
Explanation: StringBuilder is mutable and more efficient for frequent string modifications.

**65. What does the GC.Collect() method do?**  
A. Deletes all objects  
B. Forces garbage collection  
C. Finalizes all objects  
D. Releases unmanaged resources  
**Answer:** B  
Explanation: GC.Collect() forces the garbage collector to run.

**66. Which of the following is used to define a lambda expression in C#?**  
A. =>  
B. ->  
C. :=  
D. ::  
**Answer:** A  
Explanation: The lambda operator => is used to define lambda expressions.

**67. What is the purpose of the Aggregate() method in LINQ?**  
A. To filter elements  
B. To group elements  
C. To perform a custom accumulation  
D. To sort elements  
**Answer:** C  
Explanation: Aggregate() performs a custom accumulation operation on a sequence.

**68. Which of the following is used to handle global exceptions in a Windows Forms application?**  
A. Application.ThreadException  
B. try-catch block  
C. using statement  
D. AppDomain.CurrentDomain  
**Answer:** A  
Explanation: Application.ThreadException handles unhandled exceptions on the UI thread.

**69. What is the purpose of the TextReader class?**  
A. To write text to a file  
B. To read binary data  
C. To read text from a stream  
D. To serialize objects  
**Answer:** C  
Explanation: TextReader is used to read text from a stream.

**70. Which of the following is true about Parallel.Invoke()?**  
A. It runs tasks sequentially  
B. It runs multiple actions in parallel  
C. It is used for file operations  
D. It is obsolete  
**Answer:** B  
Explanation: Parallel.Invoke() executes multiple actions concurrently.

**71. What is the purpose of the Match method in the Regex class?**  
A. To replace text  
B. To split text  
C. To find the first match of a pattern  
D. To validate XML  
**Answer:** C  
Explanation: Match() finds the first occurrence of a pattern in a string.

**72. Which of the following is used to serialize an object to JSON in .NET Core?**  
A. JsonConvert.SerializeObject()  
B. JsonSerializer.Serialize()  
C. JSON.Write()  
D. JsonWriter.Write()  
**Answer:** B  
Explanation: JsonSerializer.Serialize() is used in .NET Core for JSON serialization.

**73. What is the purpose of the lock statement in C#?**  
A. To create a thread  
B. To prevent deadlocks  
C. To ensure mutual exclusion  
D. To pause a thread  
**Answer:** C  
Explanation: lock ensures that only one thread can access a block of code at a time.

**74. Which of the following is true about FileStream?**  
A. It is used only for text files  
B. It is used for both binary and text file operations  
C. It is obsolete  
D. It cannot be used with using  
**Answer:** B  
Explanation: FileStream supports both binary and text file operations.

**75. What is the purpose of the Directory.GetFiles() method?**  
A. To create a directory  
B. To delete a directory  
C. To get all files in a directory  
D. To move a directory  
**Answer:** C  
Explanation: Directory.GetFiles() returns the names of files in a specified directory.

**76. Which of the following is true about MulticastDelegate?**  
A. It can point to only one method  
B. It can point to multiple methods  
C. It is obsolete  
D. It cannot be used with events  
**Answer:** B  
Explanation: MulticastDelegate can reference multiple methods.

**77. What is the purpose of the Dispose() method in Stream classes?**  
A. To delete the stream  
B. To finalize the stream  
C. To release unmanaged resources  
D. To flush the stream  
**Answer:** C  
Explanation: Dispose() releases unmanaged resources used by the stream.

**78. Which of the following is used to define a custom attribute in C#?**  
A. [AttributeUsage]  
B. [Custom]  
C. [Define]  
D. [Meta]  
**Answer:** A  
Explanation: [AttributeUsage] specifies how a custom attribute can be used.

**79. What is the purpose of the Task.Delay() method?**  
A. To cancel a task  
B. To pause a task for a specified time  
C. To restart a task  
D. To block the main thread  
**Answer:** B  
Explanation: Task.Delay() creates a task that completes after a time delay.

**80. Which of the following is true about BinaryReader?**  
A. It reads text data  
B. It reads binary data  
C. It writes binary data  
D. It serializes objects  
**Answer:** B  
Explanation: BinaryReader is used to read binary data from a stream.

**81. What is the purpose of the event keyword in C#?**  
A. To define a delegate  
B. To declare an event  
C. To raise an exception  
D. To create a thread  
**Answer:** B  
Explanation: The event keyword is used to declare an event based on a delegate.

**82. Which of the following is used to cancel a running task in TPL?**  
A. Task.Abort()  
B. CancellationToken  
C. Task.Stop()  
D. Task.Cancel()  
**Answer:** B  
Explanation: CancellationToken is used to signal cancellation to a running task.

**83. What is the purpose of the GroupBy method in LINQ?**  
A. To filter elements  
B. To sort elements  
C. To group elements by a key  
D. To project elements  
**Answer:** C  
Explanation: GroupBy groups elements that share a common key.

**84. Which of the following is true about XmlSerializer?**  
A. It serializes objects to JSON  
B. It serializes objects to XML  
C. It serializes objects to binary  
D. It is obsolete  
**Answer:** B  
Explanation: XmlSerializer is used to serialize and deserialize objects to and from XML.

**85. What is the purpose of the Monitor.Enter() method?**  
A. To create a thread  
B. To release a lock  
C. To acquire a lock on an object  
D. To pause a thread  
**Answer:** C  
Explanation: Monitor.Enter() is used to acquire a lock on an object for thread synchronization.

**86. Which of the following is used to define a delegate in C#?**  
A. delegate void MyDelegate();  
B. event MyDelegate MyEvent;  
C. class MyDelegate {};  
D. void MyDelegate();  
**Answer:** A  
Explanation: Delegates are defined using the delegate keyword.

**87. What is the purpose of the Path.GetExtension() method?**  
A. To get the file name  
B. To get the file path  
C. To get the file extension  
D. To get the directory name  
**Answer:** C  
Explanation: Path.GetExtension() returns the extension of a file path.

**88. Which of the following is true about Semaphore?**  
A. It allows only one thread  
B. It allows a limited number of threads  
C. It is used for file operations  
D. It is used for serialization  
**Answer:** B  
Explanation: Semaphore limits the number of threads that can access a resource concurrently.

**89. What is the purpose of the ToList() method in LINQ?**  
A. To filter elements  
B. To convert a query result to a list  
C. To sort elements  
D. To group elements  
**Answer:** B  
Explanation: ToList() executes the query and converts the result into a List<T>.

**90. Which of the following is true about Finalizers in C#?**  
A. They are called explicitly by the user  
B. They are used to release managed resources  
C. They are automatically called by the garbage collector  
D. They are faster than Dispose()  
**Answer:** C  
Explanation: Finalizers are automatically invoked by the garbage collector to clean up unmanaged resources.

**91. What is the purpose of the OrderByDescending() method in LINQ?**  
A. To sort elements in ascending order  
B. To group elements  
C. To sort elements in descending order  
D. To filter elements  
**Answer:** C  
Explanation: OrderByDescending() sorts the elements of a sequence in descending order.

**92. Which of the following is used to define a thread pool in C#?**  
A. ThreadPool.QueueUserWorkItem()  
B. Thread.Start()  
C. Task.Run()  
D. Thread.Create()  
**Answer:** A  
Explanation: ThreadPool.QueueUserWorkItem() queues a method for execution on a thread pool thread.

**93. What is the purpose of the TextWriter.WriteLine() method?**  
A. To read a line from a file  
B. To write a line of text to a stream  
C. To write binary data  
D. To serialize an object  
**Answer:** B  
Explanation: WriteLine() writes a line of text to the output stream.

**94. Which of the following is true about async methods in C#?**  
A. They must return void  
B. They must contain at least one await  
C. They can return Task or Task<T>  
D. They cannot throw exceptions  
**Answer:** C  
Explanation: async methods typically return Task or Task<T> and may or may not contain await.

**95. What is the purpose of the DirectoryInfo class?**  
A. To read file contents  
B. To manage directory metadata and operations  
C. To serialize directories  
D. To monitor file changes  
**Answer:** B  
Explanation: DirectoryInfo provides instance methods for creating, moving, and enumerating directories.

**96. Which of the following is used to define a custom event handler?**  
A. delegate void MyHandler(object sender, EventArgs e);  
B. event MyHandler MyEvent;  
C. Both A and B  
D. event void MyHandler();  
**Answer:** C  
Explanation: A delegate defines the signature, and the event uses that delegate type.

**97. What is the purpose of the Parallel.ForEach() method?**  
A. To iterate sequentially  
B. To iterate over a collection in parallel  
C. To sort a collection  
D. To group elements  
**Answer:** B  
Explanation: Parallel.ForEach() executes iterations of a loop in parallel.

**98. Which of the following is true about Regex.IsMatch()?**  
A. It returns the matched string  
B. It returns a boolean indicating a match  
C. It throws an exception if no match is found  
D. It replaces the matched string  
**Answer:** B  
Explanation: IsMatch() checks if the input string matches the pattern and returns a boolean.

**99. What is the purpose of the Path.GetFileName() method?**  
A. To get the file extension  
B. To get the directory name  
C. To get the file name from a path  
D. To get the full path  
**Answer:** C  
Explanation: Path.GetFileName() extracts the file name from a full path.

**100. Which of the following is true about BinaryWriter?**  
A. It reads binary data  
B. It writes binary data  
C. It writes text data  
D. It serializes objects  
**Answer:** B  
Explanation: BinaryWriter is used to write primitive types in binary to a stream.

**101. What is the purpose of the Task.WhenAll() method?**  
A. To run tasks sequentially  
B. To wait for all tasks to complete  
C. To cancel all tasks  
D. To run only the first task  
**Answer:** B  
Explanation: Task.WhenAll() waits for all the provided tasks to complete.

**102. Which of the following is used to define a custom attribute class?**  
A. class MyAttribute : Attribute {}  
B. class MyAttribute : Object {}  
C. class MyAttribute : Exception {}  
D. class MyAttribute : EventArgs {}  
**Answer:** A  
Explanation: Custom attributes must inherit from the System.Attribute class.

**103. What is the purpose of the catch block in exception handling?**  
A. To throw an exception  
B. To define a final cleanup  
C. To handle exceptions  
D. To define a try block  
**Answer:** C  
Explanation: The catch block handles exceptions thrown in the try block.

**104. Which of the following is true about IEnumerable?**  
A. It supports querying remote data sources  
B. It supports deferred execution  
C. It is used only with arrays  
D. It executes queries immediately  
**Answer:** B  
Explanation: IEnumerable supports deferred execution and is suitable for in-memory collections.

**105. What is the purpose of the Dispose() method in IDisposable?**  
A. To finalize an object  
B. To release unmanaged resources  
C. To delete an object  
D. To pause execution  
**Answer:** B  
Explanation: Dispose() is used to release unmanaged resources explicitly.

**106. Which of the following is true about Task.Factory.StartNew()?**  
A. It creates a new thread  
B. It schedules a task using the default scheduler  
C. It blocks the main thread  
D. It is obsolete  
**Answer:** B  
Explanation: Task.Factory.StartNew() creates and schedules a task using the default scheduler.

**107. What is the purpose of the XmlReader class?**  
A. To write XML  
B. To read XML in a forward-only, read-only manner  
C. To serialize objects  
D. To validate XML  
**Answer:** B  
Explanation: XmlReader provides fast, non-cached, forward-only access to XML data.

**108. Which of the following is true about lock in multithreading?**  
A. It allows multiple threads to access a block  
B. It prevents deadlocks  
C. It ensures only one thread accesses a block at a time  
D. It is used for asynchronous programming  
**Answer:** C  
Explanation: lock ensures mutual exclusion by allowing only one thread to access a critical section.

**109. What is the purpose of the await keyword in C#?**  
A. To pause the main thread  
B. To block a task  
C. To asynchronously wait for a task to complete  
D. To cancel a task  
**Answer:** C  
Explanation: await is used to asynchronously wait for a task to complete without blocking the thread.

**110. Which of the following is true about JsonSerializer.Deserialize<T>()?**  
A. It serializes an object to JSON  
B. It deserializes a JSON string to an object of type T  
C. It writes JSON to a file  
D. It validates JSON  
**Answer:** B  
Explanation: JsonSerializer.Deserialize<T>() converts a JSON string into an object of type T.

**111. What is the purpose of the TaskContinuationOptions enum in TPL?**  
A. To cancel a task  
B. To define how a continuation task behaves  
C. To serialize a task  
D. To delay a task  
**Answer:** B  
Explanation: TaskContinuationOptions allows you to control the behavior of continuation tasks, such as running only on faulted or successful tasks.

**112. Which of the following is true about IQueryable?**  
A. It executes queries immediately  
B. It is used for in-memory collections  
C. It supports query translation to data sources  
D. It is obsolete  
**Answer:** C  
Explanation: IQueryable allows LINQ queries to be translated to the underlying data source (e.g., SQL).

**113. What is the purpose of the Mutex class in threading?**  
A. To create a new thread  
B. To synchronize access across processes  
C. To serialize objects  
D. To manage memory  
**Answer:** B  
Explanation: Mutex is used to synchronize access to resources across multiple threads or processes.

**114. Which of the following is used to define a multicast delegate?**  
A. delegate void MyDelegate();  
B. MyDelegate += Method1; MyDelegate += Method2;  
C. Both A and B  
D. event MyDelegate MyEvent;  
**Answer:** C  
Explanation: A multicast delegate is defined using the delegate keyword and can reference multiple methods.

**115. What is the purpose of the TextWriter.Flush() method?**  
A. To close the stream  
B. To clear the buffer and write to the stream  
C. To read from the stream  
D. To serialize the stream  
**Answer:** B  
Explanation: Flush() clears the buffer and writes its contents to the underlying stream.

**116. Which of the following is true about async void methods?**  
A. They are used for event handlers  
B. They return a value  
C. They are recommended for all async methods  
D. They block the calling thread  
**Answer:** A  
Explanation: async void is typically used only for event handlers; otherwise, Task or Task<T> is preferred.

**117. What is the purpose of the Directory.Move() method?**  
A. To delete a directory  
B. To rename or move a directory  
C. To create a directory  
D. To copy a directory  
**Answer:** B  
Explanation: Directory.Move() moves or renames a directory.

**118. Which of the following is true about JsonSerializerOptions?**  
A. It is used to configure XML serialization  
B. It is used to configure JSON serialization  
C. It is used to configure binary serialization  
D. It is obsolete  
**Answer:** B  
Explanation: JsonSerializerOptions allows customization of JSON serialization behavior.

**119. What is the purpose of the SemaphoreSlim class?**  
A. To serialize objects  
B. To manage memory  
C. To limit concurrent access to a resource  
D. To create threads  
**Answer:** C  
Explanation: SemaphoreSlim is a lightweight alternative to Semaphore for limiting concurrent access.

**120. Which of the following is used to define a custom exception class?**  
A. class MyException : Exception {}  
B. class MyException : Error {}  
C. class MyException : Object {}  
D. class MyException : EventArgs {}  
**Answer:** A  
Explanation: Custom exceptions should inherit from the Exception class.

**121. What is the purpose of the Parallel.For() method?**  
A. To execute iterations sequentially  
B. To execute iterations in parallel  
C. To sort a collection  
D. To group elements  
**Answer:** B  
Explanation: Parallel.For() executes loop iterations in parallel using multiple threads.

**122. Which of the following is true about Regex.Replace()?**  
A. It finds a match  
B. It replaces matched text with a specified string  
C. It splits a string  
D. It validates input  
**Answer:** B  
Explanation: Regex.Replace() replaces all matches of a pattern with a replacement string.

**123. What is the purpose of the Stream.Close() method?**  
A. To flush the stream  
B. To close the stream and release resources  
C. To read from the stream  
D. To serialize the stream  
**Answer:** B  
Explanation: Close() closes the stream and releases associated resources.

**124. Which of the following is true about TaskScheduler?**  
A. It manages memory  
B. It schedules and controls task execution  
C. It serializes tasks  
D. It cancels tasks  
**Answer:** B  
Explanation: TaskScheduler is responsible for scheduling tasks for execution.

**125. What is the purpose of the catch(Exception ex) block?**  
A. To ignore exceptions  
B. To handle any type of exception  
C. To handle only IO exceptions  
D. To throw a new exception  
**Answer:** B  
Explanation: catch(Exception ex) catches any exception derived from System.Exception.

**126. Which of the following is used to read all lines from a text file?**  
A. File.ReadAllLines()  
B. File.ReadLines()  
C. File.ReadText()  
D. File.ReadAll()  
**Answer:** A  
Explanation: File.ReadAllLines() reads all lines of a file into a string array.

**127. What is the purpose of the IDisposable.Dispose() method?**  
A. To finalize an object  
B. To release unmanaged resources  
C. To delete an object  
D. To pause execution  
**Answer:** B  
Explanation: Dispose() is used to release unmanaged resources explicitly.

**128. Which of the following is true about XmlWriter?**  
A. It reads XML  
B. It writes XML  
C. It serializes objects  
D. It validates XML  
**Answer:** B  
Explanation: XmlWriter is used to write XML data to a stream or file.

**129. What is the purpose of the event keyword in C#?**  
A. To define a delegate  
B. To declare an event  
C. To raise an exception  
D. To create a thread  
**Answer:** B  
Explanation: The event keyword is used to declare an event based on a delegate.

**130. Which of the following is true about Task.Wait()?**  
A. It runs a task  
B. It cancels a task  
C. It blocks the calling thread until the task completes  
D. It schedules a task  
**Answer:** C  
Explanation: Task.Wait() blocks the calling thread until the task has completed execution.

**131. What is the purpose of the StreamReader class?**  
A. To write text to a file  
B. To read text from a stream  
C. To write binary data  
D. To serialize objects  
**Answer:** B  
Explanation: StreamReader is used to read characters from a byte stream.

**132. Which of the following is true about lock in C#?**  
A. It allows multiple threads to access a block  
B. It ensures only one thread accesses a block at a time  
C. It is used for asynchronous programming  
D. It is used for serialization  
**Answer:** B  
Explanation: lock ensures mutual exclusion by allowing only one thread to access a critical section.

**133. What is the purpose of the JsonSerializer.Serialize() method?**  
A. To deserialize JSON  
B. To serialize an object to JSON  
C. To validate JSON  
D. To write XML  
**Answer:** B  
Explanation: JsonSerializer.Serialize() converts an object into a JSON string.

**134. Which of the following is used to define a delegate that returns a value?**  
A. delegate void MyDelegate();  
B. delegate int MyDelegate();  
C. delegate bool MyDelegate();  
D. Both B and C  
**Answer:** D  
Explanation: Delegates can return any type, including int and bool.

**135. What is the purpose of the File.Exists() method?**  
A. To create a file  
B. To delete a file  
C. To check if a file exists  
D. To move a file  
**Answer:** C  
Explanation: File.Exists() checks whether a file exists at the specified path.

**136. Which of the following is true about Task.Run()?**  
A. It blocks the main thread  
B. It creates and starts a task on the thread pool  
C. It runs synchronously  
D. It is obsolete  
**Answer:** B  
Explanation: Task.Run() queues a task to run on the thread pool.

**137. What is the purpose of the Regex.Split() method?**  
A. To match a pattern  
B. To replace text  
C. To split a string based on a pattern  
D. To validate input  
**Answer:** C  
Explanation: Regex.Split() splits a string into an array based on a regular expression pattern.

**138. Which of the following is true about TextWriter?**  
A. It reads text  
B. It writes text to a stream  
C. It writes binary data  
D. It serializes objects  
**Answer:** B  
Explanation: TextWriter is an abstract class used to write a sequential series of characters to a stream.

**139. What is the purpose of the File.Delete() method?**  
A. To move a file  
B. To rename a file  
C. To delete a file from disk  
D. To archive a file  
**Answer:** C  
Explanation: File.Delete() permanently deletes the specified file from the file system.

**140. Which of the following is true about StreamWriter?**  
A. It reads binary data  
B. It writes characters to a stream  
C. It serializes objects  
D. It reads characters from a stream  
**Answer:** B  
Explanation: StreamWriter is used to write characters to a stream in a specific encoding.

**141. What is the purpose of the Task.FromResult() method?**  
A. To create a completed task with a result  
B. To cancel a task  
C. To delay a task  
D. To run a task in parallel  
**Answer:** A  
Explanation: Task.FromResult() creates a task that is already completed successfully with a specified result.

**142. Which of the following is used to define a custom attribute usage?**  
A. [AttributeUsage(AttributeTargets.All)]  
B. [CustomUsage]  
C. [AttributeDefine]  
D. [Usage]  
**Answer:** A  
Explanation: [AttributeUsage] specifies how a custom attribute can be applied.

**143. What is the purpose of the Thread.Sleep() method?**  
A. To terminate a thread  
B. To pause a thread for a specified time  
C. To restart a thread  
D. To block a task  
**Answer:** B  
Explanation: Thread.Sleep() pauses the current thread for a specified number of milliseconds.

**144. Which of the following is true about JsonSerializer.Deserialize<T>()?**  
A. It serializes an object  
B. It deserializes a JSON string into an object of type T  
C. It validates JSON  
D. It writes JSON to a file  
**Answer:** B  
Explanation: JsonSerializer.Deserialize<T>() converts a JSON string into an object of type T.

**145. What is the purpose of the Monitor.Exit() method?**  
A. To enter a critical section  
B. To release a lock on an object  
C. To create a thread  
D. To pause a thread  
**Answer:** B  
Explanation: Monitor.Exit() releases the lock on an object acquired by Monitor.Enter().

**146. Which of the following is true about BinaryFormatter in .NET 5+?**  
A. It is recommended for use  
B. It is obsolete and insecure  
C. It is used for JSON serialization  
D. It is used for XML serialization  
**Answer:** B  
Explanation: BinaryFormatter is considered insecure and is obsolete in .NET 5 and later.

**147. What is the purpose of the Directory.EnumerateFiles() method?**  
A. To delete files  
B. To return an array of file names  
C. To return an enumerable collection of file names  
D. To move files  
**Answer:** C  
Explanation: EnumerateFiles() returns an enumerable collection, which is more memory-efficient than GetFiles().

**148. Which of the following is true about Task.Yield()?**  
A. It blocks the current thread  
B. It forces the task to run synchronously  
C. It yields control back to the caller  
D. It cancels the task  
**Answer:** C  
Explanation: Task.Yield() yields control to the current context and schedules the continuation.

**149. What is the purpose of the Match.Groups property in Regex?**  
A. To return the entire match  
B. To return all matched groups  
C. To return the pattern  
D. To return the input string  
**Answer:** B  
Explanation: Match.Groups returns a collection of all matched groups in the regular expression.

**150. Which of the following is true about Stream.Flush()?**  
A. It closes the stream  
B. It clears the stream  
C. It writes buffered data to the underlying stream  
D. It deletes the stream  
**Answer:** C  
Explanation: Flush() ensures that all buffered data is written to the underlying device.

**151. What is the purpose of the Task.ConfigureAwait(false) method?**  
A. To block the thread  
B. To avoid capturing the current synchronization context  
C. To cancel the task  
D. To delay the task  
**Answer:** B  
Explanation: ConfigureAwait(false) is used to improve performance by not capturing the synchronization context.

**152. Which of the following is true about XmlDocument?**  
A. It is used for binary serialization  
B. It provides a DOM-based XML parser  
C. It is used for JSON parsing  
D. It is obsolete  
**Answer:** B  
Explanation: XmlDocument represents an XML document and allows DOM-style parsing and manipulation.

**153. What is the purpose of the Thread.Join() method?**  
A. To start a thread  
B. To pause a thread  
C. To wait for a thread to finish execution  
D. To cancel a thread  
**Answer:** C  
Explanation: Join() blocks the calling thread until the thread on which it is called has completed.

**154. Which of the following is true about FileStream.Position?**  
A. It returns the file size  
B. It sets the file name  
C. It gets or sets the current position within the stream  
D. It deletes the file  
**Answer:** C  
Explanation: Position gets or sets the current byte position in the stream.

**155. What is the purpose of the AggregateException class?**  
A. To handle multiple exceptions thrown in parallel tasks  
B. To group exceptions by type  
C. To serialize exceptions  
D. To log exceptions  
**Answer:** A  
Explanation: AggregateException is used to represent multiple exceptions thrown during parallel operations.

**156. Which of the following is true about TextReader.ReadLine()?**  
A. It reads a character  
B. It reads a line of characters  
C. It writes a line  
D. It reads binary data  
**Answer:** B  
Explanation: ReadLine() reads a line of characters from the input stream.

**157. What is the purpose of the Task.Delay() method?**  
A. To cancel a task  
B. To pause execution for a specified time  
C. To block the main thread  
D. To serialize a task  
**Answer:** B  
Explanation: Task.Delay() creates a task that completes after a specified time interval.

**158. Which of the following is true about DirectoryInfo.GetFiles()?**  
A. It deletes files  
B. It returns an array of FileInfo objects  
C. It returns file names as strings  
D. It moves files  
**Answer:** B  
Explanation: GetFiles() returns an array of FileInfo objects representing the files in a directory.

**159. What is the purpose of the RegexOptions.IgnoreCase flag?**  
A. To ignore whitespace  
B. To ignore case sensitivity  
C. To ignore special characters  
D. To ignore digits  
**Answer:** B  
Explanation: IgnoreCase makes the regular expression case-insensitive.

**160. Which of the following is true about Task.IsCompleted?**  
A. It starts a task  
B. It cancels a task  
C. It checks if a task has completed  
D. It blocks the task  
**Answer:** C  
Explanation: IsCompleted returns true if the task has finished executing.

**161. What is the purpose of the FileInfo.CopyTo() method?**  
A. To move a file  
B. To delete a file  
C. To copy a file to a new location  
D. To rename a file  
**Answer:** C  
Explanation: CopyTo() copies an existing file to a new file.

**162. Which of the following is true about ThreadPool?**  
A. It creates new threads manually  
B. It manages a pool of worker threads  
C. It is used for UI threads  
D. It is obsolete  
**Answer:** B  
Explanation: ThreadPool provides a pool of threads that can be used to execute tasks without creating new threads manually.

**163. What is the purpose of the Regex.Escape() method?**  
A. To remove special characters  
B. To escape special characters in a string  
C. To validate a pattern  
D. To split a string  
**Answer:** B  
Explanation: Escape() adds escape characters to special characters in a string so it can be used in a regex pattern.

**164. Which of the following is true about Stream.CanRead?**  
A. It checks if the stream is writable  
B. It checks if the stream supports reading  
C. It checks if the stream is closed  
D. It checks if the stream is binary  
**Answer:** B  
Explanation: CanRead indicates whether the stream supports reading.

**165. What is the purpose of the File.ReadAllText() method?**  
A. To read binary data from a file  
B. To read all text from a file into a single string  
C. To read a line from a file  
D. To read a file as a stream  
**Answer:** B  
Explanation: File.ReadAllText() reads the entire contents of a text file into a single string.

**166. Which of the following is true about Thread.IsAlive?**  
A. It starts a thread  
B. It checks if a thread has been aborted  
C. It checks if a thread is currently running or has not yet terminated  
D. It pauses a thread  
**Answer:** C  
Explanation: IsAlive returns true if the thread has been started and has not yet terminated.

**167. What is the purpose of the File.AppendText() method?**  
A. To overwrite a file  
B. To append binary data  
C. To open a file for appending text  
D. To delete a file  
**Answer:** C  
Explanation: File.AppendText() opens an existing file or creates a new one for appending UTF-8 encoded text.

**168. Which of the following is true about TaskCreationOptions.LongRunning?**  
A. It creates a short-lived task  
B. It hints that the task will be long-running and should not use the thread pool  
C. It cancels the task  
D. It delays the task  
**Answer:** B  
Explanation: LongRunning suggests that the task will run for a long time and may require a dedicated thread.

**169. What is the purpose of the Regex.Match().Success property?**  
A. To return the matched string  
B. To indicate whether the match was successful  
C. To return the number of matches  
D. To return the pattern  
**Answer:** B  
Explanation: Success is a boolean property that indicates whether the match was successful.

**170. Which of the following is true about Stream.CanWrite?**  
A. It checks if the stream is readable  
B. It checks if the stream supports writing  
C. It checks if the stream is closed  
D. It checks if the stream is binary  
**Answer:** B  
Explanation: CanWrite indicates whether the stream supports writing.

**171. What is the purpose of the File.OpenRead() method?**  
A. To open a file for writing  
B. To open a file for reading as a stream  
C. To delete a file  
D. To append to a file  
**Answer:** B  
Explanation: File.OpenRead() opens an existing file for reading as a FileStream.

**172. Which of the following is true about TaskContinuationOptions.OnlyOnFaulted?**  
A. It runs the continuation only if the task is canceled  
B. It runs the continuation only if the task completes successfully  
C. It runs the continuation only if the task faults (throws an exception)  
D. It runs the continuation regardless of task status  
**Answer:** C  
Explanation: OnlyOnFaulted ensures the continuation runs only if the antecedent task fails.

**173. What is the purpose of the Stream.Position property?**  
A. To get the length of the stream  
B. To get or set the current position within the stream  
C. To close the stream  
D. To flush the stream  
**Answer:** B  
Explanation: Position gets or sets the current byte offset in the stream.

**174. Which of the following is true about Directory.Exists()?**  
A. It creates a directory  
B. It deletes a directory  
C. It checks if a directory exists  
D. It renames a directory  
**Answer:** C  
Explanation: Directory.Exists() checks whether the specified directory exists.

**175. What is the purpose of the Task.WhenAny() method?**  
A. To wait for all tasks to complete  
B. To cancel all tasks  
C. To wait for any one of the tasks to complete  
D. To run tasks sequentially  
**Answer:** C  
Explanation: Task.WhenAny() returns a task that completes when any of the supplied tasks complete.

**176. Which of the following is true about RegexOptions.Multiline?**  
A. It treats the input as a single line  
B. It allows ^ and $ to match the start and end of each line  
C. It ignores case  
D. It disables pattern matching  
**Answer:** B  
Explanation: Multiline allows ^ and $ to match the start and end of each line, not just the start and end of the input.

**177. What is the purpose of the FileInfo.Delete() method?**  
A. To rename a file  
B. To move a file  
C. To delete a file  
D. To copy a file  
**Answer:** C  
Explanation: Delete() deletes the file represented by the FileInfo object.

**178. Which of the following is true about StreamReader.Peek()?**  
A. It reads the next character  
B. It reads the next line  
C. It returns the next character without consuming it  
D. It closes the stream  
**Answer:** C  
Explanation: Peek() returns the next available character without reading it from the stream.

**179. What is the purpose of the Task.IsCanceled property?**  
A. To cancel a task  
B. To check if a task has been canceled  
C. To delay a task  
D. To restart a task  
**Answer:** B  
Explanation: IsCanceled returns true if the task has acknowledged cancellation.

**180. Which of the following is true about Stream.CanSeek?**  
A. It checks if the stream supports reading  
B. It checks if the stream supports writing  
C. It checks if the stream supports seeking  
D. It checks if the stream is closed  
**Answer:** C  
Explanation: CanSeek indicates whether the stream supports seeking.

**181. What is the purpose of the File.SetAttributes() method?**  
A. To get file size  
B. To set file permissions  
C. To set file attributes like ReadOnly or Hidden  
D. To rename a file  
**Answer:** C  
Explanation: SetAttributes() sets the specified attributes for a file.

**182. Which of the following is true about Task.Status?**  
A. It returns a boolean  
B. It returns the task’s current state  
C. It cancels the task  
D. It delays the task  
**Answer:** B  
Explanation: Status returns the current state of the task (e.g., Running, Completed, Faulted).

**183. What is the purpose of the Regex.Unescape() method?**  
A. To escape special characters  
B. To remove escape characters from a string  
C. To validate a pattern  
D. To split a string  
**Answer:** B  
Explanation: Unescape() converts any escaped characters in a string back to their literal form.

**184. Which of the following is true about Stream.Length?**  
A. It returns the number of lines  
B. It returns the number of characters  
C. It returns the length of the stream in bytes  
D. It returns the number of words  
**Answer:** C  
Explanation: Length returns the total number of bytes in the stream.

**185. What is the purpose of the File.Move() method?**  
A. To copy a file  
B. To delete a file  
C. To move or rename a file  
D. To read a file  
**Answer:** C  
Explanation: Move() moves a file to a new location or renames it.

**186. Which of the following is true about Task.Exception?**  
A. It throws an exception  
B. It returns the exception thrown by the task  
C. It cancels the task  
D. It delays the task  
**Answer:** B  
Explanation: Exception returns the AggregateException that caused the task to fault.

**187. What is the purpose of the File.OpenWrite() method?**  
A. To open a file for reading  
B. To open a file for writing  
C. To delete a file  
D. To append to a file  
**Answer:** B  
Explanation: OpenWrite() opens a file for writing. If the file exists, it is overwritten.

**188. Which of the following is true about StreamReader.ReadToEnd()?**  
A. It reads a single character  
B. It reads a single line  
C. It reads all characters from the current position to the end  
D. It writes to the stream  
**Answer:** C  
Explanation: ReadToEnd() reads all characters from the current position to the end of the stream.

**189. What is the purpose of the File.SetCreationTime() method?**  
A. To get the creation time  
B. To set the creation time of a file  
C. To delete a file  
D. To rename a file  
**Answer:** B  
Explanation: SetCreationTime() sets the creation date and time of the specified file.

**190. Which of the following is true about Task.Result?**  
A. It cancels the task  
B. It returns the result of a completed task  
C. It delays the task  
D. It throws an exception  
**Answer:** B  
Explanation: Result retrieves the result of a completed task. If the task is not yet complete, it blocks until completion.

**191. What is the purpose of the File.SetLastWriteTime() method?**  
A. To get the last write time  
B. To set the last write time of a file  
C. To delete a file  
D. To rename a file  
**Answer:** B  
Explanation: SetLastWriteTime() sets the date and time the specified file was last written to.

**192. Which of the following is true about Stream.Seek()?**  
A. It reads from the stream  
B. It writes to the stream  
C. It sets the position within the stream  
D. It closes the stream  
**Answer:** C  
Explanation: Seek() sets the position within the current stream.

**193. What is the purpose of the FileInfo.MoveTo() method?**  
A. To copy a file  
B. To delete a file  
C. To move or rename a file  
D. To read a file  
**Answer:** C  
Explanation: MoveTo() moves a file to a new location or renames it.

**194. Which of the following is true about Task.RunSynchronously()?**  
A. It runs the task on a new thread  
B. It runs the task asynchronously  
C. It runs the task on the calling thread  
D. It cancels the task  
**Answer:** C  
Explanation: RunSynchronously() executes the task on the current thread immediately.

**195. What is the purpose of the Regex.Matches() method?**  
A. To return the first match  
B. To return all matches in a collection  
C. To replace all matches  
D. To split the input  
**Answer:** B  
Explanation: Matches() returns a collection of all matches found in the input string.

**196. Which of the following is true about StreamReader.BaseStream?**  
A. It returns the encoding  
B. It returns the underlying stream  
C. It returns the file name  
D. It returns the buffer size  
**Answer:** B  
Explanation: BaseStream gets the underlying stream associated with the StreamReader.

**197. What is the purpose of the FileInfo.OpenRead() method?**  
A. To open a file for writing  
B. To open a file for appending  
C. To open a file for reading  
D. To delete a file  
**Answer:** C  
Explanation: OpenRead() opens a file for reading and returns a FileStream.

**198. Which of the following is true about Task.Factory.ContinueWhenAll()?**  
A. It runs after any task completes  
B. It runs after all tasks complete  
C. It cancels all tasks  
D. It runs before tasks start  
**Answer:** B  
Explanation: ContinueWhenAll() creates a continuation task that executes when all specified tasks have completed.

**199. What is the purpose of the RegexOptions.Compiled flag?**  
A. To ignore case  
B. To compile the regex to MSIL for faster execution  
C. To disable pattern matching  
D. To match across lines  
**Answer:** B  
Explanation: Compiled compiles the regular expression to MSIL, improving performance for repeated use.

**200. Which of the following is true about StreamReader.CurrentEncoding?**  
A. It returns the file path  
B. It returns the current encoding used by the reader  
C. It returns the stream length  
D. It returns the buffer size  
**Answer:** B  
Explanation: CurrentEncoding gets the character encoding that the StreamReader is using.

**201. Which control is used to display a short message to the user in a Windows Form?**  
A. Label  
B. MessageBox  
C. TextBox  
D. AlertBox  
**Answer:** B  
Explanation: MessageBox.Show() is used to display a message dialog to the user.

**202. What is the purpose of the Dock property in a Windows Forms control?**  
A. To align the control to the center  
B. To attach the control to a specific edge or fill the container  
C. To float the control  
D. To hide the control  
**Answer:** B  
Explanation: Dock allows a control to be attached to an edge or fill its parent container.

**203. Which control allows users to select a value from a drop-down list?**  
A. ListBox  
B. ComboBox  
C. TextBox  
D. MenuStrip  
**Answer:** B  
Explanation: ComboBox provides a drop-down list from which users can select a value.

**204. What is the default layout manager in Windows Forms?**  
A. GridLayout  
B. FlowLayout  
C. Absolute positioning  
D. TableLayout  
**Answer:** C  
Explanation: Windows Forms uses absolute positioning by default, where controls are placed using coordinates.

**205. Which event is triggered when the user changes the text in a TextBox?**  
A. KeyPress  
B. TextChanged  
C. ValueChanged  
D. InputChanged  
**Answer:** B  
Explanation: TextChanged is triggered whenever the text in a TextBox changes.

**206. What is the purpose of the Enabled property of a control?**  
A. To make the control visible  
B. To allow or prevent user interaction  
C. To change the control’s color  
D. To resize the control  
**Answer:** B  
Explanation: Setting Enabled = false disables the control, preventing user interaction.

**207. Which control is used to display tabbed pages in a form?**  
A. TabControl  
B. Panel  
C. GroupBox  
D. MenuStrip  
**Answer:** A  
Explanation: TabControl allows multiple pages to be displayed in a tabbed interface.

**208. What is the purpose of the FormClosing event?**  
A. To cancel form loading  
B. To handle logic before the form is closed  
C. To close the form immediately  
D. To hide the form  
**Answer:** B  
Explanation: FormClosing is triggered before a form is closed, allowing cancellation or cleanup.

**209. Which control is best suited for displaying tabular data in Windows Forms?**  
A. ListBox  
B. DataGridView  
C. ComboBox  
D. TreeView  
**Answer:** B  
Explanation: DataGridView is used to display and edit tabular data.

**210. What is the purpose of the CheckedChanged event in a CheckBox?**  
A. To detect when the control is clicked  
B. To detect when the checked state changes  
C. To detect when the control is hovered  
D. To detect when the control is focused  
**Answer:** B  
Explanation: CheckedChanged is triggered when the Checked property of a CheckBox changes.

**211. What does Assembly.GetTypes() return?**  
A. All methods in the assembly  
B. All types defined in the assembly  
C. All namespaces in the assembly  
D. All properties in the assembly  
**Answer:** B  
Explanation: GetTypes() returns an array of all types defined in the assembly.

**212. What is the purpose of FieldInfo.SetValue()?**  
A. To get the value of a field  
B. To set the value of a field dynamically  
C. To delete a field  
D. To rename a field  
**Answer:** B  
Explanation: SetValue() sets the value of a field on a given object.

**213. Which method is used to get a constructor using reflection?**  
A. GetConstructor()  
B. GetMethod()  
C. GetCtor()  
D. GetNew()  
**Answer:** A  
Explanation: GetConstructor() retrieves a specific constructor of a type.

**214. What is the purpose of MemberInfo in reflection?**  
A. To represent a method only  
B. To represent any member (method, property, field, etc.)  
C. To represent a class  
D. To represent an attribute  
**Answer:** B  
Explanation: MemberInfo is the base class for accessing metadata about class members.

**215. Which method is used to check if a type has a specific attribute?**  
A. HasAttribute()  
B. IsDefined()  
C. ContainsAttribute()  
D. GetAttribute()  
**Answer:** B  
Explanation: IsDefined() checks whether a specific attribute is applied to a member.

**216. What does PropertyInfo.GetValue() do?**  
A. Sets the value of a property  
B. Gets the value of a property dynamically  
C. Deletes a property  
D. Creates a new property  
**Answer:** B  
Explanation: GetValue() retrieves the value of a property from an object.

**217. What is the purpose of BindingFlags.Static | BindingFlags.Public?**  
A. To access private instance members  
B. To access public static members  
C. To access protected methods  
D. To access constructors  
**Answer:** B  
Explanation: These flags are used to access public static members of a type.

**218. Which method is used to get all fields of a class using reflection?**  
A. GetAllFields()  
B. GetFields()  
C. GetFieldList()  
D. GetMembers()  
**Answer:** B  
Explanation: GetFields() returns an array of FieldInfo objects representing the fields.

**219. What is the purpose of Assembly.GetExecutingAssembly()?**  
A. To get the entry assembly  
B. To get the currently executing assembly  
C. To get the calling assembly  
D. To get the referenced assembly  
**Answer:** B  
Explanation: GetExecutingAssembly() returns the assembly that contains the code currently executing.

**220. Which method is used to invoke a constructor using reflection?**  
A. ConstructorInfo.Invoke()  
B. Type.New()  
C. Activator.NewInstance()  
D. MethodInfo.Create()  
**Answer:** A  
Explanation: ConstructorInfo.Invoke() is used to invoke a constructor dynamically.

**221. What is the purpose of the where T : class constraint in generics?**  
A. Restricts T to value types  
B. Restricts T to reference types  
C. Restricts T to interfaces  
D. Restricts T to enums  
**Answer:** B  
Explanation: where T : class ensures that T is a reference type.

**222. Which keyword allows runtime binding in C#?**  
A. var  
B. object  
C. dynamic  
D. typeof  
**Answer:** C  
Explanation: dynamic bypasses compile-time type checking and defers it to runtime.

**223. What is the purpose of the ?? operator in C#?**  
A. Null check  
B. Null-coalescing operator  
C. Null-conditional operator  
D. Ternary operator  
**Answer:** B  
Explanation: ?? returns the left-hand operand if it is not null; otherwise, it returns the right-hand operand.

**224. Which of the following allows you to define a method that accepts any type?**  
A. Overloading  
B. Inheritance  
C. Generics  
D. Delegates  
**Answer:** C  
Explanation: Generics allow methods and classes to operate on any data type.

**225. What is the purpose of the #if DEBUG directive?**  
A. To include code only in release builds  
B. To include code only in debug builds  
C. To define a constant  
D. To throw an exception  
**Answer:** B  
Explanation: Preprocessor directives like #if DEBUG conditionally compile code for debug builds.

**226. Which of the following is true about ExpandoObject?**  
A. It is statically typed  
B. It allows adding members at runtime  
C. It is used for serialization  
D. It is obsolete  
**Answer:** B  
Explanation: ExpandoObject allows dynamic addition of properties and methods at runtime.

**227. What is the purpose of the unsafe keyword in C#?**  
A. To disable exception handling  
B. To allow pointer operations  
C. To bypass type safety  
D. To suppress warnings  
**Answer:** B  
Explanation: unsafe enables pointer operations in C#.

**228. Which of the following is a valid pointer declaration in C#?**  
A. int\* p;  
B. pointer<int> p;  
C. int p\*;  
D. int& p;  
**Answer:** A  
Explanation: In unsafe code, int\* p; declares a pointer to an integer.

**229. What is the purpose of the when keyword in exception handling?**  
A. To catch only specific exception types  
B. To filter exceptions based on a condition  
C. To rethrow an exception  
D. To log exceptions  
**Answer:** B  
Explanation: when is used to apply a condition to a catch block.

**230. Which of the following is true about covariance in generics?**  
A. Allows assignment from base to derived  
B. Allows assignment from derived to base  
C. Only works with value types  
D. Only works with methods  
**Answer:** B  
Explanation: Covariance allows a more derived type to be assigned to a less derived generic interface.

**231. What is the purpose of the let keyword in LINQ?**  
A. To filter data  
B. To join data  
C. To introduce a new range variable  
D. To sort data  
**Answer:** C  
Explanation: let introduces a new variable in a LINQ query.

**232. Which of the following is true about into in LINQ?**  
A. It ends a query  
B. It creates a continuation of a query  
C. It groups data  
D. It filters data  
**Answer:** B  
Explanation: into allows continuation of a query after a group or join.

**233. What is the purpose of the default(T) expression in generics?**  
A. Returns null for all types  
B. Returns the default value for type T  
C. Returns the maximum value of T  
D. Returns the type name  
**Answer:** B  
Explanation: default(T) returns the default value for the type T (e.g., 0 for int, null for reference types).

**234. Which of the following is true about EventHandler<T>?**  
A. It is a delegate for static events  
B. It is a generic delegate for event handling  
C. It is obsolete  
D. It is used only in WPF  
**Answer:** B  
Explanation: EventHandler<T> is a generic delegate used for strongly typed event data.

**235. What is the purpose of the sealed keyword in C#?**  
A. To prevent a class from being instantiated  
B. To prevent a class from being inherited  
C. To prevent a method from being overridden  
D. Both B and C  
**Answer:** D  
Explanation: sealed prevents inheritance of classes and overriding of methods.

**236. Which of the following is true about static constructors?**  
A. They can take parameters  
B. They are called explicitly  
C. They are called automatically before any static member is accessed  
D. They are inherited  
**Answer:** C  
Explanation: Static constructors are called automatically before any static member is accessed.

**237. What is the purpose of an indexer in C#?**  
A. To define a property  
B. To allow objects to be indexed like arrays  
C. To define a constructor  
D. To define a delegate  
**Answer:** B  
Explanation: Indexers allow objects to be accessed using array-like syntax.

**238. Which of the following is true about object initializers?**  
A. They require a constructor  
B. They can only be used with structs  
C. They allow setting properties at the time of object creation  
D. They are obsolete  
**Answer:** C  
Explanation: Object initializers allow setting properties during object creation without explicitly calling a constructor.

**239. What is the purpose of nameof() in C#?**  
A. To get the type of a variable  
B. To get the name of a variable or member as a string  
C. To get the value of a variable  
D. To get the namespace  
**Answer:** B  
Explanation: nameof() returns the name of a variable, type, or member as a string.

**240. Which of the following is true about Nullable<T>?**  
A. It can only be used with reference types  
B. It allows value types to be null  
C. It is obsolete  
D. It is used for boxing  
**Answer:** B  
Explanation: Nullable<T> allows value types like int, bool, etc., to represent null values.

**241. What is the purpose of the null-conditional operator ?.?**  
A. To throw an exception if null  
B. To skip execution if the object is null  
C. To cast to nullable  
D. To compare two objects  
**Answer:** B  
Explanation: ?. allows safe access to members and methods without throwing a NullReferenceException.

**242. Which of the following is true about typeof() in C#?**  
A. It returns the instance of a class  
B. It returns the name of a class  
C. It returns the Type object for a class  
D. It returns the namespace  
**Answer:** C  
Explanation: typeof() returns the System.Type object for a given type.

**243. What is the purpose of is keyword in C#?**  
A. To compare values  
B. To check type compatibility  
C. To cast types  
D. To define interfaces  
**Answer:** B  
Explanation: is checks if an object is compatible with a given type.

**244. Which of the following is true about as keyword in C#?**  
A. It throws an exception on failure  
B. It performs a safe cast and returns null if it fails  
C. It is used for boxing  
D. It is used for inheritance  
**Answer:** B  
Explanation: as performs a safe cast and returns null if the cast fails.

**245. What is the purpose of nameof() in exception messages?**  
A. To log values  
B. To avoid hardcoding member names  
C. To throw exceptions  
D. To serialize objects  
**Answer:** B  
Explanation: nameof() helps avoid hardcoding strings, making code more maintainable and refactor-safe.

**246. Which of the following is true about params keyword?**  
A. It allows passing a fixed number of arguments  
B. It allows passing a variable number of arguments  
C. It is used for optional parameters  
D. It is used for named arguments  
**Answer:** B  
Explanation: params allows a method to accept a variable number of arguments.

**247. What is the purpose of default literal in C# 7.1+?**  
A. To return null  
B. To return the default value of a type without specifying the type  
C. To throw an exception  
D. To define a constant  
**Answer:** B

**248. What is the purpose of the in keyword in generic type parameters?**  
A. It specifies a type constraint  
B. It enables covariance  
C. It enables contravariance  
D. It defines a default value  
**Answer:** C  
**Explanation:** The in keyword is used to declare contravariant generic type parameters, allowing a method to accept arguments of less derived types.

**249. Which of the following is true about Span<T> in C#?**  
A. It is used for asynchronous programming  
B. It allows safe, efficient access to contiguous memory  
C. It is used for serialization  
D. It is obsolete in .NET Core  
**Answer:** B  
**Explanation:** Span<T> provides a type-safe and memory-safe representation of contiguous memory, useful for performance-critical applications.

**250. What is the purpose of the stackalloc keyword in C#?**  
A. To allocate memory on the heap  
B. To allocate memory on the stack  
C. To allocate memory in the GC  
D. To allocate memory in unmanaged code  
**Answer:** B  
**Explanation:** stackalloc is used to allocate a block of memory on the stack, typically for performance-sensitive scenarios involving value types.