**MCQ**

**Chapter 15:**

[The correct answer for each question is indicated by a http://highered.mheducation.com/olcweb/styles/v2_glencoe/images/correct.gif]

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| **1** | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | http://highered.mheducation.com/olcweb/styles/shared/spacer.gifWhich of the following statements best describes the relationship between patterns and frameworks? | |
|  | | http://highered.mheducation.com/olcweb/styles/v2_glencoe/images/correct.gif | **A)** | **A framework may involve many patterns.** |
|  | |  | **B)** | A framework is more abstract than a pattern. |
|  | |  | **C)** | A pattern may incorporate one or more frameworks. |
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| **2** | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | http://highered.mheducation.com/olcweb/styles/shared/spacer.gifWhich of the following best describes a pattern catalogue? | |
|  | |  | **A)** | It is list of all the types of patterns that exist. |
|  | |  | **B)** | It is a list of all the patterns. |
|  | | http://highered.mheducation.com/olcweb/styles/v2_glencoe/images/correct.gif | **C)** | **It is a group of related patterns that may be used individually or together.** |
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| **3** | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | http://highered.mheducation.com/olcweb/styles/shared/spacer.gifSeveral key principles underlie the use of patterns. Which of the following is not a key principle involved in the use of patterns? | |
|  | |  | **A)** | Abstraction. |
|  | |  | **B)** | Separation of concerns. |
|  | | http://highered.mheducation.com/olcweb/styles/v2_glencoe/images/correct.gif | **C)** | **Conformance testing.** |
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| **4** | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | http://highered.mheducation.com/olcweb/styles/shared/spacer.gifWhich of the following is not a non-functional property of a software architecture? | |
|  | |  | **A)** | Changeability. |
|  | |  | **B)** | Reliability. |
|  | | http://highered.mheducation.com/olcweb/styles/v2_glencoe/images/correct.gif | **C)** | **Conformance to requirements.** |
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| **5** | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | http://highered.mheducation.com/olcweb/styles/shared/spacer.gifWhich of the following statements best describes a pattern template? | |
|  | |  | **A)** | A pattern template constrains the structure of the solution. |
|  | | http://highered.mheducation.com/olcweb/styles/v2_glencoe/images/correct.gif | **B)** | **A pattern template determines the style and structure of the pattern description.** |
|  | |  | **C)** | A pattern template is used to control the use a pattern. |
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| **6** | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | http://highered.mheducation.com/olcweb/styles/shared/spacer.gifA pattern is normally described in the format of a pattern template. Which of the following statements best describes the forces of a pattern? | |
|  | | http://highered.mheducation.com/olcweb/styles/v2_glencoe/images/correct.gif | **A)** | **The forces embody the constraints that must be addressed by the solution.** |
|  | |  | **B)** | The forces describe why it is important to find a solution to the problem |
|  | |  | **C)** | The forces are the constraints that solution is unable to resolve. |
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| **7** | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | http://highered.mheducation.com/olcweb/styles/shared/spacer.gifA pattern is normally described in the format of a pattern template. Which of the following statements best describes the context of a pattern? | |
|  | |  | **A)** | The context is another term for the type of application where the pattern can be used. |
|  | |  | **B)** | The context is the software development environment that is being used. |
|  | | http://highered.mheducation.com/olcweb/styles/v2_glencoe/images/correct.gif | **C)** | **The context represents the circumstances or the preconditions that must be addressed by the solution.** |
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| **8** | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | http://highered.mheducation.com/olcweb/styles/shared/spacer.gifA pattern includes a solution. Which of the following best describes a pattern solution? | |
|  | |  | **A)** | The solution describes the static relationships amongst the elements of the pattern. |
|  | |  | **B)** | The solution describes the dynamic relationships amongst the elements of the pattern. |
|  | | http://highered.mheducation.com/olcweb/styles/v2_glencoe/images/correct.gif | **C)** | **A solution should resolve all the forces in a given context.** |
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| **9** | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | http://highered.mheducation.com/olcweb/styles/shared/spacer.gifA pattern includes a solution. Which of the following best describes a pattern solution? | |
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|  | | http://highered.mheducation.com/olcweb/styles/v2_glencoe/images/correct.gif | **C)** | **A solution should resolve all the forces in a given context.** |
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| **10** | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | http://highered.mheducation.com/olcweb/styles/shared/spacer.gifWhat is meant by the term 'rule of three'? | |
|  | |  | **A)** | No more that three patterns may be used together. |
|  | | http://highered.mheducation.com/olcweb/styles/v2_glencoe/images/correct.gif | **B)** | **A problem-solution pair should have been used at least 3 times before they can be called a pattern.** |
|  | |  | **C)** | A pattern should be used no more than three times in an application. |
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| **11** | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | http://highered.mheducation.com/olcweb/styles/shared/spacer.gifWhich of the following is not one of the categories defined for the GOF patterns? | |
|  | |  | **A)** | Creational. |
|  | | http://highered.mheducation.com/olcweb/styles/v2_glencoe/images/correct.gif | **B)** | **Static.** |
|  | |  | **C)** | Behavioural. |
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| **12** | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | http://highered.mheducation.com/olcweb/styles/shared/spacer.gifWhich of the following best describes an advantage of the Singleton pattern? | |
|  | | http://highered.mheducation.com/olcweb/styles/v2_glencoe/images/correct.gif | **A)** | **The pattern can be used to ensure that no more than a fixed number of instances of the Singleton class are created.** |
|  | |  | **B)** | Using the pattern always makes a system easier to maintain. |
|  | |  | **C)** | When the pattern is used global data can be accessed more quickly. |
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| **13** | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | http://highered.mheducation.com/olcweb/styles/shared/spacer.gifWhich of the following statements is true about the Composite pattern? | |
|  | |  | **A)** | The pattern must be used in conjunction with the Singleton pattern. |
|  | | http://highered.mheducation.com/olcweb/styles/v2_glencoe/images/correct.gif | **B)** | **The pattern makes it easier to add new leaf subclasses.** |
|  | |  | **C)** | The pattern makes it easier to add new operations to each of the leaf subclasses. |
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| **14** | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | http://highered.mheducation.com/olcweb/styles/shared/spacer.gifWhich of the following statements is true about the Composite pattern? | |
|  | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | **A)** | The pattern must be used in conjunction with the Singleton pattern. |
|  | | http://highered.mheducation.com/olcweb/styles/v2_glencoe/images/correct.gif | **B)** | **The pattern makes it easier to add new leaf subclasses.** |
|  | |  | **C)** | The pattern makes it easier to add new operations to each of the leaf subclasses. |
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| **15** | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | http://highered.mheducation.com/olcweb/styles/shared/spacer.gifWhich of the following best describes when to use the State pattern? | |
|  | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | **A)** | The pattern may be used when a class has many states. |
|  | |  | **B)** | The pattern may be used when a class has many operations. |
|  | | http://highered.mheducation.com/olcweb/styles/v2_glencoe/images/correct.gif | **C)** | **The pattern may be used when an object appears to change class at run-time.** |
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| **16** | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | http://highered.mheducation.com/olcweb/styles/shared/spacer.gifSome classes may be pure state classes when the State pattern is used. Which of following best describes a pure state class? | |
|  | | http://highered.mheducation.com/olcweb/styles/v2_glencoe/images/correct.gif | **A)** | **It has no attributes for any particular context object.** |
|  | |  | **B)** | It can only have one state. |
|  | |  | **C)** | None of its states are composite states. |
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| **17** | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | http://highered.mheducation.com/olcweb/styles/shared/spacer.gifWhich of the following is not an advantage of the State pattern? | |
|  | |  | **A)** | State behaviour is localized. |
|  | | http://highered.mheducation.com/olcweb/styles/v2_glencoe/images/correct.gif | **B)** | **The Singleton pattern may be used with the State pattern.** |
|  | |  | **C)** | State transitions are made explicit. |
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| **18** | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | http://highered.mheducation.com/olcweb/styles/shared/spacer.gifWhich of the following statements about the state and Singleton patterns is true? | |
|  | |  | **A)** | The State pattern must be used with the Singleton pattern. |
|  | |  | **B)** | The Singleton pattern may not be used with the State pattern. |
|  | | http://highered.mheducation.com/olcweb/styles/v2_glencoe/images/correct.gif | **C)** | **The Singleton pattern may be used for pure state classes.** |
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| **19** | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | http://highered.mheducation.com/olcweb/styles/shared/spacer.gifWhich of the following is not an issue that should be considered before using a pattern? | |
|  | |  | **A)** | If a simpler solution exists it should be used in preference to the pattern. |
|  | | http://highered.mheducation.com/olcweb/styles/v2_glencoe/images/correct.gif | **B)** | **It is preferable to use patterns by themselves.** |
|  | |  | **C)** | It is important that the context of the problem is consistent with the context of the pattern. |
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| **20** | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | http://highered.mheducation.com/olcweb/styles/shared/spacer.gifWhich of the following statements is most appropriate when using a pattern during information systems development? | |
|  | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | **A)** | The pattern must be used without any changes to its overall structure. |
|  | | http://highered.mheducation.com/olcweb/styles/v2_glencoe/images/correct.gif | **B)** | **The pattern should be implemented with names that are meaningful in the context of the application.** |
|  | |  | **C)** | The names of the classes in the pattern should be given the general names from the pattern so that their roles are unambiguous. |
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