**MCQ**

**Chapter 14:**

[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 is not part of detailed design? | |
|  | |  | **A)** | Screen and window layouts in the form of user interface classes. |
|  | | http://highered.mheducation.com/olcweb/styles/v2_glencoe/images/correct.gif | **B)** | **Allocation of sub-systems to processors.** |
|  | |  | **C)** | Allocation of responsibilities to classes. |
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| **2** | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | http://highered.mheducation.com/olcweb/styles/shared/spacer.gifWhich combination of cohesion and coupling is desirable in a design? | |
|  | | http://highered.mheducation.com/olcweb/styles/v2_glencoe/images/correct.gif | **A)** | **High cohesion and low coupling.** |
|  | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | **B)** | High cohesion and high coupling. |
|  | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | **C)** | Low cohesion and high coupling. |
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| **3** | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | http://highered.mheducation.com/olcweb/styles/shared/spacer.gifGood coupling is best characterised by which of the following? | |
|  | | http://highered.mheducation.com/olcweb/styles/v2_glencoe/images/correct.gif | **A)** | **Keeping the number of message types between objects to a minimum.** |
|  | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | **B)** | Ensuring that sub-classes are not strongly linked to their superclass. |
|  | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | **C)** | Ensuring that operations in the same class are linked. |
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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 a beneficial consequence of good cohesion in a class? | |
|  | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | **A)** | The attributes in the class will only be accessed by the operations of that class. |
|  | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | **B)** | The class will exhibit high levels of encapsulation. |
|  | | http://highered.mheducation.com/olcweb/styles/v2_glencoe/images/correct.gif | **C)** | **The operations in the class will be easier to maintain.** |
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| **5** | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | http://highered.mheducation.com/olcweb/styles/shared/spacer.gifThe Liskov Substitution Principle is best described by which of the following? | |
|  | | http://highered.mheducation.com/olcweb/styles/v2_glencoe/images/correct.gif | **A)** | **A derived object may be treated as if it is the base object.** |
|  | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | **B)** | A derived object should be replaced by its base object. |
|  | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | **C)** | Derived objects should be used instead of base objects. |
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| **6** | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | http://highered.mheducation.com/olcweb/styles/shared/spacer.gifThe assignment of responsibilities to classes has to be addressed in detailed design. Which of following best describes the assignment of responsibilities? | |
|  | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | **A)** | Assigning responsibilities ensures that all classes have the same amount of responsibility. |
|  | | http://highered.mheducation.com/olcweb/styles/v2_glencoe/images/correct.gif | **B)** | **Assigning responsibilities should maximise the potential for reuse.** |
|  | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | **C)** | Assigning responsibilities considers what each member of the project team should do. |
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| **7** | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | http://highered.mheducation.com/olcweb/styles/shared/spacer.gifWhen objects are being designed in detail the signature of each operation has to be specified. Which of the following statements is consistent with the term operation signature? | |
|  | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | **A)** | Each operation in a class has the same signature. |
|  | | http://highered.mheducation.com/olcweb/styles/v2_glencoe/images/correct.gif | **B)** | **The operation name and the number of parameters are part of the operation signature**. |
|  | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | **C)** | A class may not have two operations with the same name. |
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| **8** | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | http://highered.mheducation.com/olcweb/styles/shared/spacer.gifEncapsulation is best enforced by which of the following decisions regarding object visibility? | |
|  | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | **A)** | All attributes and operations are private. |
|  | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | **B)** | All attributes are public and all operations are private. |
|  | | http://highered.mheducation.com/olcweb/styles/v2_glencoe/images/correct.gif | **C)** | **All attributes are private and public operations are kept to a minimum.** |
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| **9** | | 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 object visibility? | |
|  | | http://highered.mheducation.com/olcweb/styles/v2_glencoe/images/correct.gif | **A)** | **The most limited form of visibility is private.** |
|  | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | **B)** | Attributes that are protected may not be changed at all. |
|  | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | **C)** | Package visibility is concerned with the visibility of a component with a system. |
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| **10** | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | http://highered.mheducation.com/olcweb/styles/shared/spacer.gifA class may contain derived attributes. Which of the following statements is true? | |
|  | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | **A)** | Using derived attributes always improves performance. |
|  | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | **B)** | Derived attributes can only be derived from attributes in the same class. |
|  | | http://highered.mheducation.com/olcweb/styles/v2_glencoe/images/correct.gif | **C)** | **Using derived attributes may introduce the need to maintain consistency between attribute values.** |
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| **11** | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | http://highered.mheducation.com/olcweb/styles/shared/spacer.gifWhat is an interface in UML? | |
|  | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | **A)** | It describes boundary classes. |
|  | | http://highered.mheducation.com/olcweb/styles/v2_glencoe/images/correct.gif | **B)** | **It describes an interface that a class may offer to another class.** |
|  | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | **C)** | It describes the human-computer interface. |
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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 statements best describes a UML interface? | |
|  | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | **A)** | It is the external view of a class. |
|  | | http://highered.mheducation.com/olcweb/styles/v2_glencoe/images/correct.gif | **B)** | **It contains no internal structure, it has no attributes and the implementation of the operations is not defined.** |
|  | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | **C)** | It contains a subset of the operations offered by a class together with their implementation. |
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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 best describes the task of designing associations? | |
|  | | http://highered.mheducation.com/olcweb/styles/v2_glencoe/images/correct.gif | **A)** | **It is concerned with how links between objects should be implemented.** |
|  | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | **B)** | Its main focus is determining the multiplicity of the associations. |
|  | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | **C)** | It is concerned with specifying operations that may use the links between objects. |
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| **14** | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | http://highered.mheducation.com/olcweb/styles/shared/spacer.gifThe implementation of a one-to-one two-way association is best achieved by which of the following? | |
|  | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | **A)** | Two collection classes. |
|  | | http://highered.mheducation.com/olcweb/styles/v2_glencoe/images/correct.gif | **B)** | **Placing the object identifier of each class in the other class.** |
|  | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | **C)** | Placing an object identifier of one class in the other. |
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| **15** | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | http://highered.mheducation.com/olcweb/styles/shared/spacer.gifHow many collection classes could sensibly be used to implement a two-way many-to-many association? | |
|  | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | **A)** | Two or more. |
|  | | http://highered.mheducation.com/olcweb/styles/v2_glencoe/images/correct.gif | **B)** | **Two.** |
|  | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | **C)** | One. |
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| **16** | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | http://highered.mheducation.com/olcweb/styles/shared/spacer.gifWhat does an arrowhead at the end of an association mean? | |
|  | | http://highered.mheducation.com/olcweb/styles/v2_glencoe/images/correct.gif | **A)** | **It shows that the association may be navigated in the direction of the arrowhead.** |
|  | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | **B)** | It shows that the association is owned by the class to which the arrowhead points. |
|  | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | **C)** | It shows that the association cannot be navigated in the other direction. |
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| **17** | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | http://highered.mheducation.com/olcweb/styles/shared/spacer.gifIf there is a dependency constraint between two or more attributes which of the following statements applies? | |
|  | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | **A)** | The value of none of the attributes should be changed. |
|  | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | **B)** | If the value of one of the attributes is changed then all the others must be updated by one or more synchronizing operations. |
|  | | http://highered.mheducation.com/olcweb/styles/v2_glencoe/images/correct.gif | **C)** | **Any change to the value of any of the attributes may require the other dependent attributes to be updated by one or more synchronizing operations.** |
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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 best describes the application of referential integrity during object design? | |
|  | | http://highered.mheducation.com/olcweb/styles/v2_glencoe/images/correct.gif | **A)** | **An object may only refer to another object if they share a link.** |
|  | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | **B)** | When an object is deleted all objects to which it refers must be deleted. |
|  | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | **C)** | Referential integrity only applies for one-to-one associations. |
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| **19** | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | http://highered.mheducation.com/olcweb/styles/shared/spacer.gifDomain integrity is best described by which of the following? | |
|  | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | **A)** | It ensures that each attribute is only used in the correct application domain. |
|  | | http://highered.mheducation.com/olcweb/styles/v2_glencoe/images/correct.gif | **B)** | **It ensures that attributes only hold permissible values.** |
|  | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | **C)** | It ensures that an object identifier in an object is actually referring to an object that exists. |
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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 is an example of a domain integrity constraint? | |
|  | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | **A)** | The sum of the weeklyPay and bonusPay attributes must not exceed the maxPay attribute. |
|  | | http://highered.mheducation.com/olcweb/styles/v2_glencoe/images/correct.gif | **B)** | **The weeklyPay attribute must be a non-negative number to two decimal places.** |
|  | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | **C)** | The bonusPay attribute must be zero if weeklyPay attribute is zero. |
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| **21** | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | http://highered.mheducation.com/olcweb/styles/shared/spacer.gifWhich of the following is factors does not constrain algorithm design? | |
|  | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | **A)** | The cost of implementation. |
|  | | http://highered.mheducation.com/olcweb/styles/shared/spacer.gif | **B)** | The requirements for accuracy. |
|  | | http://highered.mheducation.com/olcweb/styles/v2_glencoe/images/correct.gif | **C)** | **The number of operations in a class.** |
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