Engineering
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Course title Number:
CSE- 223 Programming -2
2nd level
Time allowed: 1 Hour

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CSE-223برمجة-2
المستوى الثاني
الزمن: 1 ساعة

الامتحان مكون من 20 سؤال كل منها يساوي درجة واحدة

اجب على جميع الاسئلة بتظليل الدائرة المقابلة لاختيارك في ورقة الاجابة تظليلا كاملا

في حالة تظليل أكثر من اختيار واحد للسؤال تعتبر الاجابة خاطئة ـ لا تستخدم ظهر ورقة الاجابة أو هامشها في كتابة أي شيء

يمنع منعا باتا استخدام الآلة الحاسبة أو التليفون المحمول أو الأجهزة اللوحية ويلغى امتحان الطالب في هذه الحالة مباشرة

Answer All 20 Questions. Choose between A, B, C, D, and E

1. In UML 2.2 standard, the best diagram to describe the behavior of a system is _____
   a. the sequence diagram
   b. the class diagram
   c. the state diagram
   d. the deployment diagram
   e. the profile diagram

2. In order to create a new object from an object previously designed from scratch, the best design pattern to use would be
   a. Object pool
   b. Factory
   c. Cache Management
   d. Prototype
   e. Adapter

3. The relationship between an invoice and the lines in an invoice is:
   a. One-to-one
   b. One-to-many
   c. Many-to-many
   d. No relation
   e. None of the above

4. Wizards usually use the following creational design pattern:
   a. The builder because the wizard uses complicated logic to configure the object.
   b. The Prototype since the wizard is designed once and executed several times.
   c. The factory since the type of the object is defined during the start of the wizard
   d. The object pool since the system will create many user-defined objects using the wizard.
   e. The wizard design pattern as the names implies.

5. In order to guarantee that no one copies the URL from a user browser and use it to hijac the session on another computer, the system installs a cookie at the web browser of th client and couples it to the session id. With each incoming request, the system has

object that intercepts the call and makes sure that the http request is coming from the same web browser. If this is true, the request is served otherwise the system returns an error message and logs out the user. This object (or group of objects) follow(s) the design pattern

    a. Decorator
    b. Visitor
    c. Proxy
    d. Factory
    e. Prototype

6. Creating a new session for a newly logging user is resource intensive. Also, the system wants to limit the maximum number of concurrent users to 1000. The best way to achieve this target is to manage the session objects using the following design pattern:

    a. Proxy
    b. Observer
    c. Object pool
    d. Cache Management
    e. Linked list

7. In general, what is the drawback of the object pool design pattern?

    a. The programmer must manage the release of resources
    b. The programmer must implement a lot of small classes that confuse the reader maintaining the code later-on
    c. The object pool is slow
    d. The object pool consumes lots of memory
    e. The object pool has no drawbacks

8. If we decide to have a tablet version of an application in addition to the web-based version, the MVC would make this extension easier because:

    a. MVC is based on Swing, which is available on tablet devices.
    b. the view and controller classes can be reused, only the model classes must be newly implemented.
    c. the model and view classes can be reused, only the controller classes must be newly implemented.
    d. the model and controller classes can be reused, only the view classes must be newly implemented.
    e. MVC will not make things easier because it is hard to debug

9. State one unhappy case in the modelling of an application.

    a. The server gets a hardware failure.
    b. The UI looks messy and bad.
    c. The user gives in a wrong combination of username and password.
    d. The user configures an object to its maximum configuration.
    e. The user orders a palace.

10. Java Package containing lots of abstract classes should:

    a. Change regularly
    b. Not change often
    c. Contain lots of concrete classes
    d. Contain all concrete classes depending on the abstract classes in the same package

e. Take long time to compile.

11. Which of the following is correct about Factory design pattern?
   a. This type of design pattern comes under creational pattern.
   b. Factory pattern creates object without exposing the creation logic to the client.
   c. Factory pattern refers to newly created object using a common interface.
   d. All of the above.
   e. a. and b. only

12. Which of the following pattern is used when we want to pass data with multiple attributes in one shot from client to server?
   a. Factory Pattern
   b. Abstract Factory Pattern
   c. Singleton Pattern
   d. Prototype
   e. None of the above

13. Integer.valueOf is an example of
   a. Abstract Factory Pattern
   b. Factory Pattern
   c. Pototype
   d. Singleton Pattern
   e. JAVA unique built-in implementation of type conversion

14. UML sequence diagram represent is
   a. Useful to find missing objects.
   b. Time consuming to build
   c. Users and objects represented by vertical lines
   d. 1 or more of the above
   e. Exactly 2 of a, b, and c

15. The benefits of Dependency Injection are:
   a. Easier unit testing
   b. The object doesn't need to know implementation details of its dependency
   c. Dependencies have to be injected through the constructor.
   d. Exactly 2 of the above
   e. None of the above

16. A proxy is called a protection proxy
   a. when you have a heavyweight service object that wastes system resources by being always up, even though you only need it from time to time.
   b. when you want only specific clients to be able to use the service object
   c. when the service object is located on a remote server.
   d. when you need to cache results of client requests and manage the life cycle of this cache, especially
   e. All of the above

17. The abstract factory is similar to the Dependency Injection (DI)
   a. Since in both your code is still actually responsible for creating objects.
   b. Since the Dependency Injection is a framework to implement abstract Factory

c. In both DI and abstract Factory, you outsource that responsibility to another class or a framework,
d. Both are some sort of abstract architectural principal
e. None of the above

18. The following code

behavior ⟹ State

```java
public class Person {

    private String name;
    private String gender;
    private String maritalStatus;

    public Person(String name, String gender, String maritalStatus){
        this.name = name;
        this.gender = gender;
        this.maritalStatus = maritalStatus;
    }

    public String getName() {
        return name;
    }
    public String getGender() {
        return gender;
    }
    public String getMaritalStatus() {
        return maritalStatus;
    }
}
```
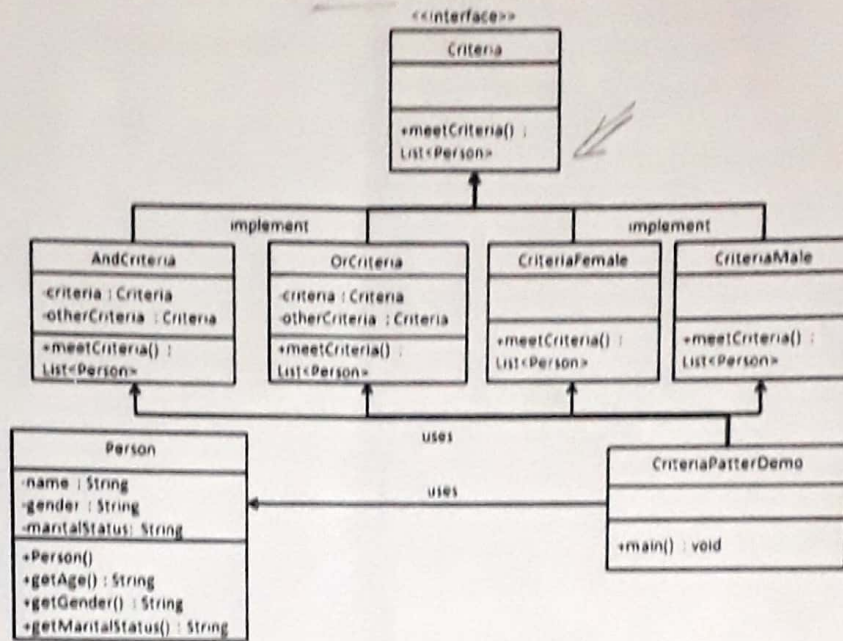
implements the:
a. Filter design pattern
b. Immutable design pattern
c. Read-only interface design pattern
d. Delegation design pattern
e. None of the above

19. The object pool design pattern contains:
a. Immutable design pattern
b. Singleton design pattern
c. Marker interface design pattern
d. Proxy design pattern
e. None of the above

class

20. The following is the UML sequence diagram of the:

<<interface>>
Criteria

+meetCriteria() :
List<Person>

implement   implement

AndCriteria	OrCriteria	CriteriaFemale	CriteriaMale
criteria : Criteria	criteria : Criteria		
otherCriteria : Criteria	otherCriteria : Criteria		
+meetCriteria() : List<Person>	+meetCriteria() : List<Person>	+meetCriteria() : List<Person>	+meetCriteria() : List<Person>

uses

Person
-name : String
-gender : String
-maritalStatus: String
+Person()
+getAge() : String
+getGender() : String
+getMaritalStatus() : String

uses

CriteriaPatterDemo
+main() : void

a. Filter design pattern
b. Composite design pattern
c. Abstract Factory design pattern
d. Builder design pattern
e. None of the above

GOOD LUCK