Quiz 6 (November 27, 2020)

Total points 14/18 ?

Write your name and ID correctly.
There are 18 questions in this quiz. Each question carries 1 mark. The total time duration for the quiz is 30 minutes. Answer the questions and submit your responses.

The respondent's email address (**f20181119@pilani.bits-pilani.ac.in**) was recorded on submission of this form.

0 of 0 points

Name *

Shreyas Bhat Kera

ID *

2018A7PS1119P

Questions 1-18   14 of 18 points

Which of the following languages support for implicit object deallocation for   0/1
storage reclamation?

○ Smalltalk

○ C++ and Java

○ C++

○ None of these

○ Java, C++ and Smalltalk

◉ Java

○ Java and Smalltalk

○ C++ and Smalltalk

Correct answer

◉ Java and Smalltalk

The class instance record maintains information about   0/1

○ none of these

○ dynamically bound methods

○ statically bound methods

◉ both statically bound and dynamically bound methods

Correct answer

◉ dynamically bound methods

Which of the following statements are correct? (1) The static binding is faster   1/1
than dynamic binding (2) Smalltalk supports static binding only. (3) Smalltalk
supports dynamic binding only. (4) Dynamic binding in C++ is faster than that
in Smalltalk.

○ Statement 3 only

○ Statements 1 and 4

◉ Statements 1, 3 and 4

○ Statements 2 and 4

○ None of these

Consider the following logic program written in Prolog. What is the unifier for 1/1
the query posed as ?- likes(sam, What), likes(john, What), likes(tom, What). in
Prolog? [The first question mark above is the command line prompt of Prolog]

```
1 likes(sam, Food) :- indian(Food), mild(Food).
2 likes(sam, Food) :- chinese(Food).
3 likes(sam, Food) :- italian(Food).
4 likes(john, Food) :- chinese(Food), spicy(Food).
5 likes(john, Food) :- italian(Food), spicy(Food).
6 likes(tom, Food) :- indian(Food), spicy(Food).
7 likes(tom, Food) :- italian(Food), spicy(Food).
8
9 indian(curry).
10 indian(dahl).
11 indian(tandoori).
12 indian(kurma).
13 mild(dahl).
14 mild(tandoori).
15 mild(pizza).
16 spicy(chow_mein).
17 spicy(kurma).
18 spicy(spaghetti).
19 spicy(sweet_and_sour).
20 chinese(chow_mein).
21 chinese(chop_suey).
22 chinese(sweet_and_sour).
23 italian(pizza).
24 italian(spaghetti).
```

◉ What = spaghetti

◯ What = chow_mein ; What = speaghetti.

◯ What = chow_mein ; What = sweet_and_sour ; What = speaghetti.

◯ chow_mein ; sweet_and_sour ; speaghetti.

◯ none of these

◯ chow_mein ; speaghetti.

◯ spahetti

In java programming language, the keyword 'interface' is used to implement   1/1

○ method overriding

○ none of these

⦿ multiple inheritance

○ dynamic binding

Consider the following code written in C++ programming language. If the   1/1
output of the two statements of cout are respectively -230 and 13, What
should be entered in the boxes B1 and B2 respectively?

```cpp
#include<iostream>
using namespace std;
class P {
        private:
                int x;
                int y;
        public:
                void setval(int a, int b){
                        x = a;
                        y = b;              }
                int compute_prod(){
                        return x*y;   }
                int compute_sum(){
                        return x+y;      }
};
class Q: private P {
        public:
                int u, v;
                int compute1(int x,int y){
                        P :: setval(x,v);
                        return [          ]  B1   }
                int compute2(int x,int y){
                        P :: setval(x,y);
                        return [          ]  B2   }
};
int main()
{
        Q m;
        cout<<m.compute1(23,-10)<<" ";
        cout<<m.compute2(23,-10)<< " ";
        return 0;
}
```

○ P compute_prod() and P compute_sum() respectively

○ None of these

○ compute_prod() and compute_sum() respectively

○ public compute_prod() and public compute_sum() respectively

○ public P :: compute_prod() and public P :: compute_sum() respectively

○ private compute_prod() and public compute_sum() respectively

◉ P:: compute_prod() and P:: compute_sum() respectively

State whether the statement "Prolog supports list data type" is true or false.   1/1

○ true

○ False

Which of the following statements are true in reference to C++ from the point 1/1
of view of its object oriented approach to programming? (1) Programmer can
specify whether static binding or dynamic binding is to be used, (2) The
language supports only dynamic binding (3) The language supports only static
binding (4)Language supports both static and dynamic binding (5) C++
supports multiple inheritance

○ None of these

○ Statements 1, 3 and 4

○ Statements 1, 3 and 5

○ Statements 2, 4 and 5

● Statements 1, 4 and 5

Consider the following code written in C++. Which statement is correct   1/1

```
#include<iostream>
using namespace std;
class f1 {
        public:
                virtual int a1(int value){
                        return value*100; };
                int a2(int x, int y){
                        return x+y*200; };

};
class f2: public f1 {
                int method1(int a, int b, int c){ return a+b+c; }
                int a1(int value){
                        return value*2; };
                int a2(int value){
                        return value*3; };
        };
```

○ The message to method binding for a1() and a2() both is done at run time

○ The message to method binding for a1() is done at compile time and that of a2() is done at run time

◉ The message to method binding for a1() is done at run time and that of a2() is done at compile time

○ None of these

○ The message to method binding for a1() and a2() both is done at compile time

Reexportation is a used
1/1

○ when a subclass derivation is public and the access to superclass member is expected to be accessible for a member of derived class

○ when a subclass derivation is private and the superclass has only private access allowed for its members

○ None of these

◉ when a subclass derivation is private and the access to superclass member is expected to be accessible for a member of derived class

Consider the following class definitions. Which methods accessed in the   1/1
derived class can override those of the superclass?

```cpp
#include<iostream>
using namespace std;
class f1 {
        public:
                int x;
                int y;
                int method1(int a, int b){ return a+b; }
                int a1(int value){
                        return value*100; };
                int a2(int new1){
                        return new1*200;          };

};
class f2: public f1 {
                int value;
                int method1(int a, int b, int c){ return a+b+c; }
                int a1(int value){
                        return value*2; };
                int a2(int value){
                        return value*3; };
        };
```

○ method1(), a1() and a2()

○ Only a1()

○ Only method1()

○ Only a2()

○ None of these

◉ a1() and a2()

○ method1() and a2()

○ method1() and a1()

Which of the following statements are correct in reference to Java   1/1
programming language in context to its object oriented approach? (1) All java
objects are allocated memory on the call stack. (2) All objects in Java are heap
dynamic (3) A method can be restricted to be overridden using the keyword
'interface'. (4) A keyword 'final' is used to restrict a method from being
overridden. (5) All subclasses in Java are subtypes (6) Java supports multiple
inheritance implicitly.

○ Statements 1, 4 and 5

○ Statements 2, 4 and 6

○ Statements 1, 3 and 5

○ None of these

○ Statements 2, 3 and 5

◉ Statements 2, 4 and 5

○ Statements 2, 3 and 6

Consider the following C++ class definitions. Which of these statements are   0/1
correct? (1) The methods addVal() and mulVal() are accessible for variables of
classes R and S both (2) Class Q is a superclass (3) Class P is the superclass (4)
Class R is a subtype of P (5) Class S is a subtype of P (6) methods f1() and f2()
are accessible by inherited class of R (7) the methods addVal() and mulVal()
are accessible for variables of classe S.

```cpp
#include<iostream>
using namespace std;
class P {
        private:
                class Q {
                        public:
                                Q *ptr1;
                                int value; };
                Q *head;
                int x;
                int y;
        public:
                void setval(int a, int b){ x = a; y = b; }
                int addVal(){return x+y;};
                int mulVal() {return x*y;};
};
class R: private P {
                int value;
                int f1(int value){
                        return value*2; };
                int f2(int value){
                        return value*3; };
        };
class S: public P {
        public:
                int K;   };
```

○ Statements 1, 3 and 5

○ None of these

○ Statements 1, 3, 5 and 7

○ Statements 2, 3, 6 and 7

○ Statements 1, 2 and 4

◉ Statements 3, 5 and 7

○ Statements 3, 6 and 7

Correct answer

○ Statements 1, 3, 5 and 7

Type checking 1/1

○ is done at compile time in both C++ and Smalltalk

○ is done at run time for C++ and at compile time for Smalltalk

◉ is done at compile time for C++ and at run time for Smalltalk

○ None of these

○ is done at run time in both C++ and Smalltalk

Which of the following statements hold good for Prolog programming   0/1
language? (1) Prolog is strongly typed (2) The lack of explicit memory
allocation and deallocation functions in Prolog is evidence that it performs
automatic memory management, e.g. using garbage collection. (3) A variable
in Prolog must start with either an upper-case letter or an underscore. (4) A
Prolog variable can only be assigned to a value once (5) One of Prolog
strengths is its use of fuzzy logic.

○ Statements 1,3 and 5

○ Statements 1, 2 and 3

○ None of these

○ Statements 2, 3 and 4

○ Statements 1, 2 and 5

◉ Statements 2, 3 and 5

Correct answer

◉ Statements 2, 3 and 4

Which of these are used to be defined as term in Prolog (1) a number such as   1/1
123 and 28.(2) variable starting with an uppercase letter, such as X and Y. (3)
atoms such as delhi, alice etc. (4). unifier such as X=bob, Y=delhi . (5) clauses
such as brother(eric, john) and parent(X, john). (6) query such as ?-brother(X,
john).

- ◉ 1, 2, 3 and 5

- ○ 1, 2, 3, 4 and 6

- ○ none of these

- ○ 2, 4 and 6

- ○ 2, 3 and 6

- ○ 3, 4 and 5

- ○ 1, 3 and 4

- ○ 1, 3, 4 and 5

Which of these cannot be used as constant in the Prolog program?   1/1

- ○ None of these
- ○ likes
- ◉ Nice
- ○ abc

Consider the following code written in Prolog language. Write query (starting   1/1
with ?-) to sort the list of numbers as [23, 10, -10, 28, 30, 80, 4, -1, 19] using
appropriate terms, variables and constants. [Ensure that the list elements are
separated by a comma and a following blank as is given above. Also ensure
that the query is posed to be syntactically and semantically correct so as to
give an output as the sorted list]

```
insert_sort(List, Sorted):-isort(List, [],Sorted).
isort([], Acc, Acc).
isort([H|T], Acc, Sorted):- insert(H, Acc, New), isort(T, New, Sorted).
insert(X, [Y|T], [Y|New]):-X>Y, insert(X,T,New).
insert(X, [Y|T], [X,Y|T]):-X=<Y.
insert(X, [], [X]).
```

?-insert_sort([23, 10, -10, 28, 30, 80, 4, -1, 19], Sorted).

Correct answer

 ?-insert_sort([23, 10, -10, 28, 30, 80, 4, -1, 19], X).

Feedback

A dot is expected at the end.

This form was created inside BITS Pilani University.

Google Forms