Started on	Thursday, 7 November 2024, 2:21 PM
State	Finished
Completed on	Thursday, 7 November 2024, 2:25 PM
Time taken	4 mins 7 secs
Marks	1.00/7.00
Grade	**14.29** out of 100.00

Question 1

Complete

Mark 1.00 out of 1.00

The table Given below is not in **2NF (Second Normal Form)**, how many Tables will be created if this is normalized?

Table:

Employee ID	Employee Name	Department ID	Salary	Department Name	Department Location
101	John Doe	D01	50000	HR	New York
102	Jane Smith	D02	60000	Finance	London
103	John Doe	D01	52000	HR	New York
104	Alex Johnson	D03	55000	IT	San Francisco

Select one:

- a. 1
- b. 3
- ○ c. 2
- d. 4

Question 2

Complete

Mark 0.00 out of 1.00

Consider you are creating a table using below query :

(Colleges table contains columns CollegeId and College Name and CollegeId is the primary key)

CREATE TABLE Colleges

(

StudentId INT CONSTRAINT pk_students_sid PRIMARY KEY,

CollegeId INT CONSTRAINT fk_colleges_pid FOREIGN KEY

REFERENCES Colleges(CollegeId),

StudentName VARCHAR(25)

);

Which one of the following integrity rules has been implemented in this design.

Select one:

- ○ **a. No Integrity rules have been followed**
- ○ **b. Referential Integrity**
- ○ **c. Both Engity Integrity and Referential Integrity**
- ◉ **d. Only Entity Integrity**

Question 3

Complete

Mark 0.00 out of 1.00

The following is the Pseudo-code fragment that defines the over riding method in the class extension.

class Super defines:

Private method demo()

Print as ' Demo of Super class '

end

class Sub extends class Super and defines:

Public method demo()

Print as ' Demo of Sub class '

end

The main function defines:

Create object s for the class Sub;

invoke method demo using the object s;

end

What will be the expected output for the framed code when the method 'demo' is invoked using the object created for the class 'Sub' ?
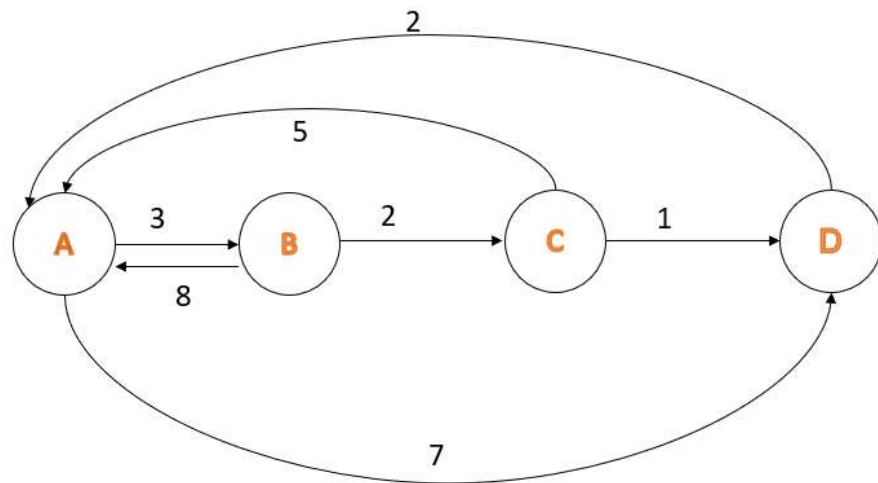
Select one:

- a. It generates a compile-time error since only a public instance method in the super class can be overridden in the sub class
- b. It generates a compile-time error since a private instance method in the super class cant be make public in the sub class.
- c. The method 'demo' will return 'Demo of Super class'
- d. The method 'demo' will return ' Demo of Sub class '

what is the final all pair shortest path matrix and center vertex obtained using Floyd's algorithm for the directed graph given below

Select one:

  ◉ **a.** The center vertex is **C** with the following shortest-path matrix:

$$\begin{bmatrix} 0 & 3 & 5 & 7 \\ 5 & 0 & 2 & 3 \\ 3 & 6 & 0 & 1 \\ 2 & 5 & 7 & 0 \end{bmatrix}$$

b. The center vertex is A with the following shortest-path matrix:

$$\begin{bmatrix} 0 & 3 & 5 & 6 \\ 5 & 0 & 2 & 4 \\ 3 & 6 & 0 & 1 \\ 2 & 5 & 7 & 0 \end{bmatrix}$$

c. The center vertex is B with the following shortest-path matrix:

$$\begin{bmatrix} 0 & 3 & 5 & 6 \\ 5 & 0 & 2 & 3 \\ 3 & 6 & 0 & 1 \\ 2 & 5 & 7 & 0 \end{bmatrix}$$

d. The center vertex is D with the following shortest-path matrix:

$$\begin{bmatrix} 0 & 3 & 5 & 6 \\ 5 & 0 & 3 & 3 \\ 3 & 6 & 0 & 1 \\ 2 & 5 & 7 & 0 \end{bmatrix}$$

Consider the class 'Person' includes the attributes of First_Name and Second_Name. These attributes are local to the Person class and assigned with the value of 'Scott' and 'Dennis' respectively by creating two objects p1 and p2 for the class Person.

Which is being denoted as Instance in the above-declared Person class ?

Select one:

○ **a. First_Name and Last_Name are the instances of an object for the class Person the two are unique and exist independent of each other.**

○ **b. p1 and p2 are the instances of an object for the class Person the two are unique and exist independent of each other.**

○ **c. p1 and p2 are the instances of an object of the class Person the two are sharing the same memory.**

◉ **d. First_Name and Last_Name are the instances of an object for the class Person the two are sharing the same memory.**

Go through the below program and then choose the access
modifiers for data member 'double length' inside the Class(Belt),
so that it will print the length of the belt on the console.

```cpp
#include <iostream>
using namespace std;

class Belt {
    double length;
};

class BlueBelt :  Belt {
public:
   void setBeltLength(double length);
   double getBeltLength(void);
};

double BlueBelt::getBeltLength(void) {
   return length;
}

void BlueBelt::setBeltLength(double length) {
   this->length = length;
}

int main() {
   BlueBelt b;
   b.setBeltLength(223.25);
   cout << "Length = " << b.getBeltLength() << endl;
   return 0;
}
```

Select one:

- ○ **a. private and default**
- ○ **b. private, public and protected**
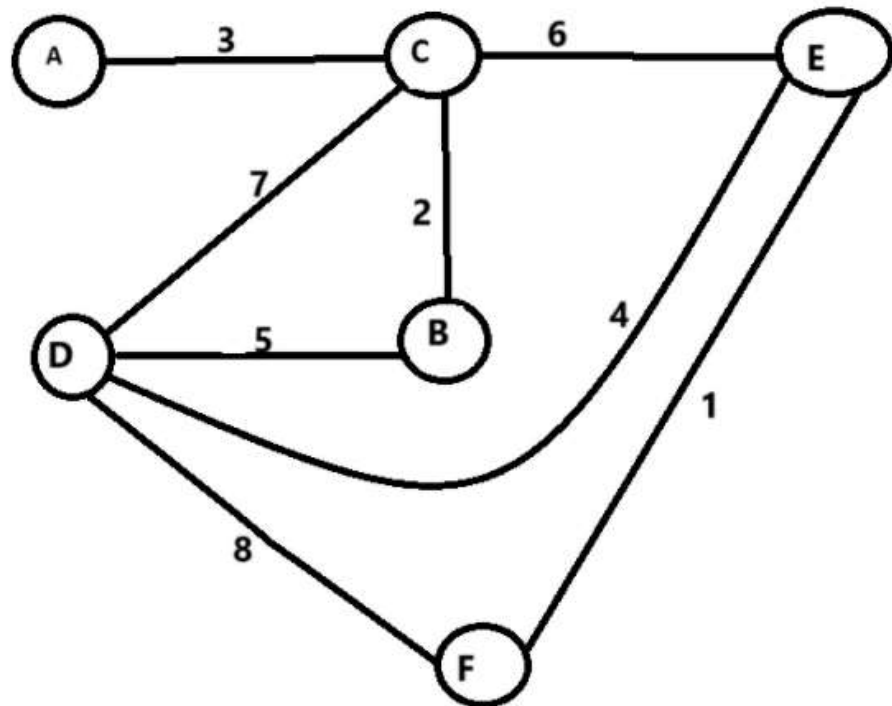- ◉ **c. private**
- ○ **d. public and protected**

A connected and undirected graph is given below. You need to construct a Minimum Spanning Tree (MST) using Kruskal's Algorithm. What will be the total weight of the MST constructed?

Given Graph:

Select one or more:

- ☑ **a. 12**
- ☐ **b. 10**
- ☐ **c. 18**
- ☑ **d. 15**