

Appendix A

Study Materials

We took some questions presented in the UML knowledge assessment exercise from the online sample practice tests for the Sun Certified Java Associate exams.

A.1 UML Knowledge Assessment Exercise

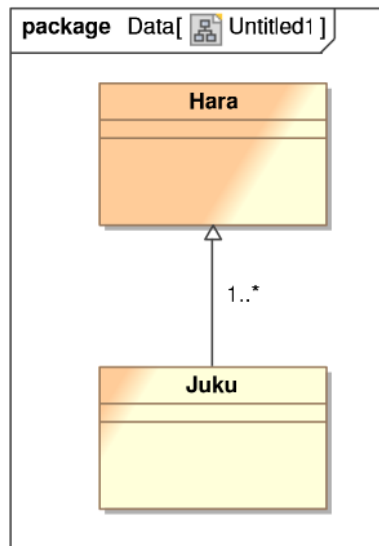
Question 1

What type of relationship is needed to represent the relationship between students and the courses they are enrolled in at a university?

1. A one-to-one association.
2. A one-to-one composition.
3. A one-to-many association.
4. A one-to-many composition.
5. A many-to-many association.
6. A many-to-many composition.

Question 2

Exhibit:



Which of the following is true?

1. Juku is a subclass of Hara.
2. This is NOT a valid UML class diagram.
3. Every Juku has a reference to at least one Hara.
4. Juku is a subclass of Hara and at least one other class.

Question 3

Which two are true about composition relationships? (choose two)

1. Composition relationships can be one-to-many.
2. Composition relationships are never one-to-many.
3. Composition relationships are always many-to-many.
4. Composition relationships are used to show exclusive ownership.

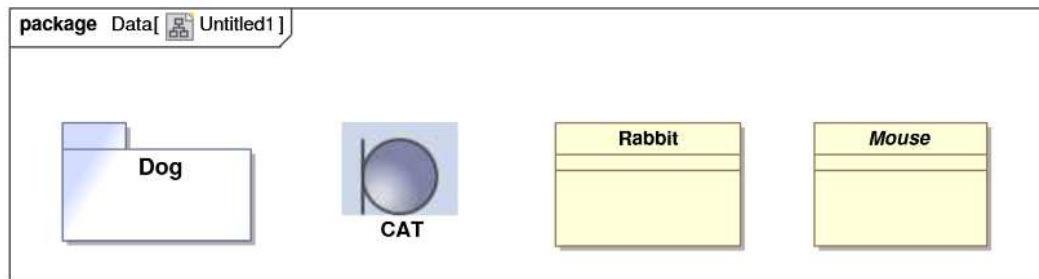
Question 4

Which two are true about the relationship ‘A keyboard has 101 keys’? (choose two)

1. This is a one-to-one relationship.
2. This is a composition relationship.
3. This is a one-to-many relationship.
4. This is a many-to-many relationship.
5. This is not a composition relationship.

Question 5

Exhibit:

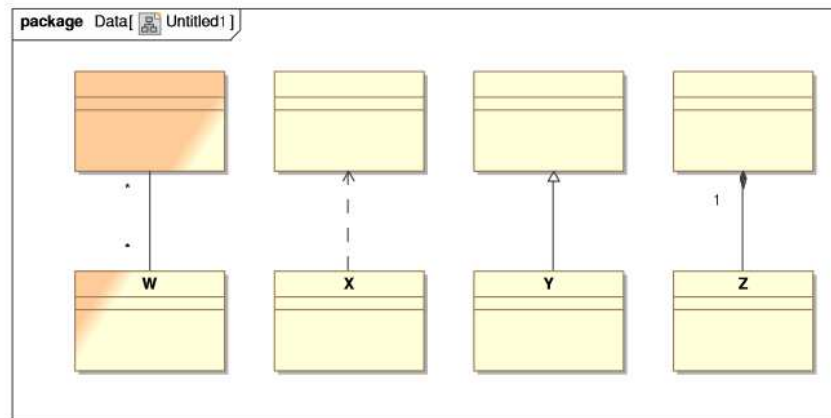


Which is an abstract class?

1. Cat.
2. Dog.
3. Rabbit.
4. Mouse.

Question 6

Exhibit:

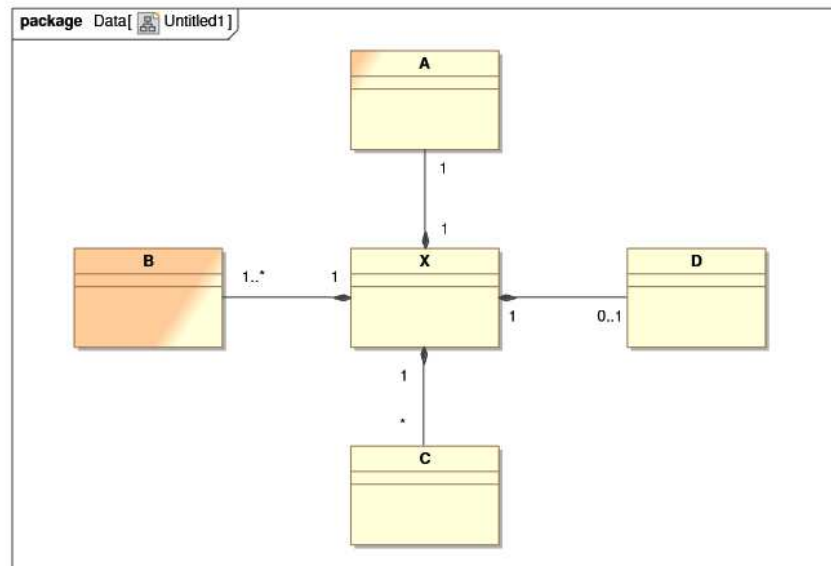


Which class has a superclass relationship?

1. W.
2. X.
3. Y.
4. Z.

Question 7

Exhibit:

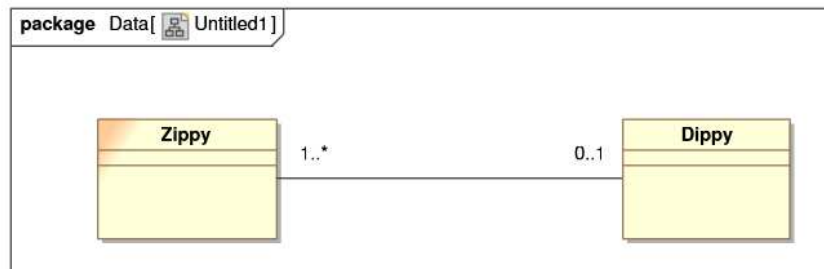


Which two classes can have two or more instances associated with a single instance of X ? (choose two)

1. A.
2. B.
3. C.
4. D.

Question 8

Exhibit:



Which two are true? (choose two)

1. It is valid for a Zippy to have no associated Dippy.
2. It is valid for a Dippy to have no associated Zippy.
3. Every Zippy must be associated with exactly one Dippy.
4. Every Dippy must be associated with exactly one Zippy.
5. Every Dippy must be associated with at least one Zippy.
6. It is valid for a Zippy to be associated with more than one Dippy.

Question 9

Which two are true? (choose two)

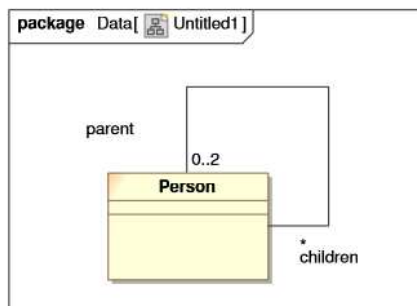
1. 2..4 is a valid multiplicity indicator..
2. The multiplicity indicators * and 1..* are equivalent.
3. The multiplicity indicators + and 1..* are equivalent.
4. An optional association is shown using the multiplicity indicator 0..1.
5. Multiplicity indicators must always be shown on both ends of an association.
6. Multiplicity indicators are optional, but if they are included they must be shown on both ends of an association.

Question 10

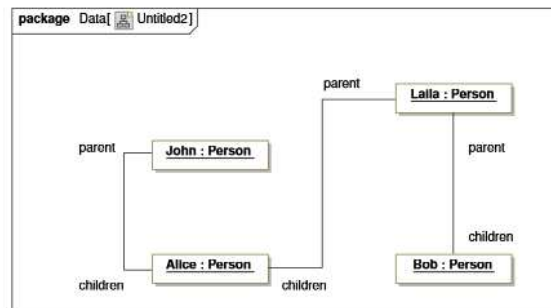
Model the relationship between a car (that has an engine and color) and its owners (having a name) in a UML class diagram. A car can have several owners over time, but only one owner at a time. Do not forget cardinalities, role names, attributes, and their types. Note: An engine cannot exist without a car.

Question 11

Exhibit:



(a) UML class diagram



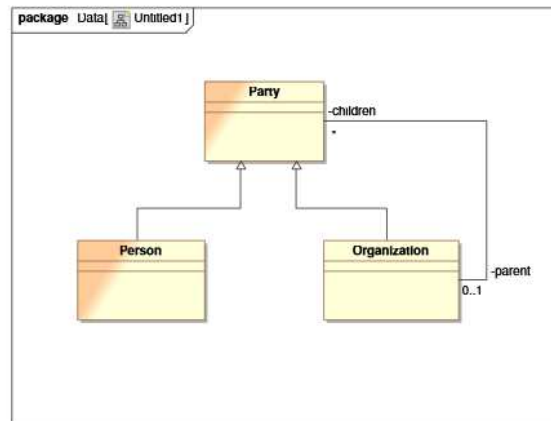
(b) UML object diagram

Does the object diagram (Fig. A.1(a)) represent a valid instantiation of the class diagram (Fig. A.1(b))?

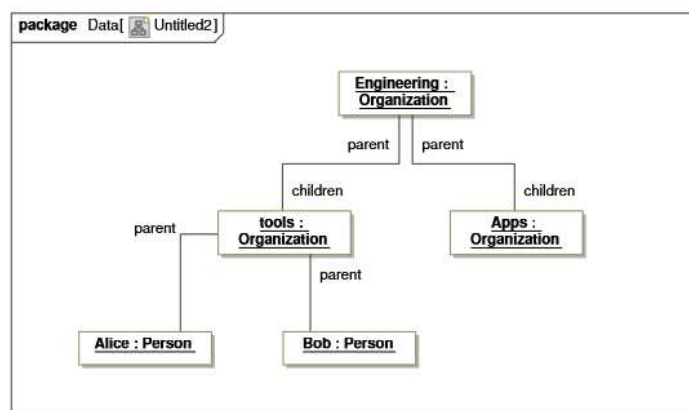
1. Yes.
2. No.

Question 12

Exhibit:



(c) UML class diagram



(d) UML object diagram

Is Figure A.1(d) a valid instantiation of Figure A.1(c)?

1. Yes.
2. No.

If your answer to the previous question is No, please provide a correct instantiation from your point of view.