# CO7216 Semantic Web

Surgery

## Exercises

### Question 1– Write the following OWL document snippet (RDF/XML) in OWL Functional Syntax and OWL Manchester Syntax

```
<owl:Class rdf:about="#Vegetarian">
  <owl:equivalentClass>
    <owl:Class>
      <owl:intersectionOf rdf:parseType="Collection">
        <rdf:Description rdf:about="#Person"/>
        <owl:Restriction>
          <owl:onProperty rdf:resource="#eat"/>
          <owl:allValuesFrom rdf:resource="#Vegetable"/>
        </owl:Restriction>
      </owl:intersectionOf>
    </owl:Class>
  </owl:equivalentClass>
  <rdfs:subClassOf rdf:resource="#Person"/>
  <owl:disjointWith rdf:resource="#NonVegetarian"/>
</owl:Class>
```

**Question 2 – Given a family ontology:** *Man* and *Woman* are subclasses of *Person*. The following OWL properties have already been defined for the Person class:

- *hasChild*
- *hasParent*
- *hasSibling*

**Please define reasoning rules for the following properties in SWRL**

- *hasAunt*
- *hasBrother*
- *hasSister*
- *hasSon*
- *hasDaughter*
- *hasFather*
- *hasNephew*
- *hasNiece*
- *hasUncle*

**Please define the following generic reasoning rules in Jena Rule Syntax**

- *hasSister* is defined as a symmetric property
- If *p1* is a sub property of *p2,* if (*x, p1,y) then (x, p2, y)*
- *hasAncestor* is the transitive closure of *hasParent* Property
- The instances of a subclass are also instances of its superclass