Started on	Thursday, 25 January 2024, 2:10 PM
State	Finished
Completed on	Thursday, 25 January 2024, 2:14 PM
Time taken	4 mins 10 secs
Grade	**15.00** out of 15.00 (**100**%)

Question **1**

Correct

Mark 3.00 out of 3.00

What does SHACL primarily focus on?

- Transforming RDF data.
- Visualizing RDF data
- Querying RDF databases.
- Validating RDF graphs against a set of conditions. ✔

SHACL is used to describe and constrain the contents of RDF graphs. It does not focus on transformation, querying, or visualization of RDF data.

The correct answer is:
Validating RDF graphs against a set of conditions.

Question **2**

Correct

Mark 3.00 out of 3.00

Which of the following best describes a SHACL Shape?

- A tool for converting RDF to other data formats.
- A set of constraints to apply to an RDF graph. ✔
- A graphical representation of RDF data.
- A specific RDF query language.

A SHACL Shape is essentially a collection of constraints that specify conditions that data in an RDF graph must meet.

The correct answer is:
A set of constraints to apply to an RDF graph.

Question **3**

Correct

Mark 3.00 out of 3.00

In SHACL, what is the purpose of `sh:targetClass`?

- It indicates the class on which a SHACL shape is applied. ✔
- It specifies the RDF class to be transformed
- It is used to define a new class in RDF.
- It references the class that contains the error in the RDF graph.

The `sh:targetClass` in SHACL is used to specify the RDF class of nodes that the SHACL shape should be applied to.

The correct answer is:
It indicates the class on which a SHACL shape is applied.

Question **4**

Correct

Mark 3.00 out of 3.00

Which of the following is true about SHACL?

- SHACL shapes are written in SPARQL.
- It is a W3C recommendation for RDF validation. ✔
- It is primarily used for generating RDF data.
- It can only validate RDF data stored in triplestores.

SHACL is a W3C recommendation that provides a language for validating RDF graphs. While SHACL uses some concepts from SPARQL, the shapes are not written in SPARQL, and SHACL can validate RDF data regardless of where it is stored.

The correct answer is:
It is a W3C recommendation for RDF validation.

Question **5**

Correct

Mark 3.00 out of 3.00

Consider the following RDF triples:

```
@prefix ex: <http://example.org/> .
@prefix xsd: <http://www.w3.org/2001/XMLSchema#> .

ex:Book1 a ex:Book ;
     ex:title "The Great Gatsby" ;
     ex:publishedYear "1925"^^xsd:gYear .

ex:Book2 a ex:Book ;
     ex:title "1984" ;
     ex:publishedYear "1949"^^xsd:gYear .
```

And the following SHACL shape:

```
@prefix sh: <http://www.w3.org/ns/shacl#> .
@prefix ex: <http://example.org/> .
@prefix xsd: <http://www.w3.org/2001/XMLSchema#> .

ex:BookShape a sh:NodeShape ;
    sh:targetClass ex:Book ;
    sh:property [
       sh:path ex:title ;
       sh:datatype xsd:string ;
    ] ;
    sh:property [
       sh:path ex:publishedYear ;
       sh:minInclusive "1900"^^xsd:gYear ;
       sh:maxInclusive "2000"^^xsd:gYear ;
    ] .
```

Which of the following statements is true?

- Only `ex:Book2` conforms to `ex:BookShape`.
- Only `ex:Book1` conforms to `ex:BookShape`.
- Both `ex:Book1` and `ex:Book2` conform to `ex:BookShape` ✔
- Neither `ex:Book1` nor `ex:Book2` conforms to `ex:BookShape`.

The SHACL shape `ex:BookShape` targets instances of `ex:Book`. It specifies two properties: `ex:title` with a datatype of `xsd:string`, and `ex:publishedYear` with a range between 1900 and 2000 (inclusive). Both `ex:Book1` and `ex:Book2` have titles that are strings and published years within the specified range, thus conforming to the shape.

The correct answer is:
Both `ex:Book1` and `ex:Book2` conform to `ex:BookShape`