Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

FINAL EXAMINATION
SEMESTER II
SESSION 2021/2022

COURSE NAME	:	SEMANTIC WEB
COURSE CODE	:	BIW 30803
PROGRAMME CODE	:	BIW
EXAMINATION DATE	:	JULY 2022
DURATION	:	3 HOURS
INSTRUCTION	:	1. ANSWER ALL QUESTIONS
		2. THIS FINAL EXAMINATION IS AN **ONLINE** ASSESSMENT AND CONDUCTED VIA **CLOSED BOOK.**
		3. STUDENTS ARE **PROHIBITED** TO CONSULT THEIR OWN MATERIAL OR ANY EXTERNAL RESOURCES DURING THE EXAMINATION CONDUCTED VIA CLOSED BOOK.

THIS QUESTION PAPER CONSISTS OF **THREE (3)** PAGES

Q1 Describe the relation between linked data and semantic web. Give **TWO (2)** examples to support your answer.

(4 marks)

Q2 (a) Consider an online movie review site that publishes its movie and review data as Extensible Markup Language (XML).

Part of the data is as follows:

Movies, Movie, MovieID, Stars, Comment

(i) Write an XML documents for the above elements with your own data records.

(10 marks)

(ii) Write a Document Type Definition (DTD) for the above elements with your own data records.

(10 marks)

(b) Explain **FOUR (4)** examples on describing resources.

(4 marks)

Q3 Consider the following task scenario :

Football Club Team (FCT) Parit Raja is a non-profit organization. The club is based in Parit Raja. The manager Mr X is the President of the Club Committee and Mr Y is the Chief Executive. Mr Z is the trainer of the team. A, B and C are team players. Manager, trainers and players are members of the FCT. Every player is trained by the trainer.

Write the description of Football Club Team using RDF schema.

(14 marks)

Q4 Consider the following task scenario :

Rabbit is a sub-concept of the concept Animal. Herbivore is a concept whose members are exactly those animals who eat only plants. Adult Rabbit is a concept whose members are exactly those rabbits older than 3. Adult rabbits might have kids who are again rabbits. Billy is a rabbit. Billy is 4 years old. Billy is the child of Betty.

Model the above ontologies using Web Ontology Language (OWL).

(16 marks)

Q5 Consider semantic graphs in **Figure Q5**. Analyze the semantic graphs and construct Resource Description Framework (RDF) statements which consists of :

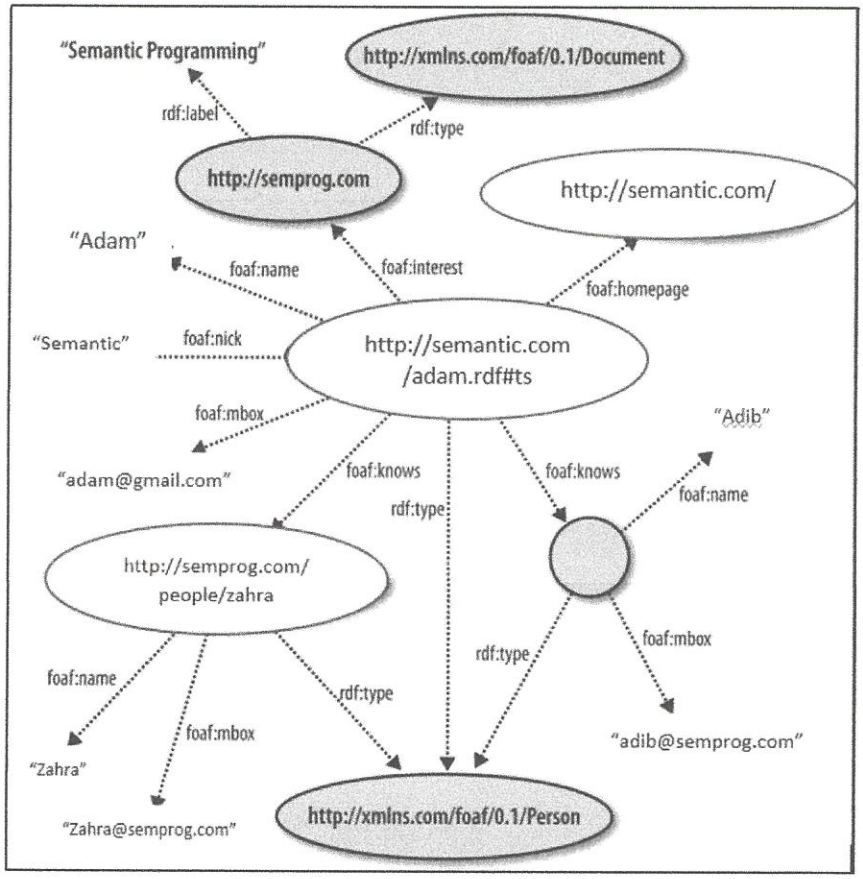

Figure Q5

(a) RDF description.

(3 marks)

(b) RDF resources.

(3 marks)

(c) RDF properties.

(3 marks)

(d) RDF values.

(3 marks)

- END OF QUESTIONS -