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ARTIFICIAL INTELLIGENCE PROGRAMMING ASSIGNMENT TWO

1.Represent the following facts in the language of propositional logic: (5 Marks)

WHERE P = Alison likes cakes

WHERE Q = Alison eats cakes.

i). Alison likes cakes or Alison eats cakes

P∨Q

ii). Alison likes cakes and Alison eats cakes

P∧Q

iii). Alison doesn't eat cakes

¬Q

iv). If Alison likes cakes then Alison eats cakes

P→Q

v). If Alison likes cakes then Alison eats cakes, and vice versa

P↔Q

2. Represent the following facts in the language of propositional logic: (10 Marks)

i). Alison likes Richard or likes chocolate

C∨D

Where C = Alison likes Richard and D = Alison likes chocolate

ii). Alison likes Richard and chocolate

C∧D

iii). If Richard is a friend of Alison then Alison likes Richard

R→C

Where R = Richard is a friend of Alison

iv). Alison eats everything that she likes

∀x{Likes(x)→Eats(x)}

v). There exists some bird that doesn't fly

∃x{Bird(x)∧¬Fly(x)}

vi). Every person has something that they love

∀x{Person(x)→∃yLove(x,y)}

vii). There is some table that doesn't have 4 legs.

∃x{Table(x)∧¬Leg(x,4)}

viii). All elephants are grey

∀x{Elephant(x)→Grey(x)}

ix). All Kiwis support either Warriors or Crusaders

$\forall x\{Kiwi(x) \rightarrow (Warrior(x) \vee Crusader(x))\}$

x). There is something small and slimy on the table

$\exists x\{Small(x) \wedge SLimy(x) \wedge On(x,Table)\}$

xi). There is no asparagus which is tasty.

$\forall x\ (A(x) \rightarrow \neg T(x))$