CSE 304 3. Midterm Exam (b)

I. Question

Define the relations **gorumce(X, Y)**, **elti(X, Y)**, **bacanak(X, Y)**, **kayin(X, Y)** in terms of parent, sister, married, female, male relations.

II. Question

Define relation **max3(X, Y, Z, M)** where M is the maximum of X, Y, Z.

III. Question

Define the predicate body mass index, **bmi(W, H, Status)** so that the status of a person is underweight if BMI $<$ 18.5, normal if 18.5 $<$ BMI $<$ 25, overweight if 25 $<$ BMI $<$ 30 and obese if BMI $>$ 30. The body-mass index of a person is calculated via the formula $BMI = \frac{W}{H^2}$, where W is the weight of the person in kg and H is the height of the person in meters. For example: **bmi(80, 1.87, normal)**.

IV. Question

Write a Prolog predicate that returns the middle element of a given list **middle(L, X)**, where X is the middle element of the list L.

V. Question

Define the predicate **sumtwo(L, Y)** which is true if there are two elements in the list L whose sum is Y. For example: **sumtwo([4 6 8 11 7 10], 21)**.