



Notes: \* Answer All of the Following Questions:

\*\* Marks Are Distributed Evenly

- Q1) (a) Write a prolog program to find the square of integer list.  
 (b) Write a prolog program for a function F(X,Y) that produce "False" if input equal to zero and "True" if input equal to 1 and "Error" if input not equal to zero and not equal to one.

(20 Mark)

- Q2) (a) Write a prolog program to find the factorial of an integer number.  
 (b) Write a prolog program to find length of integer list.

(20 Mark)

- Q3) (a) Write a prolog program to find the summation of integer list.  
 (b) Write a Lisp program that find the value of Z, where:

$$Z = \frac{(A/B) * (C/D)}{(E * F)}, \text{ and } [A=8, B=2, C=2, D=1, E=1, F=2].$$

*predecates*

(20 Mark)

- Q4) (a) What is the output of the following Lisp instructions:

- (1) (FORTH (A B) (C D) (E F) (G H))
- (2) (CDR (CAR '(a b) (c d) (e f)))
- (3) (LENGTH (a b) (c d) (e f))
- (4) (LIST '(A) 'B 'C '(D))
- (5) (REVERSE (E F) (C D) (A B)))

- (b) Write a Lisp program to find the area and circumference of the triangle, where (L1=Base=5, L2=3, L3=4, Height=10).

(20 Mark)

Continue >>>

Q5) (a) Write a Lisp program to construct an alphabet list from A to D, then

- (1) Add numbers to this list from 1 to 3.
- (2) Determine the length of result list.
- (3) Determine the sixth element of the list.
- (4) Reverse the result list.

(b) Create the following functions by using Lisp language:

- (1)  $F1(A) = 5 + 7A$ .
- (2)  $F2(A, B) = A^3 / 3B^4$ .
- (3)  $F3(A, B) = 2A + A^6 + B^9$ .
- (4)  $F4(A, B, C) = 5A + 3B^7 + 4C^8$ .
- (5)  $F5(A, B, C) = (3A - B) / (5C^2)$ .


(20 Mark)

\*\*\* GOOD LUCK \*\*\*



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