Total Marks: **10**                                                    **Due Date: 7-11-2021**

**Instructions:**

- Create a very well formatted Microsoft Word Document.
- Title Page (Full Name, Registration Number)
- Header and Footer, Page Number out of Total No. of Pages, References.
- Late submission is not allowed.
- **Copied assignment and its source will get 0 Marks**

## Assignment: Problem Solving Concepts

**Question:** Many treadmills output the speed of the treadmill in miles per hour (mph) on the console, but most runners think of speed in terms of a pace. A common pace is the number of minutes and seconds per mile instead of mph. You want to solve this problem by developing a program. Your program starts with a quantity in mph and converts the quantity into minutes and seconds per mile. As an example, the proper output for an input of 6.5 mph should be 9 minutes and 13.8 seconds per mile.

1. How many variables will you declare in your program? Declare these variables with proper naming conventions and appropriate datatype

ANSWER IN THIS BOX

2. What are the computational steps for converting mph into minutes and seconds per mile? Demonstrate your steps with three different scenarios.

ANSWER IN THIS BOX

3. Draw & Write  Algorithm/Flowchart/Pseudocode of your solution

ANSWER IN THIS BOX

**Question:** Mary Smith, a student, has borrowed $3,000 to help pay her college expenses. After setting up a budget, $85 was the maximum monthly payment she could afford to make on the loan. Develop a solution to calculate and print the interest, the principal, and the balance on the loan per month. Other information she would like to know is the number of years and months it will take to pay the loan back and the total interest she will pay during that period. The interest rate is 1% per month on the unpaid balance. Keep in mind these formulas:

1. interest normal = balance*interest rate
2. payment = balance – interest
3. new balance = balance - payment

1. How many variables will you declare in your program? Declare these variables with proper naming conventions and appropriate datatype

ANSWER IN THIS BOX

2. What are the computational steps for converting mph into minutes and seconds per mile? Demonstrate your steps with three different scenarios.

ANSWER IN THIS BOX

3. Draw & Write Algorithm/Flowchart/Pseudocode of your solution

ANSWER IN THIS BOX

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