

## Instructions

1. Candidates should answer all the questions in the same order provided in the question paper.
2. Any activity that compromises the integrity of the examination will not be permitted.
3. Students should complete the examination within the provided timeline.
4. Candidates are expected to check and ensure that the correct answer file (in .ipynb format) is uploaded in LMS.

## SECTION A: 5 Marks

1.A The e-commerce business vertical of Amazon – a multinational technology company based in Seattle, has determined that its annual profit is normally 33 percent of its total sales revenue.

Write a python program that takes the sales revenue as user input and returns the profit for Amazon.

<b>Note:</b> Use the value 0.33 to represent 33 percent
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<b>Sample Input:</b> 65436	<b>Sample Output:</b> \$21,593.88
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1.B The acre is a unit used to measure land in the imperial and US customary systems. One acre of land is equal to 43,560 square feet.

Write a python program that accepts the measure of land in square feet and returns the measure in acres.

<b>Sample Input:</b> 875687	<b>Sample Output:</b> 20.10
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## SECTION B: 10 Marks

2. James Deen is an investor specializing in the Technology Domain. James purchases stock in successful technology companies using a stockbroker and later sells them at a profit margin. As part of his investment portfolio, James purchased 2000 units of stock in Google LLC worth \$80,000 (\$40 apiece) in the month of November, 2019. The stockbroker charged 3% commission on the total purchase value of the stocks.

A month later, James sells his entire stock holding in Google LLC for \$42.75 apiece. He pays a commission of 3% on this transaction as well to his stockbroker.

Write a Python program that returns the following output:

1. The cost of purchasing the entire stock holding in Google LLC
2. The amount of money paid in commission during the purchase
3. The selling price of the entire stock holding in Google LLC
4. The amount of money paid in commission during the sale

5. The profit margin made by James in the entire transaction (purchase & sale, including commissions paid)

### SECTION C: 15 Marks

3. Ernest Shackleton led the Nimrod Expedition to within 97 nautical miles of the pole for the first time in history on the 9th of January, 1909. An additional interesting fact about the date is that when expressed in the format MM/DD/YY, Month times the Day equals the Year! (MM \* DD = YY)

Write a Python program that prompts the user to input the following:

1. Month of the Year in MM format (1-12, numeric format)
2. Day of the Month in DD format (1-31, numeric format)
3. Year in YY format (last 2 digits of the year, numeric format)

The program should return "Magical Year!" if the Month times the Day equals the Year else "Non Magical Year"

4. Red, Green & Blue, known as primary colours, can be mixed to produce all other colours in the visible spectrum. When Red & Blue is mixed, we get Purple. When Red & Yellow are mixed, we get Orange. When Blue & Yellow are mixed, we get Green. The resulting colours are called secondary colours.

Design a program that prompts the user to enter any two primary colours to mix. The program should return the resulting secondary colour. In the case when the user provides any colour that is not a primary colour as input, the program should return "Error: Please enter a primary colour!"

<b>Sample Input: Red, Blue</b>	<b>Sample Output: Purple</b>
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