Question 1

The dataset in column B to E, has the age (in years), the annual income (in INR) and the credit bureau score (CIBIL) of 200 people.

This data has to be grouped by age and by income in the adjoining tables. Please note that the grouping may or may not be uniform.

The first table is to measure count in each category, and the second table is to measure the average credit bureau scores.

The top left cell is filled as an illustration. I.e., there are 3 people whose ages is 24 years or less and who earn INR 800,000 or less and their average credit bureau score is 732 (rounded value)

Question 2

While copying dates from another data source the date format became jumbled due to locale changes, i.e., the DD/MM/YYYY format has become MM/DD/YYYY format.

Hence certain data is interpreted as date type (but wrong date), and certain data is not understood by excel as a valid date field.

There are 30 such copied dates, all for the year 2020 present in Column C of the excel tab.
In addition, there is a list of banking holidays for 2020 (including Saturdays and Sundays) provided in Column H and Column I

The problem is to fill the correct/actual Date in Column D, and also find the number of working days in that month before that correct/actual date (that is, not including the date itself)

One of the rows is filled as an illustration.

While converting the Copied/Imported dates, to their correct/actual dates, please attempt a generalized approach as there could be 30 or 300 or 3000 such dates.

Question 3

XYZ AMC, a leading mutual fund house runs a mutual fund scheme XYZ Large Cap fund, a fund which focuses on the top 30 stocks of the BSE SENSEX. Until recently, the fund was managed by Mr. ABC, recipient of 5 consecutive 'Best Fund Manager'. Mr. ABC resigned to venture into hedge funding and XYZ large cap fund does not have a fund manager to run the fund.

In a weekly review of the holdings of the scheme, the management decided to reshuffle the portfolio. The management has identified the following 5 stocks which it wants to reshuffle. However, due to lack of resources, it is not able to conclude on the following–

- Whether to increase the allocation of the fund
- Decrease the allocation of the fund
- Keep the asset allocation unchanged

You, as an analyst with the AMC have been asked to present to the management a worksheet which analyses these 5 companies and presents a conclusion.

The AMC management will invest in companies which have beaten the street estimates over the last 7 years. The criteria for determining whether the stock has outperformed the street estimates is as follows –

Criteria 1 – Share price of the company in 2015 should be more than that in 2021

Criteria 2 – the Compounded Annual Growth Rate (CAGR) over the last 7 years must be more than 12%

You must prepare a table to determine if both the criteria are met. Following are the decisions the management will take depending on your analysis –

• Decision 1 - If the share of a company has beaten the street estimates, it will increase asset allocation to the company

• Decision 2 - If the CAGR is less than 10% and the value in 2021 is more than that in 2015, the company will keep the allocation unchanged

• Decision 3 - If the value in 2021 is less than that in 2015 the company will decrease allocation to the company

Present your analysis on what decision the management needs to take on each of the companies. Your analysis should be in a tabulated form. For each company, mention **Increase** for Decision 1, **Unchanged** for Decision 2, **Decrease** for Decision 3.

Question 4

Part 1

Generate a theoretical repayment schedule for the Loan Product with its attributes as mentioned in Sheet "Q5" in attached data file. Determine the Principal and Interest component of every equated Installment.

Part 2

Assume Full Repayment of Expected Installment amount is done in odd installment number and Half Repayment of Expected installment amount is done in even installment number. Calculate the Principal Outstanding after every installment and Internal rate of return for this series of cashflow

Question 5

The genesis of the problem is a real case where a client has approached us for restructuring and lowering the EMI significantly.

Unfortunately, this would take 5.5 years (66 months) to service the loan, should we agree to the terms.

Alternate term proposed was such that the loan could be paid over a period of 48 months (the maximum tenure that we are willing to stretch).

To "fit" within 48 months, we took the lowered EMI proposed, and suggested that if the client pay this lowered EMI for 31 months, and then 2 times this EMI for 17 months after that, then it is possible to service the loan.

So, the problem at hand is to compute the loan principal for which such a repayment schedule would work out.

EMI is Rs 11,352 (as proposed by the client) and the interest rate being same as originally sanctioned, i.e. 22%

Please attempt solving this as per your understanding of loan products