

Register Number:

DATE:

**ST. JOSEPH’S COLLEGE (AUTONOMOUS) BENGALURU-27**

**UG –VI SEMESTER**

**SEMESTER EXAMINATION: APRIL 2022**

**(Examination conducted in July-August 2022**

**B.COM IFA - VI Semester**

**BC IFA 6419: Financial Modelling**

**SECTION A**

**Answer any five of the following questions** (5x5=25 marks)

1 Rocky & Rocky has provided their profit information for the month of June 2022. You are requested to perform the required tasks using the appropriate function as given below

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
| **Country** | **Product** | **Profit** | **Sales** |
| Canada | Oatmeal Raisin | 38814 | 66372 |
| Germany | Oatmeal Raisin | 55095 | 94213 |
| France | Oatmeal Raisin | 12385 | 21179 |
| Germany | Oatmeal Raisin | 17439 | 29821 |
| Mexico | Oatmeal Raisin | 27046 | 46249 |
| Germany | Oatmeal Raisin | 12539 | 21442 |
| Germany | Carrot | 29618 | 50647 |
| Canada | Carrot | 798321 | 1365129 |
| France | Carrot | 28990 | 49573 |
| Germany | Carrot | 23905 | 40878 |

a. Insert a suitable formula to show the total profit for the products from France and Canada only. 2 Marks

b. Insert a suitable formula to show the maximum profit among all the countries. 1 Mark

c. Insert a suitable formula to show the Average profit of all the countries. 1 Mark

d. Insert a suitable formula to show the profit from product Carrot 1 Mark

3 Assume a budget has been prepared for a product based on estimated sales of 750 units, selling price of $75 per unit, variable costs $40 per unit, and fixed costs of $ 3

Show the calculations using the appropriate formula to ascertain the following:

a. Operating profit 1 Mark

b. Contribution margin 2 Marks

c. Breakeven Point 2 Marks

4 "Mr. Sham is considering to invest Rs. 450,000 in a Hardware business. The cash inflow during the first, second and third years are expected to be Rs. 185,000, Rs. 190,000 and Rs, 200,000 respectively" Cost of capital is 12% (Also used for financing the project); Cash inflows are reinvested at 15% Calculate NPV, IRR, MIRR for the proposed investment and interpret your answer.

5 Briefly explain the Advantages of using Excel.

6 Project with a 4 year life and a cost of Rs. 435,000 generates revenue of Rs. 88,000 in year 1, Rs. 107,000 in year 2, Rs. 48,000 in year 3 and Rs. 120,000 in year 4. If the discount rate is 15%, Can the project be accepted?

7 Calculate stock Beta, Correlation and Sharp Ratio using the following information

|  |  |  |
| --- | --- | --- |
| ***Date*** | ***ACC*** | ***NIFTY*** |
| 05-May-22 | 192.45 | 7710.55 |
| 06-May-22 | 187.95 | 7659.6 |
| 09-May-22 | 182.85 | 7488.65 |
| 10-May-22 | 193.4 | 7494.85 |
| 11-May-22 | 195.7 | 7551.15 |
| 12-May-22 | 202.05 | 7749.65 |
| 13-May-22 | 198.45 | 7745.9 |
| 16-May-22 | 191.85 | 7542.45 |
| 17-May-22 | 202.45 | 7734.3 |

Note: Consider the return on treasury bills is quoted at 1%

**SECTION B**

**Answer any three of the following questions**  (15x3=45marks)

8 Below table contains the basic salary of the Employees working in Udaan for the month of Sept. 2022. You are asked to help the HR in performing the tasks as given below. Use appropriate formula and compute the total salary payable for each employee.

a. Company decided to pay Diwali Bonus of 20% (on Basic Salary) to all its employees. 2 Marks

b. PF and Professional tax of 1800 and 200 should be deducted for all the employees 2 Marks

c 12% TDS must be deducted for Employees earning more than 25,000 Per Month 3 Marks

d Web Developer's are eligible to get Internet charges of 3800 per month 3 Marks

e Create a new table for the month of Oct 2022 salary use Look up function to import all the data. 5 Marks

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Role** | **Basic Salary (Per Month)** |  |
| A | CEO | 38814 |  |
| D | CFO | 55095 |  |
| F | Web Developer | 12385 |  |
| G | Web Developer | 17439 |  |
| K | Web Developer | 27046 |  |
| I | Web Developer | 12539 |  |
| J | Web Developer | 12385 |  |
| T | Ux/Ui Designer | 17439 |  |
| L | Manager | 27046 |  |
| M | Manager | 12539 |  |
| O | QAA | 12385 |  |

9 In its budget for next month, Shine.Co has revenues of $900,000, variable costs of $600,000, and fixed costs of $280,000.

a. Compute contribution margin percentage. 2 Marks

b. Compute total revenues needed to break even. 2 Marks

c. Compute total revenues needed to achieve a target operating income of $45,000. 3 Marks

d. Compute total revenues needed to achieve a target net income of $88,000, assuming the income tax rate is 30%. 3 Marks

e Compute total revenues needed to achieve a target net income of $38,000, assuming the income tax rate is 30% and Variable cost of $700,000 5 Mark

10 Historical stock prices of ACC and TATA ELEXI are given below. Risk Free Rate @2%, Construct optimum portfolio using Morkowitz model and comment

|  |  |  |
| --- | --- | --- |
| **Year** | **ACC** | **TATA ELEXI** |
| 2010 | 1075.6 | 313.3 |
| 2011 | 1136.35 | 174.95 |
| 2012 | 1429.4 | 230.7 |
| 2013 | 1108.2 | 415.65 |
| 2014 | 1399.4 | 596.75 |
| 2015 | 1343.95 | 2262.45 |
| 2016 | 1328.4 | 1402.55 |
| 2017 | 1757.9 | 976.65 |
| 2018 | 1504.8 | 1020.7 |
| 2019 | 1444.65 | 825.6 |
| 2020 | 1618.4 | 1832.85 |
| 2021 | 2217.4 | 5867.8 |
| 2022 | 2207.7 | 8076.1 |

11 a. Briefly explain the tools of financial modeling.

b. Discuss various parameters to considered in selection of appropriate chart that matches the data set.