**DELHI SCHOOL OF BUSINESS**
By Vivekananda Institute of Professional Studies - TC

# Delhi School of Business
## PGDM Program
## TERM – V (Batch: 2023-25)
## END-TERM EXAMINATIONS, DECEMBER 2024

| Course Name | Corporate Financial Modelling (CFM) | Course Code | |
|---|---|---|---|
| Duration | 3 Hours | Max. Marks | 60 |

***Instructions:***

1. *Attempt all questions unless an internal choice is provided.*
2. *Scientific calculators and regular calculators are allowed to be used.*
3. *Laptops / desktops are NOT allowed to be used.*

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**Q.1** Solve any five of the following by giving explanation of logic.

a) Operating profit of a company increased from $50 million in the year 2016 to $80 million in the year 2020. What is the compounded annualized growth rate of operating profit?

b) The training cost incurred by a company in the year 2022 is $1.25 million and the increase in training vendor payable balance during the year is $0.15 million. What is the approximate cash payment in the year 2022?

c) A firm has a loan of US$ 1 million with an interest rate of 10% per annum. If the company pays an installment of US$ 100,000 at the end of each quarter, what is the total interest expense for the second year?

d) A company has a net profit after tax of US$ 200 million, depreciation of US$ 25 million, amortization expense of US$ 10 million, an increase in accounts receivables of US$ 8 million, a decrease in inventory of US$2 million and a decrease in overall current liabilities of US$ 5 million. Additionally, the company has an average long-term loan outstanding of US$ 1 billion carrying an interest of 12% p.a. What is its cash flow from operating activities?

e) A company has $100 million in revenue in Year 1 and expects to grow at a CAGR of 12%. In addition, a new market entry is expected to contribute an additional $30 million in Year 4. Compute the total revenue in Year 4.

f) A company has $100 million in debt at an interest rate of 11% and $200 million in equity with a cost of equity of 18%. If the corporate tax rate is 30%, compute the weighted average cost of capital.

**(5 x 5 = 25 Marks) CO1, CO2, CO4**

**Q.2** Financial models have become an indispensable tool for entrepreneurs in today's business environment. Discuss the key reasons why entrepreneurs create financial models.

**(5 Marks) CO1**

**Q.3** What are the rules that apply to macro names?

**(5 Marks) CO3**

**Q.4** While reviewing a financial model containing integrated financial statements for the next five years, you notice that there is a circular reference but not sure where it is. What could be the possible reason(s) for such circularity, and how can this be handled efficiently?

**(5 Marks) CO1, CO2**

**Q.5** A firm has three segments contributing revenues as follows in the current year:

Segment A - $50 million
Segment B - $70 million
Segment C - $30 million

The profit margins for these segments are 10%, 12%, and 18%, respectively.

a) What is the overall profit margin of the firm?
b) The company's overall budgeted profit margin for the current year was 14%. Calculate the variance in profit margin dollars and determine whether the company exceeded or fell short of its budget.

**(OR)**

ABC Corporation plans to raise a loan of $10 million to finance the construction of a new manufacturing plant. The loan has a tenure of 5 years with an annual interest rate of 10%, and repayments are structured as follows with repayments due at the end of each year:

| Year | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| Payment as % of Principal | 5% | 15% | 20% | 20% | 40% |

a) Calculate the total cash outflow (principal + interest) for each year.
b) Assuming that immediately after making three payments, the company requests the bank to change the repayment model to equated principal repayment every year for the remaining loan tenure. The bank agrees to do so by charging a flat fee of 2% and a revised interest rate of 11% per annum. This fee is proposed to be added to the outstanding principal. What shall be the overall increase or decrease in the interest expense payable over the remainder tenure of the loan?

**(10 Marks) CO2**

**Q.6** ABC Inc. is a leading e-commerce company that offers discounts to its customers based on their purchase history and customer type. The company wants to create a User-Defined Function (UDF) to calculate the discount for each customer based on the following criteria:

- If the customer's total purchase amount is less than $100, the discount percentage is 0%, regardless of their customer type.
- If the customer's total purchase amount is $100 or more but less than $500, the discount percentage is 5% for first-time customers and 7% for repeat customers.
- If the customer's total purchase amount is $500 or more, the discount percentage is 10% for first-time customers and 12% for repeat customers.

Create a VBA function procedure to return the appropriate discount percentage based on the below two inputs:

- PurchaseAmt: Customer's total purchase amount; and
- RepeatCustomer: Repeat customer ("Yes") or first-time customer ("No").

You may take suitable assumptions, as necessary, and make a note it.

**(OR)**

David, a novice VBA programmer, has written a VBA sub-procedure to calculate bonus amount for employees based on their performance ratings from 1 to 5. The bonus is assigned as follows:

| Rating | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| Bonus as % of Base Salary | Nil | 5% | 10% | 15% | 20% |

As David's code contains errors, you are required to correct the mistakes and create a revised VBA sub-procedure that accurately calculates employee bonus amount.

```
Sub Calculate-Bonus()

Dim rating As Integer
Dim baseSalary, bonus As Double

rating = InputBox(Enter the rating received)

If rating < 1 or > 5 Then
    MessageBox(Invalid rating entered)
End If

baseSalary = InputBox(Enter the base salary of employee)

' Determine bonus based on rating
If rating = 5 Then
    bonus = 20%
ElseIf rating = 4 Then
    bonus = 15%
ElseIf rating = 3 Then
    bonus = 10%
ElseIf rating = 2 Then
    bonus = 5%
Else Then
    bonus = 0%
End If

MessageBox(Bonus to be paid to employee is: baseSalary * bonus)

End Sub
```

**(10 Marks) CO3**

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