AMAL JYOTHI COLLEGE OF ENGINEERING AUTONOMOUS

KANJIRAPPALLY

MCA-INTEGRATED

MCAINT2023-28-S6 : 23INMCA306-Visual Programming-Assignment 1

QP Code: 23INMCA306/2023/A/1 **Max.Marks :6**

Time:

Q.No	Questions	Marks	CO	BL	PI

1(a)	**Smart Retail Billing and Employee Incentive Management System**
	
	Context / Problem Description
	A medium-sized retail store wants to automate its **billing process and employee incentive calculation** using a VB.NET console-based application. The system should handle **customer purchases, billing calculations, and employee incentive determination** based on total sales.
	The application must demonstrate the use of **variables, data types, scope, access control, operators, control structures, arrays, procedures, functions, parameter passing techniques, and predefined functions**, as specified in the syllabus.
	
	Objectives of the Mini Project
	The mini project should:
	• Accept and validate user inputs
	• Perform billing and incentive calculations
	• Display formatted output using predefined functions
	• Demonstrate modular programming using procedures and functions
	• Apply appropriate scope and access control mechanisms
	
	Functional Requirements
	1 Customer Billing Module
	• Accept customer details:
	  ○ Customer Name (String)
	  ○ Number of items purchased (Integer)
	• Store item prices in a **dynamic array**
	• Calculate:
	  ○ Total bill amount
	  ○ Discount based on total purchase:
	  ▪ Total ≥ ₹5000 → 10% discount
	  ▪ Total ≥ ₹3000 → 5% discount
	  ▪ Else → No discount
	• Display final bill using MsgBox
	
	2 Employee Incentive Module
	• Accept employee details:
	  ○ Employee ID
	  ○ Employee Name
	  ○ Monthly Sales Amount
	• Calculate incentive using a **Function procedure**:
	  ○ Sales ≥ ₹1,00,000 → 15% incentive
	  ○ Sales ≥ ₹50,000 → 10% incentive
	  ○ Else → 5% incentive
		6	CO1,CO2,CO3	L5	1.3.1

Q.No	Questions	Marks	CO	BL	PI
	• Display incentive details **3 Menu-Driven Control Structure** The application should display a **menu**: 1. Generate Customer Bill 2. Calculate Employee Incentive 3. Exit • Use looping statements (Do While / For / While) • Allow repeated operations until the user selects Exit **4 Procedures and Parameter Passing** • Use: o Sub procedure for input collection o Function procedure for calculations • Demonstrate: o Pass By Value o Pass By Reference o Optional arguments (e.g., loyalty discount) o Named arguments **5 Variable Scope and Access Control** • Declare: o Module-level variables o Procedure-level variables • Use access modifiers: o Public for shared data o Private for sensitive calculations o Friend for project-level access **Bonus Task** • Add GST calculation using constants • Use string predefined functions (UCase, Trim, Len) • Display date and time using system functions **Non-Functional Requirements** • **Form-based VB.NET application** • User-friendly prompts and messages • Proper input validation using InputBox • Meaningful variable and procedure names • Clear indentation and comments **Deliverables** Students must submit: 1. **VB.NET source code** 2. **Output screenshots** 3. **Short project report (3–4 pages)** containing: o Problem definition o Module description o Concepts used o Sample output Submission Date : Feb 6, 2026				

CO1: Comprehension of the .NET Framework and Development Environment

CO2: Proficiency in Working with Variables, Data Types, and Scope

CO3: Expertise in Operators, Control Structures, and Function Handling

CO(s) contribution for PO/PSO Attainment from Assignment 1

Question	COs Mark & Mapped PO(s)/PSO(s)[Strength] *3.Substantial, 2.Moderate, 1.Slight*	Total Marks per CO	40% per CO(s)	CO contribution to calculate PO/PSO attainment(%)
1 a)	CO1[**6**]=>**PO1** (3), **PO2** (2), **PO3** (3), **PO4** (3), **PO5** (2), **PO6** (1), **PO7** (1), **PO8** (3),**PSO1** (3), **PSO2** (2), **PSO3** (2) CO2[**6**]=>**PO1** (3), **PO2** (2), **PO3** (3), **PO4** (2), **PO5** (2), **PO6** (1), **PO7** (1), **PO8** (3),**PSO1** (3), **PSO2** (1), **PSO3** (1) CO3[**6**]=>**PO1** (3), **PO2** (2), **PO3** (3), **PO4** (3), **PO5** (2), **PO6** (1), **PO7** (2), **PO8** (3),**PSO1** (3), **PSO2** (1), **PSO3** (1)	CO1=>6 CO2=>6 CO3=>6	CO1=>2.4 CO2=>2.4 CO3=>2.4	

Rubrics used for the assessment- MCAINT2023-28-S6 : 23INMCA306-Visual Programming-Assignment 1

Bloom's Level wise Marks Distribution

Blooms Taxonomy Level		Percentage
L5	Evaluating	100

Course Outcome wise Marks Distribution

COs	Percentage
CO1	100
CO2	100
CO3	100

IQAC Scrutiny Report of the Question Paper & The Scheme

Details of Question Paper				
1.	Course Code	23INMCA306	3. Duration	2 Weeks
2.	Course Name	Visual Programming	4. Max Marks	6
Faculty Details (Scrutiny)				
1.	QP. Setting Faculty	Dr. Paulin Paul		
2.	Name of Verifying faculty			
3.	Designation & Department	AP, MCA		
4.	Name of Approving faculty	Mr. Binumon Joseph		
5.	Designation & Department	AP, MCA		
6.	Date of scrutiny			

Fill the following details after completing the verification of Question Paper & Scheme

Sl. No	Parameters	Verified and found Correct / Not Correct	If Not, write the required corrections
1.	Course code & Course Name		
2.	Max Marks & Duration		
3.	Pattern of Question Paper		
4.	Marking of Compulsory Questions, Choices & Instructions (like - Use of Tables, Graph Sheets etc.)		
5.	Module wise distribution of Marks		
6.	Clarity of the Questions: **Yes/No**		
7.	Duplication of Questions: **Yes/No**		
8.	Whether distribution of questions are as per particular syllabus covering analytical / numerical / descriptive/Design types: **Yes/No**		
9.	Whether one third of the questions in each part is application/design oriented as per the format supplied by KTU: **Yes/No**		
10.	Sufficiency of Duration of Time: **Yes/No**		
11.	**Recommendation: QP Can be**	**Accepted*/Accepted with Minor corrections**/ Rejected***	
	**) Suggested Corrections (either on the Question Paper itself or attach additional page)		
	***) Reasons for Rejection:		
12.	Whether the Scheme of Evaluation is sufficient for Valuation, if not, give suggestions:		
13.	Whether the scheme of Evaluation can be Accepted/ Rejected		
14.	I hereby certify that, I have scrutinized the Question Paper and scheme of evaluation and made required corrections as mentioned above. Signature of the verifying faculty		
15.	I hereby certify that; I have cross checked all details as mentioned above.		