

Module End Lab Exam C++ Programming

Course Name:	PG – DAC	Batch :	Aug 25
Module Name:	C++ Programming	Date:	01/09/2025
Max. Marks:	40	Duration	2:00 Hours

Instructions :

1. Create new Project by the name CPP_12_digit_PRN in your home directory.
2. After evaluation first compress/zip your folder (named CPP_<12 digit PRN>) and upload it on EMIS.

Question

A Vehicle Service Station has two types of servicing:

1. Maintenance / Repairing
2. Engine / Gear Oil Change

Your task is to design an object-oriented, menu-driven program to generate the bill for vehicle servicing.

For Maintenance / Repairing:

Enter customer name, mobile number, and vehicle number.

Enter the vehicle part to be replaced and its price.

Enter labour charge.

Add 5% GST on purchased part.

Add 5% GST on labour charges.

Calculate and display total bill to be paid.

For Engine / Gear Oil Change:

Enter customer name, mobile number, and vehicle number.

Enter oil brand name and oil price.

Add 12% GST on oil price.

Calculate and display total bill to be paid.

CLASS STRUCTURE =

Servicing Class

Data members: customerName, vehicleNo, mobileNo, totalBill

Getters and setters for all attributes

calculateTotalBill() to be implemented in derived classes

displayBill()

You need to show Service Type in DisplayBill() method.

Maintenance Class

Data members: partName, partPrice, labourCharge

Implement calculateTotalBill()

OilChange Class

Data members: oilName, oilPrice

Implement calculateTotalBill()

InvalidPriceException Class

Throw if partPrice, labourCharge, or oilPrice is negative

Message: "Invalid input! Price/Charge cannot be negative."

Sr. No.	Points to cover	Max Marks
1	Classes using inheritance, getters/setters	5+5+5
2	Calculate Total Bill	6
3	Display Bill	6
4	UserDefined Exceptions	6
5	Menu Driven Program + Comments + Naming Convention	3+2+2
	Total :-	40