F.Y.BBA-(CA) SEMESTER-II (NEP 2026)
COURSE STRUCTURE

Note: ***Click on the subject name or subject code to access the link to subject details.***

Sr. No	Particular	Subject Code	Credits	Page. No.
	MAJOR CORE			
1	Advance C Language	26BA2-A101	4	2
2	RDBMS	26BA2-A102	2	4
	VSC - VOCATIONAL SKILL COURSE (Compulsory)			
3	PL\SQL	26BA2-C103	2	5
	MINOR			
4	Lab Based on Adv C Language	26BA2-F106	2	6
	GE/OE- GENERIC/OPEN ELECTIVE (Optional)			
5	Business Mathematics and Statistics	26BA2-G110	2	12
	SEC - SKILL ENHANCEMENT COURSE (Compulsory)			
6	Lab based on PL-SQL	26BA2-H106	4	13
	AEC - ABILITY ENHANCEMENT COURSE (Compulsory)			
7	English for Business Communication - II	26BA2-I107	2	43
	VEC - VALUE EDUCATION COURSE (Compulsory)			
8	Environmental Studies and Sustainability -II	26BA2-J108	2	44
	CO-CURRICULAR COURSES			
9	Physical Education	26BA2-K111	2	46
Total Credits			**22**	

Course Code: 23BA2-A011	Subject: Advance C-Programming	Marks: 100 Credits: 4

Course Objectives:

1. To understand advanced features of C Language.
2. To understand the use of functions and storage classes in C language.
3. To understand and use of pointers in C Language.
4. To understand structure, Union and file features of C Language.
5. To understand and use of File handling in C Language.

Course Outcome:

After completing the course, the student shall be able to

CO1: Ability to understand code organization with complex data types and structures

CO2: Knowledge of modular programming and its practical implementation.

CO3: Knowledge of pointers that is used in different data structures.

CO4: Practical knowledge of Structure and Union.

CO5: Practical knowledge of handling files, and other data types-structure and Union.

Unit No.	Unit Title	Contents	No. of Lectures
I	Functions and Storage Classes	Introduction of Functions Purpose of function Function definition Function declaration Function call Types of functions- Call by value and call by reference Recursion Storage classes Macros in C	12
II	Pointers &Dynamic Memory Allocation in C language	Introduction to pointer Definition Declaration Initialization Indirection operator and address of operator Pointer arithmetic Dynamic memory allocation Functions and pointers	12
III	Structures	Introduction to structure Definition Declaration Accessing members structure operations Nested structure	12
IV	Union and Enumeration	**Union** Definition and Syntax. Working with union Initializing union Advantages of union	12

		Structures versus union **Enumeration** Enum keyword typedef keyword Working with Enum	
V	**File Handling**	File Handling Definition of files Opening modes of files Standard function fopen() fclose() feof() fseek() fewind() Using text files fgetc() fputc() fscanf() Command line arguments	12
Total No of Lectures			60

Course Code: 23BA2-A021	Subject: Relational Database Management System	Marks: 50 Credits: 2

Course Objectives:

1. To understand concept of RDBMS & use in business
2. Enables students to understand relational database concepts and transaction management concepts in database system.
3. To understand meaning and concept of Lock based and timestamp-based protocol, Deadlock handling and Recovery of database

Course Outcome:

After completing the course, the student shall be able to

CO1: Ability to understand concepts of Relational Database management system and its implementation

CO2: Knowledge of Transaction based recovery system of database

CO3: understand concepts like lock-based recovery system, timestamp-based protocol and Deadlock handling.

Unit No.	Unit Title	Content	No. of Lectures
I	Introduction To RDBMS	• Introduction to popular RDBMS product and their feature • Difference Between DBMS and RDBMS • Relationship among application programs and RDBMS	6
II	Transaction Management	• Transaction Concept • Transaction Properties • Transaction States • Concurrent Execution • Serializability	12
III	Concurrency Control & Recovery System	• Lock Based Protocol - Lock, Granting Lock, Two-Phase locking protocol, • Timestamp Based Protocol • Deadlock Handling - Deadlock Prevention, Deadlock avoidance, Deadlock Detection, Deadlock Recovery • Failure Classification • Recovery & Atomicity Log-based recovery, checkpoints. • Recovery with concurrent transaction - • Transaction Rollback, Restart recovery	12
Total No of Lectures			30

Course Code: 23BA2-C031	Subject: PL-SQL	Marks: 50 Credits: 2

Course Objectives:

- Enables students to understand PL-SQL Concept and block Diagram
- Enables student to write PL/SQL programs that use: procedure, function, trigger, cursor and package

Course Outcome:

After completing the course, the student shall be able to

CO1: Ability to understand concepts PL-SQL Programming

CO2: Knowledge of PL/SQL programming in procedure, function, package, cursor and trigger

Unit	Unit Title	Contents	No. of Lectures
I	Basics of PL-SQL	Basics of PL-SQL • Overview of PL-SQL • Data Types in PL-SQL, • PL-SQL Block Diagram • Loops in PL-SQL • Exception Handling	10
II	PL-SQL Programming	PL-SQL Programming • Functions, • Procedures • Cursor • Trigger	20
Total No of Lectures			30

MES Garware College of Commerce
FY.B.B.A.(C.A.) Semester - II
Lab Course: Lab Based on Advance C Language Code: 26BA2-F106

Q1. Write a program in C to find the square of any number using the function. **[15]**

Q2. Create a structure employee (id, name, salary). Accept details of n employees and write a menu driven program to perform the following operations**.** **[15]**

a) Search employee by id
b) Display all employees

Q3. Viva / Oral **[10]**

Q4. Lab Book **[10]**

MES Garware College of Commerce
FY.B.B.A.(C.A.) Semester - II
Lab Course: Lab Based on Advance C Language Code: 26BA2-F106

Q 1. Write a program in C to swap two numbers using function. [15]

Q 2. Create a structure Employee (id, name, salary). Display employees having salary greater than 5000. [15]

Q3. Viva / Oral [10]

Q4. Lab Book [10]

MES Garware College of Commerce
FY.B.B.A.(C.A.) Semester - II
Lab Course: Lab Based on Advance C Language Code: 26BA2-F106

Q1. Write a program in C to check a given number is even or odd using the function. [15]

Q2. Create a structure Book (Bno, Bname, Price). Accept details of n books and display them. [15]

Q 3. Journal [10]

Q. 4 Viva [10]

MES Garware College of Commerce
FY.B.B.A.(C.A.) Semester - II
Lab Course: Lab Based on Advance C Language Code: 26BA2-F106

Q 1. Write a C program to Calculate the factorial of a number using recursion. [15]

Q 2. Write a C program to allocate memory for n integers using malloc() and display the elements. [15]

Q 3. Journal [10]

Q. 4. Viva [10]

MES Garware College of Commerce
FY.B.B.A.(C.A.) Semester - II
Lab Course: Lab Based on Advance C Language Code: 26BA2-F106

Q 1. Write a C program to print Fibbonacci series using user defined function. [15]

Q 2. Create a structure Item (ino, iname, price). Count how many items have price greater than 1000. [15]

Q 3. Journal [10]

Q.4. Viva [10]

MES Garware College of Commerce
FY.B.B.A.(C.A.) Semester - II
Lab Course: Lab Based on Advance C Language Code: 26BA2-F106

Q1.C program to read Content of a File using getc() using C Program. [15]

Q2. Write a C program to accept student details by using Union. [15]

Q 3. Journal [10]

Q.4. Viva [10]

MES Garware College of Commerce
FY.B.B.A.(C.A.) Semester - II
Lab Course: Lab Based on Advance C Language Code: 26BA2-F106

Q1. Write a C Program to swap two numbers using pointers. [15]

Q2. Write a C program to find the size of the union. [15]

Q 3. Journal [10]

Q.4. Viva [10]

MES Garware College of Commerce
FY.B.B.A.(C.A.) Semester - II
Lab Course: Lab Based on Advance C Language Code: 26BA2-F106

Q1. Write a C program to count vowels and consonants in a string using pointer. [15]

Q2. Write a C program to declare, initialize an union, [15]

Q 3. Journal [10]

Q.4. Viva [10]

MES Garware College of Commerce
FY.B.B.A.(C.A.) Semester - II
Lab Course: Lab Based on Advance C Language Code: 26BA2-F106

Q1. Write a C Program to read array elements and print with addresses. [15]

Q2. Write a C program to demonstrate example of nested structure. [15]

Q 3. Journal [10]

Q.4. Viva [10]

MES Garware College of Commerce
FY.B.B.A.(C.A.) Semester - II
Lab Course: Lab Based on Advance C Language Code: 26BA2-F106

Q1. Write a C program to add two numbers using pointers. [15]

Q2. Write a C program to write text (characters) into file and print. [15]

Q 3. Journal [10]

Q.4. Viva [10]

MES Garware College of Commerce
FY.B.B.A.(C.A.) Semester - II
Lab Course: Lab Based on Advance C Language Code: 26BA2-F106

Q1. Write a C Program to Find Largest Number Using Dynamic Memory Allocation [15]

Q2. Write a C program to find number of lines in a file. [15]

Q 3. Journal [10]

Q.4. Viva [10]

MES Garware College of Commerce
FY.B.B.A.(C.A.) Semester - II
Lab Course: Lab Based on Advance C Language Code: 26BA2-F106

Q1. Write C program to reverse array using pointer arithmetic **[**15]

Q2. Define a structure student with members (rno, name and DateOfBirth).
DateOfBirth is another structure nested within student. Create one student,
set the data of the student and display the data. [15]

Q 3. Journal [10]

Q.4. Viva [10]

MES Garware College of Commerce
FY.B.B.A.(C.A.) Semester - II
Lab Course: Lab Based on Advance C Language Code: 26BA2-F106

Q1. Write a C program to reverse array elements using pointers [15]

Q2. Create a structure Book (Bno, Bname, Price). Accept details of n Books and write a menu driven program to perform the following operations options.

1. Display all Books having price > 500
2. Display Book having maximum price [15]

Q 3. Journal [10]

Q.4. Viva [10]

MES Garware College of Commerce
FY.B.B.A.(C.A.) Semester - II
Lab Course: Lab Based on Advance C Language Code: 26BA2-F106

Q 1. Create a structure student with members (rollno , name and marks). Create a structure array 10 students and display the students with max and min marks. [15]

Q 2. Write a C program to count even and odd numbers in dynamically allocated array. [15]

Q 3. Journal [10]

Q.4. Viva [10]

MES Garware College of Commerce
FY.B.B.A.(C.A.) Semester - II
Lab Course: Lab Based on Advance C Language Code: 26BA2-F106

Q1. Write C program to replace the specified line in an existing text file [15]

Q2. Write C program to accept the details of employee and display them using structure. Details consist of Employee ID, Name, Designation, Department, Salary. [15]

Q 3. Journal [10]

Q.4. Viva [10]

MES Garware College of Commerce
FY.B.B.A.(C.A.) Semester - II
Lab Course: Lab Based on Advance C Language Code: 26BA2-F106

Q1. Write a C program to create a dynamic array using malloc() and access elements using pointer arithmetic. [15]

Q2. Write C program to accept batting information of cricket team using structure. It contains player name and runs scored by player. Calculate total runs scored by cricket team. [15]

Q 3. Journal [10]

Q.4. Viva [10]

MES Garware College of Commerce
FY.B.B.A.(C.A.) Semester - II
Lab Course: Lab Based on Advance C Language Code: 26BA2-F106

Q1. Write a C program to accept the values of x and y and then display x^y using function. [15]

Q2. Write a C program to read information of student. It contains Name, Roll number, Birthday, admission date. Calculate age of student at the time of admission. [15]

Q 3. Journal [10]

Q.4. Viva [10]

MES Garware College of Commerce
FY.B.B.A.(C.A.) Semester - II
Lab Course: Lab Based on Advance C Language Code: 26BA2-F106

Q1. Write a C program to accept a string and write a function to calculate length of string. [15]

Q2. Write a program to copy one file to the other [15]

Q 3. Journal [10]

Q.4. Viva [10]

MES Garware College of Commerce
FY.B.B.A.(C.A.) Semester - II
Lab Course: Lab Based on Advance C Language Code: 26BA2-F106

Q1. Write a C program to display the file in reverse. [15]

Q2. Define a structure student with members (rno, name and DateOfBirth). DateOfBirth is another structure nested within student. Create one student, set the data of the student and display the data. [15]

Q 3. Journal [10]

Q.4. Viva [10]

MES Garware College of Commerce
FY.B.B.A.(C.A.) Semester - II
Lab Course: Lab Based on Advance C Language Code: 26BA2-F106

Q1. Write a C program to display only special characters from a file. [15]

Q2. Write C program to read the details of two workers and calculate total payment of workers using structure. [15]

Q 3. Journal [10]

Q.4. Viva [10]

MES Garware College of Commerce
FY.B.B.A.(C.A.) Semester - II
Lab Course: Lab Based on Advance C Language Code: 26BA2-F106

Q1. Write a program in C to find Sum of Array using Pointer [15]

Q2. Write a C program to write a data into File. [15]

Q3. Viva / Oral [10]

Q4. Lab Book [10]

MES Garware College of Commerce
FY.B.B.A.(C.A.) Semester - II
Lab Course: Lab Based on Advance C Language Code: 26BA2-F106

Q1. Write C program to find Largest of two numbers using function. [15]

Q2. Write C program to read Data from File. [15]

Q 3. Journal [10]

Q.4. Viva [10]

MES Garware College of Commerce
FY.B.B.A.(C.A.) Semester - II
Lab Course: Lab Based on Advance C Language Code: 26BA2-F106

Q1. Write C program to find sum of array using Pointer. [15]

Q2. Write a C program to find the student with the highest marks using a structure array. [15]

Q 3. Journal [10]

Q.4. Viva [10]

MES Garware College of Commerce
FY.B.B.A.(C.A.) Semester - II
Lab Course: Lab Based on Advance C Language Code: 26BA2-F106

Q1. Write C program to find sum of array using Pointer. [15]

Q2. Write a C program to define a structure for employee and calculate gross salary using basic salary, HRA, and DA**.** [15]

Q 3. Journal [10]

Q.4. Viva [10]

MES Garware College of Commerce
FY.B.B.A.(C.A.) Semester - II
Lab Course: Lab Based on Advance C Language Code: 26BA2-F106

Q1. Write C program to find Largest of three numbers using function. [15]

Q2. Write a C program to pass a structure to a function and display its contents**.** [15]

Q 3. Journal [10]

Q.4. Viva [10]

MES Garware College of Commerce
FY.B.B.A.(C.A.) Semester - II
Lab Course: Lab Based on Advance C Language Code: 26BA2-F106

Q1. Write a C program to declare, initialize an union, [15]

Q2. Write a C program to check whether a number is Armstrong or not using a function. [15]

Q 3. Journal [10]

Q.4. Viva [10]

MES Garware College of Commerce
FY.B.B.A.(C.A.) Semester - II
Lab Course: Lab Based on Advance C Language Code: 26BA2-F106

Q1. Write a C program to compare the contents of two files. [15]

Q2. Write a C program to convert all characters of a file into uppercase. [15]

Q 3. Journal [10]

Q.4. Viva [10]

MES Garware College of Commerce
FY.B.B.A.(C.A.) Semester - II
Lab Course: Lab Based on Advance C Language Code: 26BA2-F106

Q1. Write a C program to accept employee details using structure and display them. [15]

Q2. Write a C program to swap two numbers using call by reference. [15]

Q 3. Journal [10]

Q.4. Viva [10]

MES Garware College of Commerce
FY.B.B.A.(C.A.) Semester - II
Lab Course: Lab Based on Advance C Language Code: 26BA2-F106

Q1. Write a C program to accept employee details using structure and display them. [15]

Q2. Write a C program to swap two numbers using call by reference. [15]

Q 3. Journal [10]

Q.4. Viva [10]

MES Garware College of Commerce
FY.B.B.A.(C.A.) Semester - II
Lab Course: Lab Based on Advance C Language Code: 26BA2-F106

Q1. Write a C program to accept student details using structure and display them. [15]

Q2. Write a C program to delete a file using remove() function. [15]

Q 3. Journal [10]

Q.4. Viva [10]

Course Code: 26BA2-G110	Subject: Business Mathematics and Statistics	Marks: 100 Credits: 4

Course Objectives:

1. To develop the basic understanding of numbers & their operations.
2. To understand the concept of Commercial Mathematics, competitive aptitude & Numerical Ability.
3. To understand role, importance and applications of statistics in business.
4. To know the main properties of each measure of Central Tendency and select the most appropriate one for use with a given set of data.

Course Outcome:

After completing the course, the student shall be able to

CO1: Understand numbers & their operations with ratio and proportion.

CO2: Develop Mathematical competence for various interest related transactions and other commercial calculations.

CO3: Recognise the importance and applications of statistics in business.

CO4: Understand basic role of Central Tendency – Mean, Median, Mode & their features.

Unit	Unit Title	Contents	No. of Lectures
I	Introduction to Mathematics	1.1 Numbers & Their Operations. 1.2 HCF & LCM. 1.3 Equations & Their Solutions. 1.4 Ratio & Continued Ratio. Proportion – Continued Proportion, Direct Proportion, Inverse Proportion. 1.5 Variation – Direct & Inverse Variation, Joint Variation. 1.6 Percentage.	1
II	Commercial Mathematics	2.1 Concept of present value and future value 2.2 IRR 2.3 Simple interest and Compound interest 2.4 Nominal and effective rate of interest 2.5 Ordinary annuity and Annuity due 2.6 Sinker fund 2.7 Present value and future value of annuity 2.8 Equated Monthly Instalments (EMI) by reducing balance and flat interest methods.	15
III	Introduction to Statistics	3.1 Data Condensation: Data, Variable, Constant. 3.2 Classification: Concept of Classification, Objectives of Classification, Types of Classification. 3.3 Frequency Distribution–Cumulative Frequency and Cumulative Frequency Distribution. 3.4 Graphs & Diagrams	15
IV	Measure of Central Tendency	4.1 Concept of Measure of Central Tendency. 4.2 Types of Measure of Central Tendency – Mean, Median, Mode. 4.3 Determination of Mode and Median Graphically. 4.4 Empirical Relation Between Mean, Median & Mode. 4.5 Combined Mean. 4.6 Standard Deviation	15
Total No. of Lectures			60

MES Garware College of Commerce
F.Y.B.B.A.(C.A.) Semester - II
Lab Course: 26BA2-H106
LAB Based on PL-SQL

Credits: 2 **Marks: 50**

Consider the following entities and their relationships.

Client (client_no, client_name, address, birthdate) Policy_info (policy_no, desc, maturity_amt, prem_amt, date) Relation between Client and Policy_info is Many to Many

Constraint: Primary key, prem_amt and maturity_amt should be > 0.

Create a RDB in 3NF and write PL/SQL blocks in Oracle for the following:

Q1. Write a function which will return total maturity amount of policies of a particular client. [20]

Q2. Write a cursor which will display policy date wise client details. [20]

Q3. Viva / Oral [10]

MES Garware College of Commerce
F.Y.B.B.A.(C.A.) Semester - II
Lab Course: 26BA2-H106
LAB Based on PL-SQL

Credits: 2 **Marks: 50**

Consider the following Item_Supplier database

Item (itemno, itemname)
Supplier (supplier_No , supplier_name, address, city)
Relationship between Item and Supplier is many-to-many with descriptive attribute rate and quantity

Constraints: itemno ,supplier_No primary key

Create a RDB in 3NF and write PL/SQL blocks in Oracle for the following:

Q1. Write function to print the total number of suppliers of a particular item [20]

Q2. Write a trigger which will fire before insert or update on rate and quantity less than or equal to zero. (Raise user defined exception and give appropriate message) [20]

Q3. Viva / Oral [10]

MES Garware College Of Commerce
F.Y.B.B.A.(C.A.) Semester - II
Lab Course: 26BA2-H106
LAB Based on PL-SQL

Credits: 2 **Marks: 50**

Consider the following entities and their relationship.
Newspaper (name,language , publisher , cost)
Cities (pincode , city, state)

Relationship between Newspaper and Cities is many-to-many with descriptive attribute daily required

Constraints: name and pincode primary key

Create a RDB in 3NF and write PL/SQL blocks in Oracle for the following:

Q1. Write a trigger which will fire before insert on the cities table which check that the pincode must be of 6 digit. (Raise user defined exception and give appropriate message). [20]

Q2. Write a procedure to calculate city wise total cost of each newspaper [20]

Q3. Viva / Oral [10]

MES Garware College Of Commerce
F.Y.B.B.A.(C.A.) Semester - II
Lab Course: 26BA2-H106
LAB Based on PL-SQL

Credits: 2 **Marks: 50**

Consider the following entities and their relationships.
Client (client_no, client_name, address, birthdate) Policy_info (policy_no, desc, maturity_amt, prem_amt, date)

Relation between Client and Policy_info is Many to Many
Constraint: Primary key, prem_amt and maturity_amt should be > 0.

Create a RDB in 3NF and write PL/SQL blocks in Oracle for the following:

Q1. Write a procedure which will display all policy details having premium amount less than 5000.
Council [20]

Q2. Write a trigger which will fire before insert or update on policy_info having maturity amount less than premium amount. (Raise user defined exception and give appropriate message) [20]

Q3. Viva / Oral [10]

MES Garware College of Commerce
F.Y.B.B.A.(C.A.) Semester - II
Lab Course: 26BA2-H106
LAB Based on PL-SQL

Credits: 2 **Marks: 50**

Consider the following entities and their relationships.
Library(Lno, Lname, Location, Librarian, no_of_books) Book(Bid, Bname, Author_Name, Price, publication)

Relation between Library and Book is one to many. Constraint: Primary key, Price should not be null.

Create a RDB in 3NF and write PL/SQL blocks in Oracle for the following:

Q1. Write a function which will accept publication name from user and display total price of books of that publication. [20]

Q2. Write a cursor which will display library wise book details.(Use Parameterized Cursor) [20]

Q3. Viva / Oral [10]

MES Garware College Of Commerce
F.Y.B.B.A.(C.A.) Semester - II
Lab Course: 26BA2-H106
LAB Based on PL-SQL

Credits: 2 **Marks: 50**

Consider the following entities and their relationships.
Employee (emp_id, emp_name, address)
Investment (inv_no, inv_name, inv_date, inv_amount)

Relation between Employee and Investment is One to Many. Constraint: Primary key, inv_amount should be > 0.

Create a RDB in 3NF and write PL/SQL blocks in Oracle for the following:

Q1. Write a procedure which will display details of employees invested amount in "Mutual Fund" [20]

Q2. Write a cursor which will display date wise investment details. [20]

Q3. Viva / Oral [10]

MES Garware College Of Commerce
F.Y.B.B.A.(C.A.) Semester - II
Lab Course: 26BA2-H106
LAB Based on PL-SQL

Credits: 2 **Marks: 50**

Consider the following entities and their relationships.
Bill (billno, day, tableno, total) Menu (dish_no, dish_desc, price)

The relationship between Bill and Menu is Many to Many with quantity as descriptive attribute.

Constraint: Primary key, price should be > 0.

Create a RDB in 3NF and write PL/SQL blocks in Oracle for the following:

Q1. Write a procedure to display menu details having price between 200 to 500 which were order on 'Saturday' . [20]

Q2. Write a trigger which will fire before insert or update on Menu having price less than or equal to zero. (Raise user defined exception and give appropriate message) [20]

Q3. Viva / Oral [10]

MES Garware College of Commerce
F.Y.B.B.A.(C.A.) Semester - II
Lab Course: 26BA2-H106
LAB Based on PL-SQL

Credits: 2 **Marks: 50**

Consider the following entities and their relationships.

Plan (plan_no, plan_name, nooffreecalls, freecalltime, fix_amt) Customer (cust_no, cust_name, mobile_no)

Relation between Plan and Customer is One to Many. Constraint: Primary key, fix_amt should be greater than 0.

Create a RDB in 3NF and write PL/SQL blocks in Oracle for the following:

Q1. Write a function which will accept plan number from user and display all the details of the selected plan [20]

Q2. Write a cursor which will display customer wise plan details.(Use Parameterized Cursor) [20]

Q3. Viva / Oral [10]

MES Garware College of Commerce
F.Y.B.B.A.(C.A.) Semester - II
Lab Course: 26BA2-H106
LAB Based on PL-SQL

Credits: 2 **Marks: 50**

Consider the following entities and their relationships.

Project (pno, pname, start_date, budget, status) Department (dno, dname, HOD, loc)
The relationship between Project and Department is Many to One. Constraint: Primary key.
Project Status Constraints: C – Completed,
P - Progressive, I – Incomplete

Create a RDB in 3NF and write PL/SQL blocks in Oracle for the following:

Q1. Write a function which accept department name and display total number of projects whose status is "p"(progressive). [20]

Q2. Write a cursor which will display status wise project details of each department. [20]

Q3. Viva / Oral [10]

MES Garware College of Commerce
F.Y.B.B.A.(C.A.) Semester - II
Lab Course: 26BA2-H106
LAB Based on PL-SQL

Credits: 2 **Marks: 50**

Consider the following entities and their relationships.

Gym (Name, city, charges, scheme) Member (ID, Name, phoneNo, address)
Relation between Gym and member is one to many. Constraint: Primary Key, charges must be greater than 0.

Create a RDB in 3NF and write PL/SQL blocks in Oracle for the following:

Q1. Write a function which will accept member id and scheme from user and display charges paid by that member. [20]

Q2. Write a trigger which will fire before insert or update on Gym having charges less than 1000. (Raise user defined exception and give appropriate message) [20]

Q3. Viva / Oral [10]

MES Garware College of Commerce
F.Y.B.B.A.(C.A.) Semester - II
Lab Course: 26BA2-H106
LAB Based on PL-SQL

Credits: 2 **Marks: 50**

Consider the following entities and their relationships.

Student (rollno, sname, class, timetable) Lab (LabNo, LabName, capacity, equipment)

Relation between Student and Lab is Many to One. Constraint: Primary Key, capacity should not be null.

Create a RDB in 3NF and write PL/SQL blocks in Oracle for the following:

Q1. Write a function which will accept Lab number from user and display total number of student allocated in that lab. [20]

Q2. Write a cursor which will display lab wise student details. [20]

Q3. Viva / Oral [10]

MES Garware College Of Commerce
F.Y.B.B.A.(C.A.) Semester - II
Lab Course: 26BA2-H106
LAB Based on PL-SQL

Credits: 2 **Marks: 50**

Consider the following entities and their relationships.

Wholesaler (w_no, w_name, address, city) Product (product_no, product_name, rate)

Relation between Wholesaler and Product is Many to Many with quantity as descriptive attribute.
Constraint: Primary key, rate should be > 0.

Create a RDB in 3NF and write PL/SQL blocks in Oracle for the following:

Q1. Write a function which will accept wholesaler name from user and will display total number of items supplied by him. [20]

Q2. Write a trigger which will fire before insert or update on product having rate less than or equal to zero (Raise user defined exception and give appropriate message) [20]

Q3. Viva / Oral [10]

MES Garware College of Commerce
F.Y.B.B.A.(C.A.) Semester - II
Lab Course: 26BA2-H106
LAB Based on PL-SQL

Credits: 2 **Marks: 50**

Consider the following entities and their relationships.

Country (CId, CName , no_of_states, area, location, population) Citizen(Id, Name, mother_toung, state_name) Relation between Country and Citizen is one to many. Constraint: Primary key, area should not be null.

Create a RDB in 3NF and write PL/SQL blocks in Oracle for the following:

Q1. Write a function which will display name of the country having minimum population. [20]

Q2. Write a cursor which will display county wise citizen details. [20]

Q3. Viva / Oral [10]

MES Garware College Of Commerce
F.Y.B.B.A.(C.A.) Semester - II
Lab Course: 26BA2-H106
LAB Based on PL-SQL

Credits: 2 **Marks: 50**

Consider the following entities and their relationships.

College (code, college_name, address)
Teacher (teacher_id, teacher_name, Qualification, specialization, salary, Desg)

Relation between Teacher and College is Many to One. Constraint: Primary Key, qualification should not be null.

Create a RDB in 3NF and write PL/SQL blocks in Oracle for the following:

Q1. Write a procedure which will accept teacher name from user and display his/her college details. [20]

Q2. Write a trigger which will fire before insert or update on Teacher having salary less than or equal to zero (Raise user defined exception and give appropriate message) [20]

Q3. Viva / Oral [10]

MES Garware College of Commerce
F.Y.B.B.A.(C.A.) Semester - II
Lab Course: 26BA2-H106
LAB Based on PL-SQL

Credits: 2 **Marks: 50**

Consider the following entities and their relationships.

Driver (driver_id, driver_name, address) Car (license_no, model, year)

Relation between Driver and Car is Many to Many with date and time as descriptive attribute.

Constraint: Primary key, driver_name should not be null.

Create a RDB in 3NF and write PL/SQL blocks in Oracle for the following:

Q1. Write a function which will display the total number of person who are using "Swift" car [20]

Q2. Write a trigger which will fire before insert or update on year. If year value is more than current year. (Raise user defined exception and give appropriate message) [20]

Q3. Viva / Oral [10]

MES Garware College of Commerce
F.Y.B.B.A.(C.A.) Semester - II
Lab Course: 26BA2-H106
LAB Based on PL-SQL

Credits: 2 **Marks: 50**

Consider the following entities and their relationships.

Game (game_name, no_of_players, coach_name) Player (pid, pname, address, club_name)

Relation between Game and Player is Many to Many. Constraint: Primary key, no_of_players should be > 0.

Create a RDB in 3NF and write PL/SQL blocks in Oracle for the following:

Q1. Write a procedure which will display games details having number of players more than 5. [20]

Q1. Write a trigger which will fire before insert or update on Game having no_of_players less than or equal to zero. (Raise user defined exception and give appropriate message) [20]

Q3. Viva / Oral [10]

MES Garware College of Commerce
F.Y.B.B.A.(C.A.) Semester - II
Lab Course: 26BA2-H106
LAB Based on PL-SQL

Credits: 2 **Marks: 50**

Consider the following Item_Supplier database

Company (name , address , city , phone , share_value)
Person (pname ,pcity)

Relationship between Company and Person is M to M relationship with descriptive attribute No_of_shares i

Constraints: name,pname primary key

Create a RDB in 3NF and write PL/SQL blocks in Oracle for the following:

Q1. Write a trigger before insert or update on No_of_shares field should not be zero. (Raise a user-defined exception and give appropriate message) [20]

Q2. Write a function to display total no_of_shares of a specific person. [20]

Q3. Viva / Oral [10]

MES Garware College of Commerce
F.Y.B.B.A.(C.A.) Semester - II
Lab Course: 26BA2-H106
LAB Based on PL-SQL

Credits: 2 **Marks: 50**

Consider the following entities and their relationship.
Student (s_reg_no, s_name, s_class)
Competition (comp_no, comp_name, comp_type)

Relationship between Student and Competition is many-to-many with descriptive attribute rank and year.

Constraints: primary key, foreign key, primary key for third table(s_reg_no, comp_no, year),s_name and comp_name should not be null,comp_type can be sports or academic.

Create a RDB in 3NF and write PL/SQL blocks in Oracle for the following:

Q1. Write a function which will accept s_reg_no of student and returns total number of competition in which student has participated in a given year. [20]

Q2. Write a cursor which will display year wise details of competitions.
(Use parameterized cursor) [20]

Q3. Viva / Oral [10]

MES Garware College of Commerce
F.Y.B.B.A.(C.A.) Semester - II
Lab Course: 26BA2-H106
LAB Based on PL-SQL

Credits: 2 **Marks: 50**

Consider the following entities and their relationships.

Game (game_name, no_of_players, coach_name) Player (pid, pname, address, club_name)

Relation between Game and Player is Many to Many. Constraint: Primary key, no_of_players should be > 0.

Create a RDB in 3NF and write PL/SQL blocks in Oracle for the following:

Q1. Write a function which will return total number of football players of "Sports Club". [20]

Q2. Write a cursor which will display club wise details of players. [20]

Q3. Viva / Oral [10]

MES Garware College of Commerce
F.Y.B.B.A.(C.A.) Semester - II
Lab Course: 26BA2-H106
LAB Based on PL-SQL

Credits: 2 **Marks: 50**

Consider the following entities and their relationships.

Driver (driver_id, driver_name, address) Car (license_no, model, year)

Relation between Driver and Car is Many to Many with date and time as descriptive attribute.

Constraint: Primary key, driver_name should not be null.

Create a RDB in 3NF and write PL/SQL blocks in Oracle for the following:

Q1. Write a procedure to display car details used on specific day. [20]

Q2. Write a cursor which will display driver wise car details in the year 2018. [20]

Q3. Viva / Oral [10]

MES Garware College of Commerce
F.Y.B.B.A.(C.A.) Semester - II
Lab Course: 26BA2-H106
LAB Based on PL-SQL

Credits: 2 **Marks: 50**

Consider the following entities and their relationships.

College (code, college_name, address)
Teacher (teacher_id, teacher_name, Qualification, specialization, salary, Desg)

Relation between Teacher and College is Many to One. Constraint: Primary Key, qualification should not be null.

Create a RDB in 3NF and write PL/SQL blocks in Oracle for the following:

Q1. Write a function which will accept college name from user and display total number of "Ph.D" qualified teachers. [20]

Q2. Write a cursor which will display college wise teacher details. [20]

Q3. Viva / Oral [10]

MES Garware College of Commerce
F.Y.B.B.A.(C.A.) Semester - II
Lab Course: 26BA2-H106
LAB Based on PL-SQL

Credits: 2 **Marks: 50**

Consider the following entities and their relationships.

Country (CId, CName , no_of_states, area, location, population) Citizen(Id, Name, mother_toung, state_name) Relation between Country and Citizen is one to many. Constraint: Primary key, area should not be null.

Create a RDB in 3NF and write PL/SQL blocks in Oracle for the following:

Q1. Write a procedure to display name of citizens having mother toung “Marathi “ and from “India”; [20]

Q2. Write a trigger which will fire before insert or update on country having no_of_state less than equal to zero. (Raise user defined exception and give appropriate message) [20]

Q3. Viva / Oral [10]

MES Garware College of Commerce
F.Y.B.B.A.(C.A.) Semester - II
Lab Course: 26BA2-H106
LAB Based on PL-SQL

Credits: 2 **Marks: 50**

Consider the following entities and their relationships.

Wholesaler (w_no, w_name, address, city) Product (product_no, product_name, rate)

Relation between Wholesaler and Product is Many to Many with quantity as descriptive attribute.

Constraint: Primary key, rate should be > 0.

Create a RDB in 3NF and write PL/SQL blocks in Oracle for the following:

Q1. Write a procedure which will display details of products supplied by “Mr. Patil” [20]

Q2 . Write a cursor which will display wholesaler wise product details.(Use Parameterized cursor) [20]

Q3. Viva / Oral [10]

MES Garware College of Commerce
F.Y.B.B.A.(C.A.) Semester - II
Lab Course: 26BA2-H106
LAB Based on PL-SQL

Credits: 2 **Marks: 50**

Consider the following entities and their relationships.

Student (rollno, sname, class, timetable) Lab (LabNo, LabName, capacity, equipment)

Relation between Student and Lab is Many to One. Constraint: Primary Key, capacity should not be null.

Create a RDB in 3NF and write PL/SQL blocks in Oracle for the following:

Q1. Write a procedure to display details of students which perform practical sessions in a given Lab. [20]

Q2. Write a trigger which will fire before delete on Lab (Raise user defined exception and give appropriate message) [20]

Q3. Viva / Oral [10]

MES Garware College of Commerce
F.Y.B.B.A.(C.A.) Semester - II
Lab Course: 26BA2-H106
LAB Based on PL-SQL

Credits: 2 **Marks: 50**

Consider the following entities and their relationships.

Gym (Name, city, charges, scheme) Member (ID, Name, phoneNo, address)

Relation between Gym and member is one to many. Constraint: Primary Key, charges must be greater than 0.

Create a RDB in 3NF and write PL/SQL blocks in Oracle for the following:

Q1. Write a procedure to display member details of gym located at "Pimpri'" [20]

Q2. Write a cursor which will display gym wise member details.(Use Parametrized Cursor) [20]

Q3. Viva / Oral [10]

MES Garware College of Commerce
F.Y.B.B.A.(C.A.) Semester - II
Lab Course: 26BA2-H106
LAB Based on PL-SQL

Credits: 2 **Marks: 50**

Consider the following entities and their relationships.

Project (pno, pname, start_date, budget, status) Department (dno, dname, HOD, loc)

The relationship between Project and Department is Many to One. Constraint: Primary key.

Project Status Constraints: C – Completed,
P- Progressive,
I – Incomplete

Create a RDB in 3NF and write PL/SQL blocks in Oracle for the following:

Q1. Write a procedure to display the name of HOD who has completed maximum project. [20]

Q2. Write a trigger which will fire before insert or update on project having budget less than or equal to zero. (Raise user defined exception and give appropriate message) [20]

Q3. Viva / Oral [10]

MES Garware College of Commerce
F.Y.B.B.A.(C.A.) Semester - II
Lab Course: 26BA2-H106
LAB Based on PL-SQL

Credits: 2 **Marks: 50**

Consider the following entities and their relationships.

Plan (plan_no, plan_name, nooffreecalls, freecalltime, fix_amt) Customer (cust_no, cust_name, mobile_no)

Relation between Plan and Customer is One to Many. Constraint: Primary key, fix_amt should be greater than 0.

Create a RDB in 3NF and write PL/SQL blocks in Oracle for the following:

Q1. Write a procedure to display the plan having minimum response. [20]

Q2. Write a trigger which will fire before insert or update on mobile number having length less than or greater than10. (Raise user defined exception and give appropriate message) [20]

Q3. Viva / Oral [10]

MES Garware College of Commerce
F.Y.B.B.A.(C.A.) Semester - II
Lab Course: 26BA2-H106
LAB Based on PL-SQL

Credits: 2 **Marks: 50**

Consider the following entities and their relationships.

Bill (billno, day, tableno, total) Menu (dish_no, dish_desc, rice)

The relationship between Bill and Menu is Many to Many with quantity as descriptive attribute.

Constraint: Primary key, price should be > 0.

Create a RDB in 3NF and write PL/SQL blocks in Oracle for the following:

Q1. Write a function which accept a table number and display total amount of bill for a specific table [20]

Q2. Write a cursor which will display table wise menu details. [20]

Q3. Viva / Oral [10]

MES Garware College of Commerce
F.Y.B.B.A.(C.A.) Semester - II
Lab Course: 26BA2-H106
LAB Based on PL-SQL

Credits: 2 **Marks: 50**

Consider the following entities and their relationships.

Employee (emp_id, emp_name, address)

Investment (inv_no, inv_name, inv_date, inv_amount)

Relation between Employee and Investment is One to Many. Constraint: Primary key, inv_amount should be > 0.

Create a RDB in 3NF and write PL/SQL blocks in Oracle for the following:

Q1. Write a function which will return total investment amount of a particular client. [20]

Q2. Write a trigger which will fire before insert or update on Investment having investment amount less than 50000. (Raise user defined exception and give appropriate message) [20]

Q3. Viva / Oral [10]

MES Garware College of Commerce
F.Y.B.B.A.(C.A.) Semester - II
Lab Course: 26BA2-H106
LAB Based on PL-SQL

Credits: 2 **Marks: 50**

Consider the following entities and their relationships.

Library(Lno, Lname, Location, Librarian, no_of_books) Book(Bid, Bname, Author_Name, Price, publication)

Relation between Library and Book is one to many. Constraint: Primary key, Price should not be null.

Create a RDB in 3NF and write PL/SQL blocks in Oracle for the following:

Q1. Write a procedure to display names of book written by "Mr. Patil" and are from "DPU Library". [20]

Q2. Write a trigger which will fire before insert or update on book having price less than or equal to zero. (Raise user defined exception and give appropriate message) [20]

Q3. Viva / Oral [10]

Subject Codes 26BA2-I107	Subject: English for Business Communication	Marks : 50 Credits : 2

Course Objectives:

1. To develop effective soft skills.
2. To know the recent trends in corporate communication.

Course Outcome:

After completing the course, the student shall be able to

CO1: Demonstrate effective soft skills

CO2: Demonstrate the use of recent trends in corporate communication

Unit	Unit Title	Contents
I	Introduction to Soft Skills	1.1 Meaning, Need and Importance of soft skills. 1.2 Elements of soft skills. • Grooming, Manners & Etiquettes, • Effective Listening & Speaking • Interview Skills, Resume Writing and Job Application Letter. • Oral Presentation • Group Discussion. • Problem-solving skills • Time management abilities
II	Recent trends in corporate Communication	2.1 Technologies used in Business Communication – • Blog writing • Websites • Social Media Network: LinkedIn, WhatsApp, Twitter, Facebook, Instagram, YouTube • Video Conferencing • Email 2.2 Etiquettes in Social Media Communication. 2.3 Branding Communication and Signage communication 2.4 Emotional Intelligence and Critical thinking 2.5 Resume writing and interview preparation (physical and virtual).

Course Code: 26BA2-J108	Course: Environmental Studies and Sustainability -II	Marks: 50 Credits: 2

Course Objectives:

1. To familiarize students to policy framework of environmental protection in India.
2. To provide students an in-depth understanding of various categories of E-Waste, related environmental hazards and E-Waste Management.
3. To create awareness among students about environmental impacts of AI and Data Centers.
4. To acquaint students with environmental compliances and approval for corporates in India.

Course Outcomes:

After completing the Course, the students shall be able to:

CO1: Understand Constitutional and legal framework for environmental protection in India.

CO2: Understand & Practice responsible handling & disposal of E-Waste in individual & professional capacity.

CO3: Understand environmental impacts of Data centers.

CO4: Know environmental compliance requirements for corporates in India.

Unit	Unit Title	Contents	No. of Lectures
I	Environmental Protection: Policy & Institutional Framework	1.1Environmental pollution: types, causes, effects and controls; Air, water, soil and noise pollution 1.2 Nuclear hazards and human health risks 1.3 Climate change, global warming, ozone layer depletion, acid rain: Causes & Effects 1.4 Environmental Policy Framework: Principles of Environmental Law: • Sustainable Development • Polluter Pays Principle • Precautionary Principle • Public Trust Doctrine Environmental Laws in India: Objectives & Scheme • Environmental protection under Indian Constitution: Art.48(A), Art.51(g), Art.21 • Environment (Protection) Act, 1986 • Water (Prevention and control of Pollution) Act,1974 • Air (Prevention and Control of Pollution) Act, 1981 • Wildlife (Protection) Act, 1972 • Forest (Conservation) Act, 1980: • National Green Tribunal (NGT) Act, 2010 Institutional Framework: • Ministry of Environment, Forest and Climate Change, Government of India • Central Pollution Control Board • State Pollution Control Board 1.5 Role of Judiciary in Environment protection: Public Interest Litigation & Judicial Activism 1.6 Introduction to International initiatives for Environmental Protection	12
II	E-Waste	2.1Meaning, Categories of E-Wastes 2.2Effects on environment 2.3 Need for E-Waste Management 2.4 E-Waste Disposal Methods in India	8

		2.5 Issues & Challenges in E-Waste Management 2.6 Opportunities in E-Waste Management in India 2.7 Indian Framework related to E-Waste Management • E-Waste Management Rules,2022 with latest amendment in 2024 o Extended Producer Responsibility o Responsibilities of Companies Under E-Waste Rules o Role of Bulk Consumers o Penalties for Non-Compliance • Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 • National Action Plan for Chemical and Waste Management 2.8. Case study	
III	AI & Data Centers: Environmental Impact	3.1. Climate Cost of AI: • Carbon Footprint of AI: Energy consumption in training AI modules • Data centers • E-Waste & AI Hardware • Cost of Chips & Servers • Short Lifecycle of Hardware • AI Applications: • AI driven algorithms in Cryptocurrency mining • AI for Consumerism • Inefficient algorithms • Greenwashing AI 3.1 Data centers: Meaning & Functions 3.2 Impact of data centers on Environment 3.3 Environmental hazards of underwater data centers on Marine Ecosystem 3.4 Mitigation strategies 3.5 Green Data Centers	5
IV	Environmental Compliance Requirements for Corporates in India	4.1 Environmental clearances & regulatory approvals 4.2 CSR obligations under The Companies Act,2013 4.3 ESG: Meaning, Parameters, Importance of ESG Reporting 4.4 SEBI's BRSR (Business Responsibility & Sustainability Reporting) 4.5 Environmental Impact Assessment (EIA) 4.6 Relevant Case Studies	5
Total no. of lectures			30

Course Code: 26BA2-K109	**Course: Physical Education & Sports**	**Marks: 50** **Credits :2**

Course Objectives:

1. To develop an understanding of physical fitness, its principles, and the importance of maintaining a personal fitness program.
2. To educate students on the scientific basis of exercise, warm-up, cool-down, and its effects on the body.
3. To emphasize the importance of diet and nutrition in maintaining a healthy lifestyle and enhancing physical performance.
4. To introduce students to modern trends in sports and physical education, along with career opportunities in the field.
5. To encourage students to incorporate an active lifestyle through physical fitness and time management.
6. To provide hands-on experience in fitness and sports activities for overall well-being.

Course Outcome:

After completing the course, the student shall be able to:

CO1: Recognize the significance of physical fitness and apply key fitness principles to improve overall health and well-being.

CO2: Understand the role of exercise in maintaining health, perform proper warm-up and cool-down techniques, and analyze the effects of exercise on body systems.

CO3: Identify essential nutrients, create a balanced diet plan, and understand the relationship between diet, behavior, and overall health.

CO4: Gain awareness of advancements in sports, explore career options in physical education, and understand government initiatives like Khelo India and Fit India programs.

CO5: Develop habits for an active lifestyle, utilize free time for physical activities, and understand the importance of personal effort in fitness.

CO6: Actively participate in fitness and sports activities, improving physical endurance, flexibility, and overall fitness.

Unit	Unit Title	Contents	No. of Lectures
I	Physical Fitness	1. The Importance of Physical Fitness 2. Personal Fitness Program • Daily Activities • Diet • The Habit of Exercise • Exercise Session 3. Principles of Fitness 4. Progressive Overload 5. Variety 6. Rest and Recovery 7. Reversibility Consistency	3
II	Exercise Scientific Approach	1. Exercise 2. Importance of Warm Up 3. Cooling Down 4. Importance of Regular Exercises 8. Effect of Exercise and Training on Various Body Systems	3
III	Diet	1. Need of Diet and Nutrition 2. Classification of Nutrients 3. Balanced Diet 4. Water Balance in the Body 5. Better Health through Diet 9. Diet and Behavior	3

IV	Changing Trends and Careers in Physical Education	1. Concept, Aims & Objectives of Physical Education 2. Changing Trends in Sports- playing surface, wearable gear and sports equipment, technological advancements 3. Career options in Physical Education 4. Khelo-India Program and Fit – India Program	3
V	Active Lifestyle	1. Know yourself 2. Increase Physical Fitness 3. Make good use of your free time 4. Active during Weekly holidays 5. Know the Value of Efforts	3
VI	Participation in Fitness and Sports Activity	Every student should participate in Fitness & Sports Activity (30 Hours)	30