SEMESTER - V
Core Paper - XIV
VISUAL BASIC (PRACTICAL)

Instructional Hrs: 30   **Sub. Code: 15MCUCP03**

Max. Marks: CIA – 10; ESE – 15   **Credits: 2**

Objective: On Successful Completion of this Practical Course the Students should have

Gained Knowledge in Writing the Programs with Library Fuctions, Combo

Box, Timer Control, Scroll Box, Menus, Input Box and Procedures.

1. In VB, create a project that displays the current data and time. Use VB variable Now and the Format Library functions.

2. Write a program to enter and display text. Use text box and command button.

3. Write a program to convert temperature from Fahrenheit to Centigrade or vice – versa.

4. Write a program to select any one from a list. U combo box to display choices.

5. Write a program to calculate factorial of a given number.

6. Write a program to illustrate the use of Timer control.

7. Write a program to illustrate the usage of scroll bars.

8. Write a program to illustrate the usage of Dropdown menus.

9. Write a program to illustrate the usage of menu enhancement.

10. Write a program to illustrate the usage of pop-up menu.

11. Write a program to illustrate the usage of input boxes.

12. Write a program to find smallest of n numbers.

13. Write a program to find the sine of angle.

14. Write a program to sort list of numbers.

15. Write a program to determine deviations about an average.

SEMESTER – V
CORE PAPER - XV
OPERATIONS RESEARCH

Instructional Hrs: 75   **Sub. Code: 15MCUC515**

Max. Marks: CIA -25; ESE -75   **Credits: 5**

Objectives: Operations Research Deals Mainly with Mathematical Modeling and Formulating Real Life Problems into Mathematical Models. It also Provides Methods of Solving such Models. Hence, it makes the Students to Apply their Mathematical Knowledge in Real Life Situations.

UNIT I   15Hrs.

Linear Programming Problem: Mathematical Formation of the Problem– Graphical Solution – Simplex Method – *Two Phase Simplex Method*.

UNIT II   15Hrs.

Linear Programming Problem: Clarnes's Method of Penalities – Duality in Linear Programming & *Dual Simplex Methods*.

UNIT III   15Hrs.

Transportation Problem: Initial Basic Feasible Solution – North-West Corner Rule – *Least Cost Method* – Vogel's Approximation Method – Optimum Basic Feasible Solution – Modi Method.

Assignment Problem: Introduction – Mathematical Formulation Hungarian Assignment Method – Maximization in Assignment Problem – Unbalanced Assignment Problem – Prohibited Assignment.

UNIT IV   **15Hrs.**

Queuing Theory: Elements of Queuing System – Prohability Distribution Queuing System – *Poisson Queuing System* – Single Channel Model:

(i)   Model $\{(M/M/1): (\infty/FIFO)\}$,
(ii)   Model $\{(M/M/1):(N/FIFO)\}$

UNIT V   **15Hrs.**

Dynamic Programming: Introduction – Recursive Equation Approach – *Characteristics of DPP* – Dynamic Programming Algorithm – Solution of LPP by Dynamic Programming.

Note : *Italics* **denotes Self Study Topics**

TEXT BOOK

1.   **Kantiswarup, Gupta P.K, Man Mohan,** *Operations Research***,** Sultan Chand & Sons, New Delhi, 14th Edition, 2009.

REFERENCE BOOKS

1. **Frederick Hillier, Gerald J Liberman,** *Introduction to Operations Research* **,** Tata McGraw Hill Publications Company Ltd., New Delhi, 5th Edition, 1990.
2. **Hamdy A.Taha,** *Operations Research: An Introduction*, Prentice Hall of India Pvt. Ltd., 7th Edition, 2003.
3. **Sharma J K,** *Operations Research: Problems and Solutions*, Macmillan India Ltd., 3nd Edition, 2009.

- Question paper setters confine to the above text book only.

SEMESTER -VI
Core Paper - XVIII
INTERNET AND JAVA PROGRAMMING (PRACTICAL)

Instructional Hrs: 45   **Sub. Code: 15MCUCP04**

Max. Marks: CIA – 10; ESE – 15   **Credits: 1**

Objective: On successful Completion of this Practical Course the Students should have

Gained Knowledge about Java Evolution, Classes, Objects and Methods,

Packages and Applet Programming.

HTML:

1. Create a program using HTML to display the ordered list and unordered list of department store .

2. Create a program to display images and text using HTML tag for an, advertisement of a company products

3. Create a table to display list of products using HTML tags.

JAVA:

4. Write a program that will accept command line argument and print the same.

5. Write a program to display the months of your. The months of the year should be held in an array.

6. Write a program that has overload methods. The first method should accept no arguments, the second method will accept one string and the third method will accept a string and an integer. The first method should display the message "Rose is a beautiful flower" twice. The second method should display the message "sun flower is a beautiful flower" twice. The third method should display the message "Marigold is a beautiful flower" four times.

7.   Write a program to sort the elements of an array in ascending order.

8.   Create a class called, Numeral that accepts an array of ten numbers. Create a sub class called Numplay which has a menu as follows.

        a. Display numbers entered.
        b. Sum of the numbers.
        c. Average of the numbers.
        d. Maximum of the numbers.
        e. Minimum of the numbers.

9.   Create an applet to obtain the list of fonts available with the current java working environment.

10.   Create an interface called Variable Test which contains a method disp( ) and two variables x, y which are integers and whose value is set as 10 and 20. Create a class called VarIntTest which implements this interface. The disp( ) method should display a message "Inside interface – Variable Test and method disp". Write a method called display ( ) within VarIntTest class prints the value of x.

11.   Create two threads, one of the threads has to print even numbers and another should print odd numbers.

12.   Write a program to display the course name, fees and the duration using a String Tokenzier class.

SEMESTER - VI

PRACTICAL – MATLAB, SPSS AND MICROSOFT MATH 3.0

Instructional Hrs: 45   **Subject Code: 15MCUCP05**

Max.Marks: CIA- 40; ESE-60   **Credits :3**

MATLAB :

1. Write a program to find the following for the matrices
    (i)Sum (ii) Product (iii) Determinant (iv) Sum of the diagonal (v) 2nd row of the transpose.

2. Write a program to
    (i)Find the Eigen values, Eigen vectors & Inverse for a given matrix.
    (ii)Check whether the given matrix is orthogonal.

3. Write a program to find the solution of a given system of equations by LU Decomposition method.

4. Write a program to solve the given system of equations by using Gaussian Elimination method.

5. Write a program to find the value of
    (i) $Sin(x)$ and $Sinh(x)$ (ii) $Cos(x)$ and $Cosh(x)$ (iii) $\tan(x)$ and $\tanh(x)$ for $x = 0, \frac{\pi}{2}, \pi$

6. Write a program to find the zero of the function $x^2 - sinx$ at $x = \frac{\pi}{4}$

7. Write a program to evaluate the following (i) Single Integral (ii) Double Integral with finite limits.

8. Write a program to solve Lagrangian polynomial for the given data.

9. Write a program to solve the first and second order differential equations.

SPSS:

10. Write a program to find the following for the numerical data
    (i) Mean   (ii) Median (iii) Harmonic Mean (iv) Geometric Mean (v) Variance and
    Standard Deviation.

11. Write a program to find the probability function by using
    (i) Binomial Distribution (ii) Poisson Distribution (iii) Normal Distribution.

12. Write a program to create a database, present the data through charts and diagrams and
    summarize the data using frequencies.

13. Write a program to apply T- test for an analysis of (i) One sample (ii) Independent
    samples (iii) Paired samples.

14. Write a program to analysis means of different variables by using one way ANOVA
    table.

15. Write a program to fit a (i) straight line (ii)Exponential.

MICROSOFT MATH 3.0

16. Write a program to check whether the given function is (i) continuous (ii)Differentiable
    (iii) Analytic.