HANDIQUE GIRLS' COLLEGE
DEPARTMENT OF STATISTICS
ASSIGNMENT ON OPERATIONS RESEARCH

SEMESTER: FYUGP 6th SEMESTER **SESSION: 2025-26**

DATE OF ASSIGNMENT:29-04-2026 **DATE OF SUBMISSION :10-05-2026**

1. Establish the following statement: "Replace the item when the average annual cost reaches at the minimum which will always occur at a time when the average cost becomes equal to the current maintenance cost"
2. For the system AX=b of m linear equations in n unknowns(n>m) with rank(A)=m, define a basic solution. Hence define basic feasible solution.
3. If an LPP has a feasible solution then prove that it also has basic feasible solution.
4. Suppose the maintenance cost of a machine increases with time and the value of money decreases at a constant rate. Then find the best replacement age of the machine which minimizes the total of all future discounted costs.
5. Find the optimum replacement policy which minimizes the total of all future discounted costs for an equipment , which costs Rs. A and which needs maintenance costs of Rs. C1, C2, C3, …. , Cn,(Cn+1>Cn) during the 1^{st}, 2^{nd}, …. Years etc. respectively and further d is the depreciation value per unit of money.