

Katwa College
Internal Assessment General Examination (2020)
Semester VI Subject - Mathematics

Send the scanned answer scripts to the teachers within 11.09.2020(within 8.00 a.m.) through E-mail to the given E-mail Id at the end of question paper.

Paper : BMG6DSE1B3 (Linear Programming)
Total Marks - 10

Attempt any **five** (5) questions : [5 × 2 = 10]

1. Make the graphical representation of the set of constraints in the following LPP:

$$\begin{aligned} &\text{Maximize } z = 10x + 15y \\ &\text{subject to} \\ &x + y \geq 2 \\ &3x + 2y \leq 6 \\ &x, y \geq 0 \end{aligned}$$

and find the extreme points of the region of feasible solution. Find also the maximum value of the objective function.

2. What do you mean by convex set ? Draw a figure of a convex set.

3. Show that a hyperplane is a convex set.

4. Find the dual of the following problem:

$$\begin{aligned} &\text{Miniimize } z = 3x - 2y \\ &\text{subject to} \\ &2x + y \leq 1 \\ &-x + 3y \geq 4 \\ &x, y \geq 0 \end{aligned}$$

5. Show that the dual of the dual is the primal.

6. State fundamental theorem of duality.

7. Write down the economic interpretation of duality.

Send the scanned Answer Scripts to — **kc.deptmathematics@gmail.com**

Write following information on top of the front page of answer scripts:

Internal Assessment General Examination (2020) , Semester VI

Katwa College

Paper: BMG6DSE1B3 (Linear Programming)

Name :

Roll Number :

Registration Number :

College Roll Number:

Signature :

Date: