Roll No. 202cd005

GOODLUCK | Page No. 1
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Assignment No. 1.

[Formulation of Linear Programing Problem]

Que. A Hotel owner sells 2-dishes (or meals) - chicken & fish. for making 1 plate chicken - 2 masala packets, (2|10) packet of salt, (1|2) packet of garlic pest & 0.4 litre of water is required. And for making 1 plate fish - 1 packet masala, 0.4 packet salt, (1|2) packet garlic pest & 0.5 litre of water is required. But due to certain unfortunate conditions he only has - 6 masala packets, 2 - salt packets, 2 - garlic pest packets & 2 litres of water and 1 kg chicken & (1|2) kg fish available. On Each plate of chicken he makes ₹40 of profit & on each plate of fish he makes 35₹ profit. Formulate the above LPP. [1 plate = 200g]

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From above data,

objective function is,

$$Z = 40x + 35y$$

where,

$x \Rightarrow$ No. of plates chicken
(1 plate = 200 grams)

$y \Rightarrow$ No. of plates of fish.
(1 plate = 200 grams)

and constraints are,

$$2x + y \leq 6$$
$$0.2x + 0.4y \leq 2$$
$$0.5x + 0.5y \leq 2$$
$$0.4x + 0.5y \leq 2$$
$$0.2x \leq 1$$
$$0.2y \leq 0.5$$
$$\& \quad x, y \geq 0$$