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CIN: 30 6587208

Homework :- 5

CS-4661

2	A
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$X_1 = \text{GPA}$

$X_2 = \text{Age}$

$X_3 = \text{Type of Position}$

1 = Technical

0 = Non technical

$$\text{Target} = \theta_0 + \theta_1 X_1 + \theta_2 X_2 + \theta_3 X_3 + \theta_4 X_1 X_2 + \theta_5 X_1 X_3$$

$$\frac{\partial \text{Target}}{\partial X_1} = 1$$

now we fit the value $\theta_0 = 30$, $\theta_1 = 20$, $\theta_2 = 0.07$

$$\theta_3 = -30, \theta_4 = 0.01, \theta_5 = 10$$

$$\frac{\partial \text{Target}}{\partial X_3} = 1$$

$$\text{Target} = 30 + 20X_1 + 0.07X_2 - 30X_3 + 0.01X_1X_2$$

$$+ 10X_1X_3$$

\Rightarrow for technical position

$$\underline{X_3 = 1}$$

$$\text{Target (Technical)} = 30 + 20X_1 + 0.07X_2 - 30 + 0.01X_1X_2 + 10X_1$$

$$\text{Target (Technical)} = 30 + 20X_1 + 0.07X_2 - 30 + 0.01X_1X_2 + 10X_1$$

\Rightarrow for non-technical position, $\underline{X_3 = 0}$

$$\text{Target (non technical)}$$

$$\text{Target (non technical)} = 30 + 20X_1 + 0.07X_2 + 0.01X_1X_2$$

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Home work

CS-461

A	S
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math to eqⁿ = X_3

$X_2 = A_2$

$X_1 = A_1$

from eqⁿ [A] and [B] we found that

$$10X_1 - 30 = 0$$

$$X_1 = \frac{30}{10}$$

$$X_1 = 3$$

so it only depend on the IPA value

when

$$10X_1 - 30 > 0$$

salary of Technical position is high

[A] when

$$10X_1 - 30 < 0$$

salary of Non Technical position is high

This analysis is perfectly match with

Answer (iii)

2 | B

8 | 5

$$\begin{aligned} \text{Salary} &= 30 + (20 \times 4) + (0.07 \times 27) \\ \text{(Technical)} &+ 0.8 = 122.97 \\ &- 30 + (0.01 \times 4 \times 27) + 10(4) \end{aligned}$$

$$\boxed{\begin{aligned} \text{Salary} &= 122.97 \text{ K\$} \\ \text{(Technical)} \end{aligned}}$$

$$\begin{aligned} \text{Salary} &= 30 + (20 \times 4) + (0.07 \times 27) \\ \text{(non-technical)} &+ (0.01 \times 4 \times 27) \end{aligned}$$

$$\boxed{\begin{aligned} \text{Salary} &= 112.97 \text{ K\$} \\ \text{(non technical)} \end{aligned}}$$