

VCHOWK

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Question 1:**Marks: 4+4=8**

Compute Mean and Mode from the following data.

Mean:

Classes	Class Mid Point X	Frequency f	fX
0.7312 – 0.7313	0.73125	10	7.313
0.7314 – 0.7315	0.73145	15	10.972
0.7316 – 0.7317	0.73165	20	14.633
0.7318 – 0.7319	0.73185	25	18.296
0.7320 – 0.7321	0.73205	30	21.962
0.7322 – 0.7323	0.73225	8	5.858
0.7324 – 0.7325	0.73245	2	1.465
		$\Sigma f = 110$	$\Sigma fX = 80.499$

$$X = (\Sigma fX) / (\Sigma f)$$

$$X = 80.499 / 110$$

$$= 0.73$$

Mode:

Classes	Frequency
0.7312 – 0.7313	10
0.7314 – 0.7315	15
0.7316 – 0.7317	20
0.7318 – 0.7319	25 = f ₁
0.7320 – 0.7321	30 = f _m
0.7322 – 0.7323	8 = f ₂
0.7324 – 0.7325	2

$$f_m = 30$$

$$f_1 = 25$$

$$f_2 = 8$$

$$l = 0.7320$$

$$h = 0.0001$$

$$\text{Mode} = \hat{X} = l + \frac{f_m - f_1}{(f_m - f_1) + (f_m - f_2)} \times h$$

$$\hat{X} = 0.7320 + (30 - 25) / ((30 - 25) + (30 - 8)) \times 0.0001$$

$$\hat{X} = 0.7320 + 5 / ((5) + (22)) \times 0.0001$$

$$\hat{X} = 0.7320 + 5 / 27 \times 0.0001$$

$$\hat{X} = 0.732$$

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