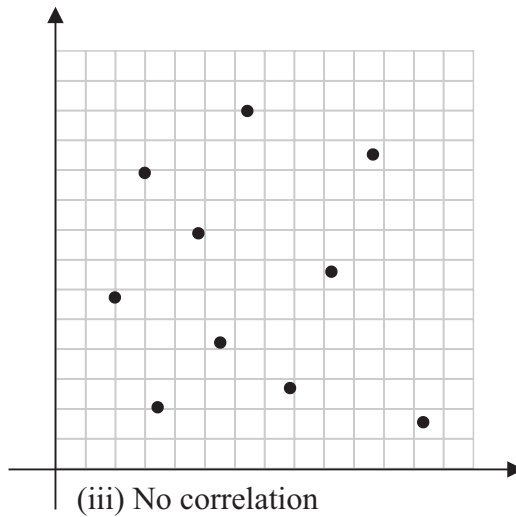
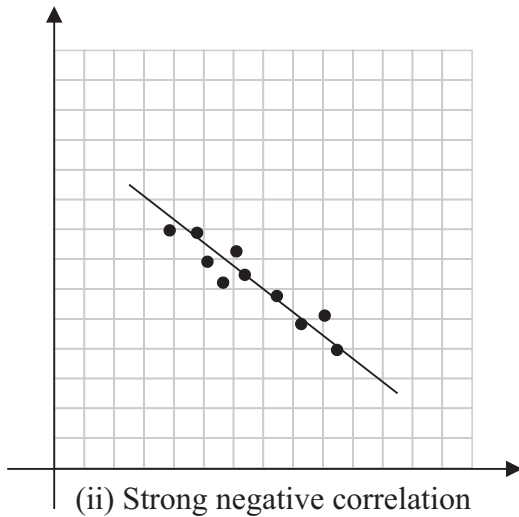
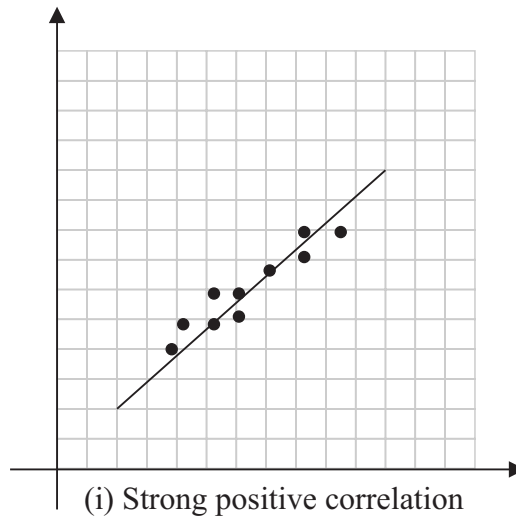


LC 2015 (SET B): PAPER 2

QUESTION 6 (25 MARKS)

Question 6 (a)

- (i) **STRONG POSITIVE CORRELATION:**
The 10 points cluster closely to a straight line that has a positive slope.
- (ii) **STRONG NEGATIVE CORRELATION:**
The 10 points cluster closely to a straight line that has a negative slope.
- (iii) **NO CORRELATION:**
The 10 points form no overall pattern



MARKING SCHEME NOTES

Question 6 (a) (i) (ii) (iii) [Scale 20D (0, 5, 10, 15, 20)]

- 5:**
 - Plots some points to illustrate a scatter graph but shows no understanding of correlation in any of the cases.
 - Plots one correlation with less than ten points
- 10:**
 - Plots one correct type of correlation.
 - Plots two types of correlation only with less than ten points
- 15:**
 - Plots two correct types of correlation
 - Plots three types of correlation some with less than ten points

Question 6 (b)

Proportion p of people who support the 'No' campaign: $p = 0.54 = 54\%$

Number of people in the sample $n = 1000$

(i) $n = 1000$

$$\text{Margin of error} = \frac{1}{\sqrt{n}} = \frac{1}{\sqrt{1000}} = 0.0316 = 3.2\%$$

(ii) $p = 54\%$

$$\begin{aligned} \text{Confidence interval} &= [54\% - 3.2\%, 54\% + 3.2\%] \\ &= [50.8\%, 57.2\%] \end{aligned}$$

FORMULA: Statistics

$$\text{Margin of error} = \frac{1}{\sqrt{n}}$$

$$\text{Confidence interval} = \left[p - \frac{1}{\sqrt{n}}, p + \frac{1}{\sqrt{n}} \right]$$

MARKING SCHEME NOTES

Question 6 (b) (i) (ii) [Scale 5C (0, 3, 4, 5)]

3: • Writes one/both formulae and stops e.g. $[\hat{p} - E \leq p \leq \hat{p} + E, \hat{p} \pm \sqrt{\frac{\hat{p}(1-\hat{p})}{n}}]$

• Works with $\sqrt{1000}$

4: • One correct solution.

• Substantive work in both parts