

MENGO SENIOR SCHOOL

EXAMINATIONS DEPARTMENT

Answer Sheet

Scores grid (For Examiner's use only)

ITEM						TOTAL
SCORE						

TOTAL	
SCORE	

S.5 EPA II 2026, P425/2

Name:..... SCORING GUIDE.....

Class & Stream:..... Term:..... Year:.....

Index Number:..... Item I (20 scores)..... Signature:.....

Do not
write in
this
margin

C.B	f	I	f.d	C.f
40-55	15	15	1	15
55-65	22	10	2.2	37
65-70	42	5	8.4	79
70-80	34	10	3.4	113
80-90	10	10	1	123
90-95	6	5	1.2	129
95-100	4	5	0.8	133
Σf=113				

Mark scored by bottom 45% of agents

$$P_{45} = L_0 + \left(\frac{\frac{45}{100} \Sigma f - C_{fb}}{f} \right) i$$

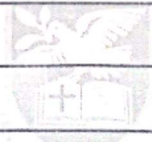
$$= 65 + \left(\frac{59.85 - 37}{42} \right) 5$$

$$= 67.7202$$

Accept the value from Ogive

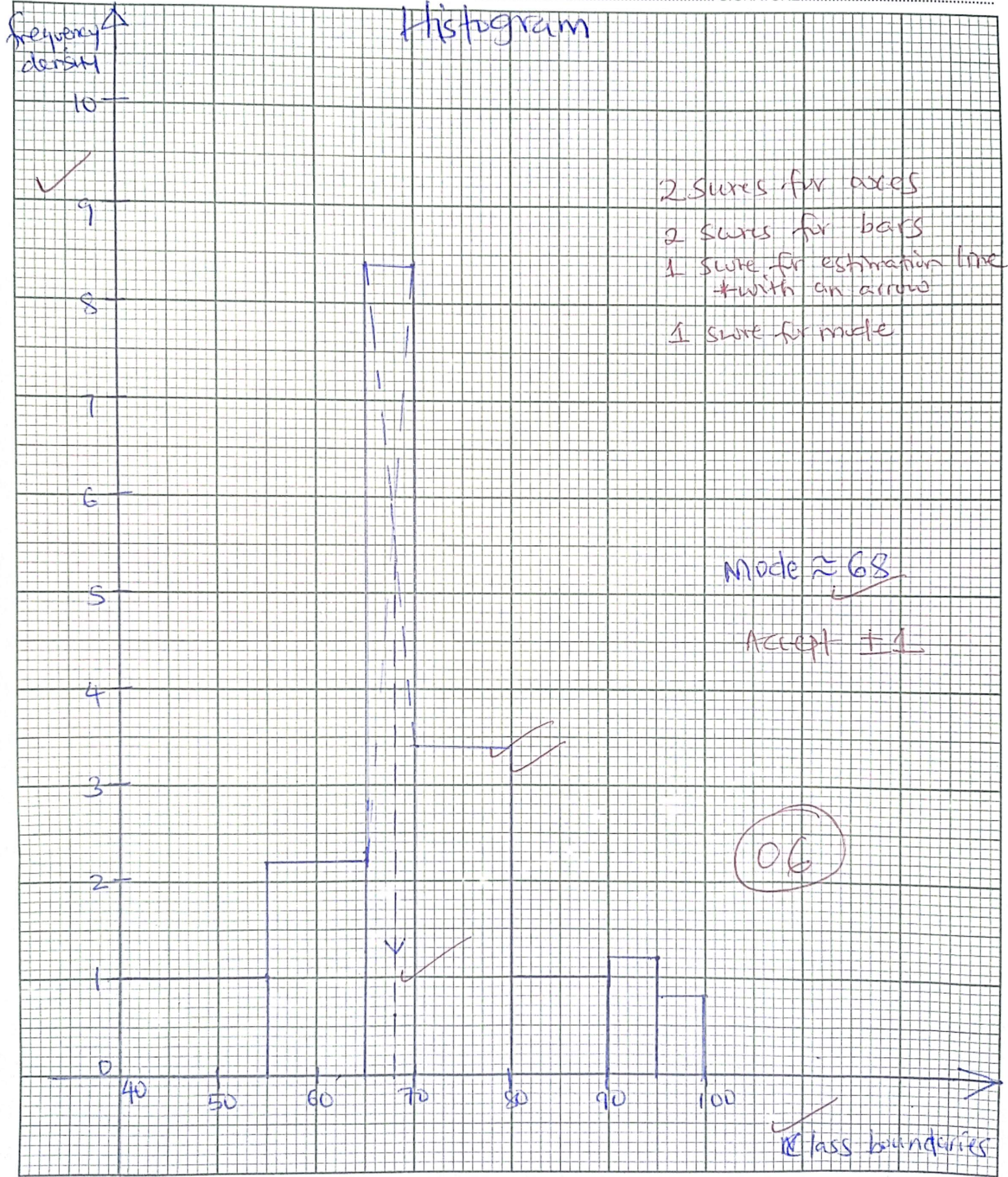
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Mark scored by the majority (mark), see a histogram



NAME OF STUDENT:..... DATE:.....

CLASS:..... INDEX NO:..... SIGNATURE:.....



(10)

Float management

$$\begin{aligned} P(\text{none of the platforms}) &= P(M' \cap N' \cap A') \\ &= 0.67 \times 0.79 \times 0.54 \\ &= 0.2858 \end{aligned}$$

$$P(\text{only one}) = P(M'no'hA) + P(M'noDnA') + P(M'no'hA) \\ = (0.33 \times 0.79 \times 0.54) + (0.67 \times 0.21 \times 0.54) + (0.67 \times 0.79 \times 0.46) \\ = 0.4603$$

$$P(\text{at most one}) = 0.2858 + 0.4603 - 0.7461 \quad \checkmark$$

Since $0.7461 > 0.50$, Stanbit Bank must implement float management measures ✓

Fraud detection

$$P(\text{only two}) = P(M \cap O \cap A) + P(M \cap O' \cap A) + P(M' \cap O \cap A)$$
$$= (0.33 \times 0.21 \times 0.54) + (0.33 \times 0.79 \times 0.46) + (0.67 \times 0.21 \times 0.46)$$
$$= 0.2221 \quad \checkmark$$

Since $0.2221 < 0.32$, StanBiz bank must require enhanced fraud detection. ✓

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Index Number:.....

Item II (20 scores)

R_A	1.5	5.5	1.5	3	5.5	9	7	4	8	✓
R_y	2.5	7.5	1	2.5	9	7.5	4	5	6	✓
d	-1	-2	0.5	0.5	-3.5	1.5	3	-1	2	
d^2	1	4	0.25	0.25	12.25	2.25	9	1	4	4

$$\sum d^2 = 34$$

$$\rho = 1 - \frac{6 \sum d^2}{n(n^2 - 1)}$$

$$= 1 - \frac{6 \times 34}{9(9^2 - 1)}$$
$$= 0.7167$$

at 5% level of significance

$$|P_T| = 0.68$$

$$|P_c| = 0.7167$$

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Since $|P_c| > |P_T|$, the correlation is significant.
Thus

Mr. Mpubani will not use manual hand pollination
since the correlation strength is significant.

Accept Kendall's rank correlation coefficient

$$C = 26$$

$$D = 6$$

$$C - D = 20$$

Kendall's coefficient ≈ 0.6 [$T_a = 0.555$, $T_b = 0.588$]

~~DATA~~

[comment basing on tabular value]



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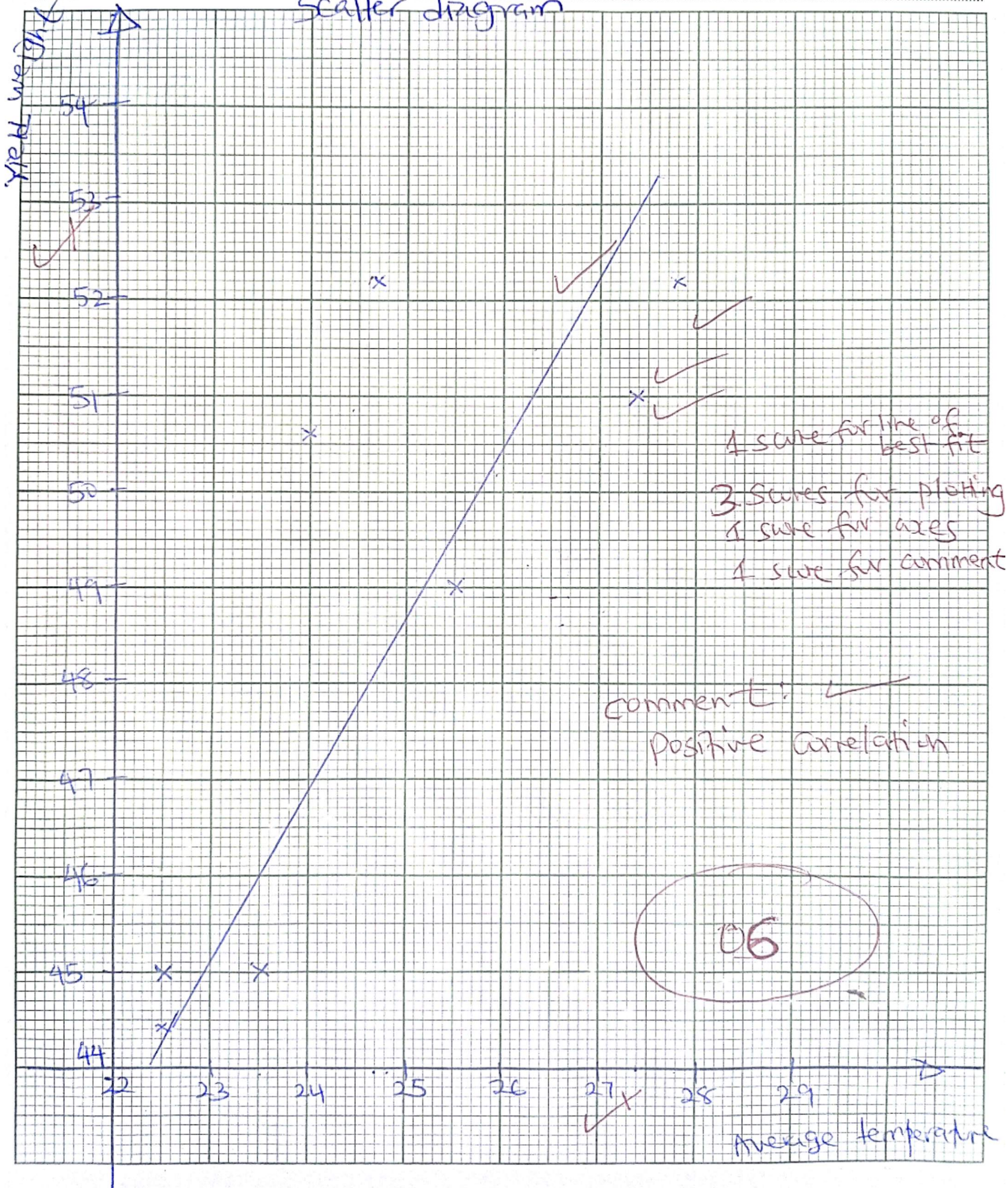
P.O. BOX 1901 KAMPALA - UGANDA

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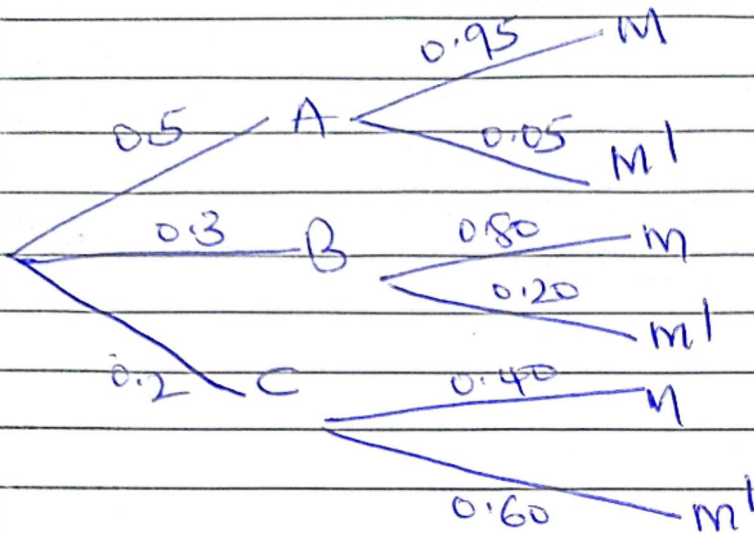
CLASS: INDEX NO: SIGNATURE:

Scatter diagram



Storage decision

let M denote passing
moisture test



$$\begin{aligned}
 P(M) &= P(A \cap M) + P(B \cap M) + P(C \cap M) \\
 &= (0.5 \times 0.95) + (0.3 \times 0.8) + (0.2 \times 0.4) \\
 &= 0.795
 \end{aligned}$$

$$\begin{aligned}
 P(M') &= 1 - 0.795 \\
 &= 0.205
 \end{aligned}$$

$$\begin{aligned}
 P(B|M') &= \frac{P(B \cap M')}{P(M')} \\
 &= \frac{0.3 \times 0.20}{0.205} \\
 &= 0.2927
 \end{aligned}$$

Since $0.2927 \geq 0.24$, Storage should not be done based on this criterion.

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