CAMBRIDGE
International Education

Cambridge IGCSE™

STATISTICS **0479/01**

Paper 1 **For examination from 2027**

MARK SCHEME

Maximum Mark: 100

Specimen

This document has **8** pages. Any blank pages are indicated.

Generic Marking Principles

All examiners must apply these general marking principles when marking candidate responses. Examiners must apply them alongside the specific content of the mark scheme or generic level descriptions for a question. Each question paper and mark scheme must also comply with these marking principles.

GENERIC MARKING PRINCIPLE 1:

Marks must be awarded in line with:

- the specific content of the mark scheme or the generic level descriptions for the question
- the specific skills defined in the mark scheme or in the generic level descriptions for the question
- the standard of response required by a candidate as exemplified by the standardisation scripts.

GENERIC MARKING PRINCIPLE 2:

Marks awarded are always **whole marks** (not half marks, or other fractions).

GENERIC MARKING PRINCIPLE 3:

Marks must be awarded **positively**:

- marks are awarded for correct/valid answers, as defined in the mark scheme. However, credit is given for valid answers which go beyond the scope of the syllabus and mark scheme, referring to your Team Leader as appropriate
- marks are awarded when candidates clearly demonstrate what they know and can do
- marks are not deducted for errors
- marks are not deducted for omissions
- answers should only be judged on the quality of spelling, punctuation and grammar when these features are specifically assessed by the question as indicated by the mark scheme. The meaning, however, should be unambiguous.

GENERIC MARKING PRINCIPLE 4:

Rules must be applied consistently, e.g. in situations where candidates have not followed instructions or in the application of generic level descriptions.

GENERIC MARKING PRINCIPLE 5:

Marks should be awarded using the full range of marks defined in the mark scheme for the question (however, the use of the full mark range may be limited according to the quality of the candidate responses seen).

GENERIC MARKING PRINCIPLE 6:

Marks awarded are based solely on the requirements as defined in the mark scheme. Marks should not be awarded with grade thresholds or grade descriptions in mind.

MARK SCHEME NOTES

The following notes are intended to aid interpretation of mark schemes in general, but individual mark schemes may include marks awarded for specific reasons outside the scope of these notes.

Types of mark

M Method marks, awarded for a valid method applied to the problem.

A Accuracy mark, awarded for a correct answer or intermediate step correctly obtained. For accuracy marks to be given, the associated Method mark must be earned or implied.

B Mark for a correct result or statement independent of Method marks.

When a part of a question has two or more 'method' steps, the M marks are in principle independent unless the scheme specifically says otherwise; and similarly where there are several B marks allocated. The notation 'dep' is used to indicate that a particular M or B mark is dependent on an earlier, asterisked, mark in the scheme.

The symbol √ implies that the A or B mark indicated is allowed for work correctly following on from previously incorrect results. Otherwise, A and B marks are given for correct work only.

Abbreviations

AG answer given on question paper
awrt answer which rounds to
cao correct answer only
dep dependent
ft follow through after error
oe or equivalent
SC special case
soi seen or implied
www without wrong working

Question	Answer	Marks	Partial Marks
1	population	**4**	B1
	correlation		B1
	interpolation		B1
	representation		B1

Question	Answer	Marks	Partial Marks
2(a)	[two of] the designs use all three fabrics	**1**	B1
2(b)(i)	13	**1**	B1
2(b)(ii)	28	**1**	B1
2(b)(iii)	9	**1**	B1
2(c)	11	**1**	B1
2(d)	25[%]	**1**	B1

Question	Answer	Marks	Partial Marks
3(a)	use $(\Sigma x)/5$ $(\Sigma x = 101.7)$	**5**	M1
	20.3 or 20.34		A1
	use $\sqrt{[(\Sigma x^2)/5 - ((\Sigma x)/5)^2]}$ $(\Sigma x^2 = 2070.47)$		M1
	0.615[14…]		A1
	correct conclusion from *their* calculated mean **and** *their* calculated SD **ft** mean at least 1 dp SD at least 3 dp (yes (satisfies the ruling))		B1√
3(b)	no; small SD is a desirable feature since it indicates high precision/little variation/consistency	**1**	B1

Question	Answer	Marks	Partial Marks
4(a)(i)	indication of column area being equal to class frequency (e.g. second class 12 teenagers)	**2**	M1
	16		A1
4(a)(ii)	indication of column area being equal to class frequency (e.g. fourth class 54 teenagers or fifth class 34 teenagers)	**3**	M1
	$((2/3) \times 54) + 34$ **or** $36 + 34$		A1
	70		A1
4(b)	evidence of need to find number from 2 hours up to 5 hours	**2**	M1
	32		A1

Question	Answer	Marks	Partial Marks
5(a)	standard deviation/range	**1**	B1
5(b)	interquartile range	**1**	B1
5(c)	median	**3**	B1
	find cf (7 12 18 26 30 39) and identify 20th item		M1
	3 **OR** B3 for 'modal class' = 5 or more		A1
5(d)(i)	find cf (10 15 21 29 33 42) and identify 21st, 22nd items	**2**	M1
	2.5 **OR** B2 for 0 if modal class or mode in **(c)**		A1
5(d)(ii)	mode is 0 **and** mode not named in **(c)**	**1**	B1

Question	Answer	Marks	Partial Marks
6(a)	(5/12) × (4/11) × (3/10) only	**2**	M1
	1/22 **oe** (0.0455)		A1
6(b)	1 – [(9/12) × (8/11) × (7/10)]	**2**	M1
	34/55 **oe** (0.618)		A1
6(c)	(4/12) × (5/11) × (3/10)	**3**	M1
	… × 6		M1
	3/11 **oe** (0.273)		A1
6(d)	Product of three probability fractions with denominators 12, 11, 10 seen	**4**	M1
	(4/12) × (8/11) × (7/10) × 3		M1
	… × (6/9) × (5/8) × (4/7)		M1
	4/33 **oe** (0.121)		A1

Question	Answer	Marks	Partial Marks
7(a)	2 10 30 45 52 55 56	**1**	B1
7(b)	horizontal plots at UCBs	**3**	B1
	vertical plots at cfs		M1
	smooth correctly-shaped curve joining 7 plotted points		A1
7(c)(i)	48.5–49.5 [km/h]	**1**	B1
7(c)(ii)	read speed for cf = 42	**2**	M1
	57.0–58.5 [km/h]		A1

Question	Answer	Marks	Partial Marks
7(c)(iii)	read cf for speed 44 km/h (≈ 16–17.5) and express as percentage of 56	**2**	M1
	28.5–31.5		A1
7(d)	read speed for cf = 30 + (1/4)(56 – 30) (= 36.5)	**2**	M1
	53.0 [km/h]–55.0 [km/h]		A1
7(e)	(17/56) × (39/56) × 2	**2**	M1
	0.423		A1

Question	Answer	Marks	Partial Marks
8(a)	correctly plotted points *(allow B1 for 6 or 7 correct)*	**2**	B2
8(b)(i)	(20 + 30 + 35 + 40)/4, (2 + 3.5 + 3 + 1)/4	**2**	M1
	(31.25, 2.375)		A1
8(b)(ii)	*m* use $(y_2 - y_1)/(x_2 - x_1)$ with any pair of averages	**3**	M1
	c use $y = mx + c$ with any average and *their m*		M1
	m = 0.0690–0.0700 **and** *c* = 0.190–0.210		A1
8(c)(i)	young trees produce a lower mass of / fewer apricots than mature trees **oe**	**1**	B1
8(c)(ii)	reasonable ruled line, from *x* = 20 to *x* = 65 not joining first and last points	**1**	B1
8(c)(iii)	read *y* from *their* line corresponding to *x* = 40 accurate reading from *their* ruled line with positive gradient	**2**	M1
	3600 kg–3900 kg		A1
8(d)	5000 kg of apricots must be produced	**3**	B1
	read *x* from *their* ruled line with positive gradient corresponding to *y* = 5		M1
	55, 56 or 57		A1

Question	Answer	Marks	Partial Marks
9(a)	as job tenure increases, injury rate decreases	**1**	B1
9(b)	in all groups, injury rate for construction highest	**1**	B1
9(c)(i)	for manufacturing **or** services any group rate multiplied by standard population figure	**5**	M1
	sum of four such products		M1
	(50.3 × 0.10) + (41.7 × 0.15) + (34.6 × 0.50) + (29.3 × 0.25) **oe or** (55.9 × 0.10) + (38.0 × 0.15) + (27.7 × 0.50) + (20.1 × 0.25) **oe**		A1
	manufacturing **awrt** 35.9		A1
	services **awrt** 30.2		A1

Question	Answer	Marks	Partial Marks
9(c)(ii)	(services because standardised injury rate is lower) **ft**	**1**	B1√
9(d)(i)	for manufacturing **or** construction any group rate multiplied by group population figure	**5**	M1
	sum of four such products		M1
	$(0.8 \times 50.3) + (1.1 \times 41.7) + (4.3 \times 34.6) + (2.5 \times 29.3)$ **oe or** $(0.7 \times 88.0) + (0.9 \times 42.5) + (2.6 \times 35.7) + (1.2 \times 32.4)$ **oe**		A1
	manufacturing 308 **or** construction 232		A1
	manufacturing greater by 76		A1
9(d)(ii)	(*their* 232/(700 + 900 + 2600 + 1200)) $\times$1000	**2**	M1
	43.0		A1

Question	Answer	Marks	Partial Marks
10(a)	use of area/r^2 to find radius	**6**	M1
	correct equation with r or r^2 ($r = \sqrt{[(180/120) \times 3^2]}$)		M1
	r = 3.7 cm		A1
	$(85/180) \times 360$ **oe** for any opinion group		M1
	correct angles calculated: Good 170°, Fair 142°, Poor 48°		A1
	fully correct chart, radius $\pm$ 0.2 cm, angles $\pm$ 2°, and labelled		A1
10(b)	proportion of visitors with a good opinion greater for the aquarium than the museum **oe**	**3**	B1
	proportion of visitors with only a fair opinion greater for the museum than the aquarium **oe**		B1
	proportions with a poor opinion same/approximately same for both attractions		B1
10(c)	attempted use of class mid-points for either (10 30 50 70)	**5**	M1*
	use $(\Sigma fx)/\Sigma f$ for either attraction (Σfx = 2590 Σf_a = 69 Σfy = 3810 Σf_m = 85)		M1dep
	37.5 aquarium **and** 44.8 museum *(Allow A1 for one correct, or answers to more than 3sf rounding to these values)*		A2
	correct conclusion from *their* calculated means (visitors who enjoyed the aquarium were generally younger than those enjoying the museum **oe**) **ft**		B1√
10(d)	systematic	**1**	B1
10(e)	closed visitors were limited in their possible responses (only three)	**1**	B1

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