Hypotheses Mark Scheme

Q1.

Question	Scheme	Marks
(a)	It is a question (not a hypothesis)	B1 (1)
(b)	Temperature Altitude / height (above sea level)	B1 B1 (2)

Notes		
(a)	B1 for recognising that a question is not acceptable as a hypothesis	

(b)	B1 for temperature o.e.
	    e.g. '°C' or 'how hot it is' B1 but e.g. 'weather' is B0
	B1 for altitude/height o.e.
	    e.g. 'metres above sea level'
	
	Accept temperature/height seen within a sentence.
	
	Two correct answers may be seen on one line.	

Q2.

Question	Answer	Additional guidance	Mark
	B1 for e.g. • Boys at the school do more exercise than girls • There is no difference between the amount of exercise boys and girls at the school do	B1 any sensible hypothesis about boys and girls and exercise (B0 for a question)	(1)

Q3.

Question	Answer	Additional guidance	Mark
	B1 eg Longer films have higher box office takings / make more money	B1 for any appropriate hypothesis relating box office takings to film runtime.	(1)

Q4.

Question		Scheme	Marks
(a)		e.g. Newer books are borrowed for longer than older books.	B1 (1)
(b)		Age of book, and length of loan (o.e.)	B1 (1)

		Notes	
(a)		Allow equivalent or converse statements regarding age and length of loan, but must not be a question.	
(b)		Accept equivalent descriptions for the correct **pair** of variables (both needed) Condone 'age' for age of book, but units or 'time' alone for either variable is B0	

Q5.

Question		Scheme	Marks
(a)		e.g. Rich countries win more <u>medals</u> than poor countries. or, The richer the country the more <u>medals</u> they win.	B1 (1)

		Notes	
(a)		Any sensible hypothesis (not a question) which implies wealth as a cause and <u>medals</u> as response. (Must mention 'medals' here.) Accept converse. (e.g. Poorer countries win more <u>medals</u>) Condone "number of <u>medals</u> is affected by wealth" B0 for a question	

Q6.

	5ST1H_01 Scheme	Marks
)A relevant hypothesis relating to books		B1 (1)
	Notes	
)B1 e.g. Students buy less ebooks than books from shops or More students buy ebooks than books from shops or The amount spent on ebooks is the same as the amount spent on books at shops (B0 for a question)		

Q7.

	5ST1F_01 Mark Scheme	Marks
	Using the new fertiliser gives a heavier crop (than if the previous/no fertiliser is used) oe.	B1 (1)
	Notes	
	Must be a statement, not a question. Other hypotheses possible and converses acceptable. Must mention <u>new fertiliser</u> and <u>wheat/crop</u> AND imply a comparison. Condone 'wheat grows faster with new fertiliser' e.g. 'new fertiliser produces a <u>high**er**</u> crop' B1 BUT 'new fertiliser produces a <u>high</u> crop' B0 (no comparison) 'Will new fertiliser produces a higher crop' B0 (a question) 'He will find out if the new fertiliser produces a higher crop' B0 (an aim not a hypothesis about what will happen)	

Q8.

Question	Scheme	Marks
	e.g. people feel less (or more) safe in the evening, OR older people feel less (or more) safe than younger people.	B1 (1)
	Notes	
	Many hypotheses are possible but must refer to idea of <u>safety</u> AND to <u>age</u> and/or <u>time of day</u>. (Allow equivalent wording if meaning is clear.) Condone prefixed with 'I believe that...' etc BUT must be a statement NOT a question. Allow 'more people feel safe in the a.m.' or 'more old people feel unsafe' etc	

Q9.

Question	Scheme	Marks
(a)	e.g. longer concerts are more expensive	B1 (1)
(b)	<u>Length</u> of concert / <u>number of</u> hours / <u>number of</u> songs	B1
	Cost, or price (of ticket)	B1 (2)

Q10.

Question	Scheme	Marks
)	Any relevant hypothesis relating to height and time/speed	B1 (1)

Q11.

Question	Answer	Additional guidance	Mark
)	B1 e.g. Students who score highly in GCSE Mathematics also score highly in A-level Mathematics	B1 for a suitable hypothesis regarding relative performance in the two exams	(1)

Q12.

Question number	Answer	Additional guidance	Mark
	B1 Not appropriate as it is a question / is not a statement	B1 for recognising that a question is not a hypothesis	(1)

Q13.

Question number	Answer	Additional guidance	Mark
	B1 e.g. Cost of computer storage reduces over time.	B1 for a suitable hypothesis including cost and time (B0 for a question)	(1)

Q14.

Question	Answer	Additional guidance	Mark
	B1 for each of five correct comments e.g. • the hypothesis should be a statement not a question • time intervals are not exhaustive (e.g. there is no option for 0 or 7+) • time intervals need to be longer as many students are likely to spend more than 6 hours a week • a scatter graph is not appropriate (as horizontal axis is not numerical data) • it might be difficult for students to know the times as they might go on social media multiple times a day for short periods • it is not necessary to know the name of the student • he has not planned to collect the relevant information for a time series graph • calculating estimates of the means is sensible • finding the gender of the student is relevant	B1 for each correct comment on the appropriateness of the hypothesis or plans for collecting, processing and presenting the data	(5)

Q15.

Question number	Answer	Additional guidance	Mark
	B1 for each of five correct comments eg • the hypothesis should be a statement not a question • pre-test a good idea as it can identify issues/problems with the reaction time test • people might do better on the caffeine test because they have done the test before – biased • need to give more detail on test protocol e.g. how much coffee to drink, how long to wait after drinking coffee before doing second test • need to plan to control extraneous variables e.g. what time of day • people may not record data in spreadsheet accurately / may lie about their time • median/interquartile range are suitable measures to compare (as data may be skewed/have outliers)/needed to draw a box plot • good idea to consider outliers/may not be appropriate to remove outliers as they could be genuine data • box plots are suitable to e.g. show the distribution of the times • need to draw comparative box plots and not just one for after the coffee has been drunk	B1 for each correct comment on the appropriateness of the hypothesis or plans for collecting, processing and presenting the data	(5)