LCCI Level 2 Certificate in Business Statistics

Overview of content

1. Management Information: The External and Internal Business Environment
   Data collection
   Data presentation
   Descriptive statistics

2. Forecasting for Business Decisions
   Correlation and regression
   Time-based data

3. Risk Management and Business Decision Making
   Probability

GROUP 1 – SELECT 20 QUESTIONS (x4 marks each)

Qu 1	MCQ Calculate the mean value of the following daily number of client visits carried out by members of a sales force. 2, 6, 4, 3, 5, 6, 3, 4, 3 and 2	
A	3.8	✔
B	3.5	
C	4.0	
D	4.2	

Qu 2	MCQ What is the median value of the following daily number of client visits carried out by members of a sales force. 2, 6, 4, 3, 5, 6, 3, 4, 3 and 2	
A	3.5	✔
B	3.8	
C	4.0	
D	4.2	

Qu 3	INSERT VALUE Calculate the mean value of the data obtained for the length of time in minutes spent by visitors to a company's website. Length of visit (minutes) Number of visitors 5 – 7 7 8 – 10 7 11 – 13 9 14 – 16 5 17 – 22 2	
A	10.9	✔

Qu 4	INSERT VALUE You have been given the following information about numbers of house buyers in an area of the local town. House prices (£) Number of buyers Under 250,000 2 250,000 – 299,999 9 300,000 – 349,999 41 350,000 – 399,999 37 400,000 – 449,999 24 450,000 – 499,999 8 Calculate the percentage of properties that cost £400,000 or more.	
A	26.4	

Qu 5	MCQ The following figures show the number of customers visiting a shop each day. 4, 5, 8, 9, 15, 18, 20, 22, 24, 29, 32, 35, 37, 40, 44, 44, 48, 52, 58, 60 What is the interquartile range for this data?	
A	29	✔
B	54	
C	20	
D	44	

Qu 6	INSERT VALUE What is the mean deviation of the following values? 5, 6, 13, 20, 26	
A	7.2	

Qu 7	INSERT VALUE Calculate the standard deviation for the following values. 4, 5, 5, 7, 9	
A	1.79	

Qu 8	INSERT VALUE Calculate the standard deviation for the following grouped data. Value Frequency 4 4 5 6 6 9 7 8 8 3	
A	1.18	

Qu 9	MRQ Which of the following components are important for time series analysis?	
A	Trends observed	✔
B	Seasonal fluctuations	✔
C	Standard deviation values	
D	Interquartile range	

Qu 10	MCQ The figures below show the sales figures for a business for a six-month period. Month Sales ($000) January 180 February 189 March 205 April 190 May 184 June 193 What would be a four-month moving average value for July?	
A	193	✔
B	192	
C	190	
D	189	

Qu 11	MRQ Which of the following methods would be suitable data gathering for an online survey?	
A	Virtual interviews	✔
B	Questionnaires	✔
C	Direct observations	
D	Social media apps	

Qu 12	MRQ The following data shows the sales of ice creams and the average temperatures for four months of a year. Which of the following describes the relationship between the two variables? Month Sales (£) Average temperature (°C) April 1,600 11 May 1,800 13 June 3,000 18 July 4,500 21	
A	Positive correlation	✔
B	Negative correlation	
C	Correlation coefficient of 0.89	✔
D	Correlation coefficient of -0.44	

Qu13	INSERT VALUE Using three similar standard coins, what is the percentage probability of throwing three tails together?	
A	0.125	

Qu 14	MCQ A social club sells tickets for a raffle. If I buy six tickets and am told that I have an overall probability of winning of 0.016, how many tickets must have been sold altogether?	
A	375	✔
B	96	
C	425	
D	210	

Qu 15	MCQ Which of the following are considered primary sources of information for research?	
A	Survey responses	✔
B	Company reports	
C	Business publications	
D	Trade periodicals	

Qu 16	MCQ Which of the following is NOT considered a reliable sampling method for obtaining valid information?	
A	Social media platform sampling	✔
B	Random sampling	
C	Stratified sampling	
D	Systematic sampling	

Qu 17	MRQ Correlation can be identified in which of the following cases?	
A	Changes in variable X cause changes in variable Y	✔
B	Changes in variable Y cause changes in variable X	✔
C	The variables are independent of one another	
D	Only one variable is considered	

Qu 18	MCQ The correlation coefficient is a measure of the linear relationship between how many variables?	
A	Two	✔
B	Three	
C	Any number of variables	
D	It only applies to one variable	

Qu 19	MRQ Which of the following could be obtained from a scatter graph drawn to show a set of data for two variables?	
A	Line of best fit	✔
B	Indication of positive or negative correlation	✔
C	Breakeven cost	
D	Profit margin	

Qu 20	MRQ Which of the following statements about correlation are true?	
A	A correlation coefficient of -1 indicates an inverse relationship between variables.	✔
B	The maximum value of correlation coefficient is +1.	✔
C	Values for the correlation coefficient lie between 0 and +1.	
D	A positive correlation coefficient indicates that as one variable increases, the other variable decreases uniformly.	

Qu 21	MCQ Where no relationship is found between variables, the correlation coefficient will have what value?	
A	Zero	✔
B	Less than +0.5	
C	Between -0.5 and +0.5	
D	-1	

Qu 22	MCQ Which characteristic of a set of data shown on a graph can be identified using the mean squared error?	
A	Noise	✔
B	Gradient	
C	Intercept on y-axis	
D	Intercept on x-axis	

Qu 23	MCQ The general relationship between the two variables, sales of a product and cost of advertising, can be represented in a simple regression equation. Which of the following is the appropriate regression formula, Assuming the *a* and *b* are both constants?	
A	Sales = (a x Advertising) + b	✔
B	Sales = (a x Advertising) - b	
C	Sales = a x Advertising x b	
D	Sales = (b – a) x Advertising	

Qu 24	INSERT VALUE 18 people working in an office of 40 people are male. What is the probability of selecting a female employee if one employee is chosen at random?	
A	0.55	

Qu 25	INSERT VALUE A company produces 28,000 microwave ovens each year. Of these, 7,000 are for the home market, 8,000 are for the USA, 6,000 are for sale in Europe. The rest are exported to a range of different countries. What is the probability of selecting an oven at random that is going to be exported?	
A	0.75	

Qu 26	MCQ The probability of traffic delays on my way to work is 0.3 but the probability of delays on the way home is 0.5. What is the probability that I will be able to travel to work and back without any delays on any day chosen at random?	
A	0.35	✔
B	0.15	
C	0.80	
D	0.20	

Qu 27	MCQ The probability of the revenue from a new product breaking even within six months is 0.35. If a company launches 60 new products over a five-year period, how many might be expected to breakeven within six months?	
A	21	✔
B	39	
C	35	
D	60	

Qu 28	INSERT VALUE Four mutually exclusive events, A, B, C and D. have probabilities of occurring of 0.1, 0.2, 0.3, and 0.4 respectively. What is the probability of A or C occurring?	
A	0.4	

GROUP 2 – SELECT 10 QUESTIONS (2 marks each)

Qu 29	True or False a) Mutually exclusive events are events that cannot happen at the same time. b) Independent events are events that do not affect the occurrence of the other events.	
A	True	
B	True	

Qu 30	True or False a) The probability of selecting the winning number from 20 equally likely options is 0.05. b) The probability of selecting the winning number from 20 equally likely options twice consecutively is 0.10.	
A	True	
B	False	

Qu 31	DROP DOWN The formula for determining probability is given by Number of (suitable) outcomes / (Total) number of possible outcomes	
A	desired possible, winning, losing	
B	Total Maximum, Minimum, Average	

Qu 32	True or False a) Expected value is calculated by multiplying together the probability of an outcome by its value. b) Expected value does not consider factors such as range of the distribution or its dispersion,	
A	True	
B	True	

Qu 33	DROP DOWN A (histogram) is a chart that shows a grouped frequency distribution. The area of each bar is (proportional to) the frequency represented.	
A	histogram bar chart, pie chart, Venn diagram	
B	proportional to equal to, larger than, smaller than	

Qu 34	DROP DOWN Dispersion of data can be measured by using the (standard deviation). The (symmetry) of a distribution can me measured by its skewness.	
A	standard deviation variance, mean, range	
B	symmetry size, median, mode	

Qu 35	True or False a) The design of a questionnaire needs to consider the type of respondent. b) The design of a questionnaire needs to consider the method used for data collection.	
A	True	
B	True	

Qu 36	True or False a) Random sampling involves placing the sample population into suitable groups with common characteristics. b) Systematic sampling collects data from members of a population at regular intervals.	
A	False	
B	True	
Qu 37	DROP DOWN Data that has been collected and is yet to be processed is known a (raw) data. It can be analysed to look for (patterns).	
A	raw basic, useful, valuable	
B	patterns differences, similarities, anomalies	

Qu 38	True or False a) For data to be valid, it should always form a straight-line when plotted on a graph. b) Venn diagrams show data in a circle, with the size of angle of each arc indicating the frequency.	
A	False	
B	False	

Qu 39	True or False a) For data relating to time periods, trend refers to the long-term behaviour of the data. b) Seasonality relates to periodic fluctuations that repeat at fixed intervals of time.	
A	True	
B	True	

Qu 40	DROP DOWN Time series, such as share prices, have a very high (random) component and forecasts for these series will be subject to a high degree of (error).	
A	random reliability, prediction, trend	
B	error cost, change, predictability	

Qu 41	True or False a) The two variables in a scatter graph are referred to as independent variables. b) Where no correlation if observed, this is known as non-linear correlation.	
A	False	
B	False	
Qu 42	DROP DOWN The line of best fit is obtained when the (sum) of the squares of the (errors) is minimised.	
A	sum number, average, magnitude	
B	errors values, data, variables	

Qu 43	True or False a) Forecasting involves the use of personal insight and experience, as well as quantitative techniques. b) Moving averages are used to smooth out fluctuations in data for regular time periods.	
A	True	
B	True	

Qu 44	DROP DOWN (Moving) averages enable forecasts to be made based on a fixed number of observations and ignore all older values. Their sensitivity can be changed by altering the (number) of observations within each time period.	
A	Moving Different, All, Estimated	
B	number frequency, magnitude, type	

TOTAL AVAILABLE MARKS = 100