

FINAL EXAMINATION

Semester	:	JANUARY 2026 SEMESTER
Programme Name	:	CERTIFICATE IN BUSINESS STUDIES
Course Code & Name	:	CBS1084 BUSINESS STATISTICS
Duration	:	3 HOURS

INSTRUCTIONS TO CANDIDATES:

1. Please read the instructions given in the question paper **CAREFULLY**.
2. The question paper consists of **FOUR (4)** questions.
3. Answer **ALL** questions in the question paper.
4. Answers to the questions are to be written into the examination booklet.
5. Electronic dictionaries, lecture notes, files or any unauthorised materials except writing equipment are strictly prohibited.

This question paper must be submitted along with all used and/or unused rough papers and/ or graph papers (if any). Candidates are **NOT ALLOWED** to take any examination paper(s) used or unused out of the examination hall.

WARNING:

The Examination Board of Peninsula College Georgetown regards cheating as a very serious offence and will not hesitate to mete out the appropriate punitive actions according to the severity of the offence committed, and in accordance with the clauses stipulated in the Students' Handbook, up to and including expulsion from Peninsula College Georgetown.

(This booklet contains 5 printed pages including this page)

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE ALLOWED TO DO SO

Answer **ALL** questions on the separate sheet provided.

[100 marks]

1. a) Table 1 shows the monthly water bill (in RM) of 48 families.

79	84	80	81	76	65
71	89	95	67	72	72
88	80	82	64	71	60
83	73	69	70	66	86
75	50	58	71	61	63
52	35	68	63	98	79
48	72	85	62	73	65
77	42	56	74	87	53

Table 1

- i) Complete the following table. (14 marks)

Class boundaries	Tally	Frequency
30.5 – 40.5		
40.5 – 50.5		
50.5 – 60.5		
60.5 – 70.5		
70.5 – 80.5		
80.5 – 90.5		
90.5 – 100.5		

- ii) Construct a histogram in graph paper using data in **1(a)(i)**. (5 marks)

- b) The following data shows the prices of 13 gifts.

40, 7, 1, 47, 17, 15, 14, 8, 47, 6, 43, 47, 34

Compute the mean, median, mode.

(6 marks)
Total: [25 marks]

2. a) Using the following data set:

12, 15, 18, 11, 19

- i) Compute the sample mean, $\bar{x}$. (4 marks)

- ii) Using the mean calculated in **2(a)(i)**, complete the following table.

Value, x	$x - \bar{x}$	$(x - \bar{x})^2$
11		
12		
15		
18		
19		

(10 marks)

- iii) Based on **2(a)(ii)**, calculate the sample standard deviation. (5 marks)

- b) Compute Q1, Q2, and Q3 for the following data set: (6 marks)

42, 35, 48, 31, 39, 45, 33

Total: [25 marks]

3. a) Compute the probability for the following case.

- i) A class has 10 students. One student is picked at random. Each student has an equal chance. What is the probability of selecting a student? (2 marks)
- ii) A car park contains 1 Toyota cars, 3 BMW cars, and 5 Tesla cars. If one car is selected at random, what is the probability that it is a Tesla car? (2 marks)
- iii) I have one RM5, one RM10 and one RM50 in my pocket. What is the probability of selecting the RM5, assuming each has an equal chance? (2 marks)
- iv) There are 2 girls and 6 boys playing in the playground. Each child has an equal chance of being selected. What is the probability of selecting a girl? (2 marks)
- v) There are 5 red pens, 0 black pens, and 2 blue pens in a pencil box. If a pen is selected at random, what is the probability that it is a black pen? (2 marks)

- b) Determine whether these events are mutually exclusive or not mutually exclusive.

- i) Tossing a coin one time to get head or tail. (2 marks)
- ii) Rolling one die one time to get number 2. (2 marks)

3. b) iii) Rolling one die one time to get even number and greater than 3. (2 marks)
- iv) Choosing one student from a class. (2 marks)
- c) Claire takes two subjects. She can either pass or fail each subject. Draw a tree diagram to show all possible outcomes and list the sample space. (7 marks)
- Total: [25 marks]

4. Table 2 is a scientist studies whether human weight is correlated with height.

Height (cm)	150	175	165	155	170	160	180
Weight (kg)	45	70	60	50	65	55	75

Table 2

- a) Compute the value of $xy, x^2, y^2, \sum x, \sum y, \sum x^2, \sum xy, \sum y^2$

Height (cm), x	Weight (kg), y	xy	x^2	y^2
150	45			
155	50			
160	55			
165	60			
170	65			
175	70			
180	75			

(13 marks)

- b) Compute the coefficient of correlation. (8 marks)
- c) Interpret the coefficient of correlation in **4(b)**. (4 marks)
- Total: [25 marks]

- END OF QUESTIONS -

FORMULAE LIST

Mean

$$\bar{X} = \frac{\sum X}{n}$$

$$\bar{X} = \frac{\sum f \cdot X_m}{n}$$

Sample standard deviation

$$s = \sqrt{\frac{\sum (X - \bar{x})^2}{N - 1}}$$

Coefficient of Variation, CV

$$CV = \sigma / \mu \times 100$$

Coefficient of correlation

$$r = \frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{[n(\sum x^2) - (\sum x)^2][n(\sum y^2) - (\sum y)^2]}}$$

Coefficient of determination

$$\text{Coefficient of determination} = r^2$$

- END OF FORMULAE LIST -