

**FINAL
ALTERNATIVE ASSESSMENT**
Examination Paper

(COVER PAGE)

Session : April 2022

Programme : Diploma In Business Management Programme (DBM/DBMS)

Course : WBUS1105: Business Analytics

Date of Examination : July 31, 2022 (Sunday)

Time : 8.00am – 10.30am Reading Time : Nil

Duration : 2 Hours : 30 Minutes

Note: 30 minutes is added into the duration of the examination to factor in any connectivity matters and for you to scan and upload your scripts.

Special Instructions :

This paper consists of **FIVE (4)** structured-type questions. Answer **ALL** the questions hand written in either **BLUE/BLACK** ink on foolscap papers. Hence, upload the answers (**PDF FORMAT**) in Blackboard by using **TINY SCANNER/CAM SCANNER**

Materials permitted : Non-Programmable Calculator

Materials provided : Nil

Examiner(s) : Saemila Devi Paranirubasingam & Bark Chee Beng

Moderator : Dinesh Kumar Govindasamy

This paper consists of 6 printed pages, including the cover page

DIPLOMA IN BUSINESS MANAGEMENT PROGRAMME (DBM/DBMS)
WBUS1105: BUSINESS ANALYTICS
FINAL ALTERNATIVE ASSESSMENT: APRIL 2022 SESSION

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Question 1

- (a) Describe, in your own words, the difference between the following:
- (i) Quantitative and qualitative data. (2 marks)
 - (ii) Discrete and continuous data. (2 marks)
 - (iii) Population and sample. (2 marks)
- (b) Indicate if the following quantitative data are discrete or continuous.
- (i) Number of patients waiting to see the doctor at a clinic. (1 mark)
 - (ii) The distance travelled by students to college everyday. (1 mark)
 - (iii) The number of t-shirt required by participants for the upcoming Analytics Conference, according to their size. (1 mark)
 - (iv) The waiting time required for an operator to respond to a customer service call, rounded to the nearest minute. (1 mark)
- (c) The following data are the weekly salary earned by 200 part-time workers working in a F&B industry, measured to the nearest dollar.

Salary (RM)	300-349	350-399	400-449	450-499	500-549	550-599
Number of workers	23	50	48	34	27	18

- (i) Construct another frequency distribution table for the above data to show the class boundaries and cumulative frequency. (2 marks)
- (ii) Construct a histogram to show the distribution of the salaries. (4 marks)
- (iii) Draw a cumulative frequency polygon. (4 marks)
- (iv) From the graph in part (iii), estimate the earnings of 50% of the part-time workers. (2 marks)

- (d) The following table shows the distribution of age in a sample taken from the residence in a small town.

Age (in years)	8 - 12	13 - 17	18 - 23	24 - 39	40 - 59
Frequency	16	18	22	28	16

If the above data were to be represented using a pie chart, calculate the angle of the section representing the ages 18 – 23. (3 marks)

[TOTAL: 25 MARKS]

Question 2

- (a) The marks obtained for a quiz given last semester are randomly sampled and the data obtained are as follows:

23 25 28 29 31 37 39 34 31 39
 33 48 48 40 48 54 55 80 75 61

Find the following:

- (i) Mode. (1 mark)
 (ii) Median. (2 marks)
 (iii) Mean. (3 marks)

- (b) The table below shows the number of books read by 40 students in a given week.

Number of Books	Frequency
2	6
3	8
4	12
5	8
6	6

Calculate:

- (i) the mean number of books read in a week. (3 marks)
 (ii) the standard deviation of the number of books read in a week. (3 marks)

- (c) Determine if the following scenarios is a mutually exclusive event or not mutually exclusive event.
- (i) A story book contains fifteen pages. You randomly open to a page. The page number is four or ten. (1 mark)
- (ii) A box of candies contains six red candies and four green candies. Two of the red candies and one of the green candies contains nuts inside. You randomly select a candy to eat. It is a red candy or it contains nuts inside. (1 mark)
- (d) Peter writes his name on 5 black cards and Parker writes his name on 6 white cards.

P E T E R **P A R K E R**

One of the eleven cards is chosen at random. Find the probability that

- (i) the letter on the card is R. (1 mark)
- (ii) the card is white. (1 mark)
- (iii) the card is white or the letter on the card is R. (1 mark)
- (iv) the card is white and the letter on the card is P. (1 mark)
- (v) the card is white and the letter on the card is T. (1 mark)
- (e) Hazel has a box of sweets with different coloured wrappers. The table below gives the probability of the colour of a randomly chosen sweet.

Colour	Red	Orange	Purple	Green	Pink	Blue
Probability	0.2	0.15	0.1	0.25	?	0.1

- (i) What is the value of the missing probability? (2 marks)

If a sweet is picked randomly from the box, what is the probability that

- (ii) it will be a sweet wrapped in orange or purple wrapper. (1 mark)
- (iii) it will not be a sweet wrapped in green wrapper. (1 mark)
- (iv) it will not be a sweet wrapped in red, pink or blue wrapper. (2 marks)

[TOTAL: 25 MARKS]

Question 3

- (a) A speed detector is used to measure speeds of cars on a major highway. The speeds are normally distributed with a mean of 110 km/hr and a standard deviation of 10 km/hr. What is the probability that a randomly chosen car, is travelling at

- (i) below 90 km/hr? (3 marks)
- (ii) more than 125 km/hr? (3 marks)
- (iii) between 85 km/hr and 105 km/hr? (5 marks)

If 25 cars were selected, find the probability that a randomly chosen car will be travelling at

- (iv) more than 108 km/hr. (3 marks)
- (v) between 109.5 km/hr and 110.5 km/hr. (5 marks)
- (b) A home baker bakes 20 cakes for a party. Below is the weight of all 20 cakes baked for the party.

5.3	4.9	5.1	5.8	5.3	5.6	5.4	4.8	5.4	5.1
5.2	4.7	5.0	5.5	4.7	5.1	5.2	5.0	5.3	5.4

- (i) Calculate the mean weight of all 20 cakes. (3 marks)
- (ii) 8 cakes are selected at random from the above.

5.6	4.9	5.0	4.7	4.8	5.4	5.3	5.1
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Calculate the sample mean and the sampling error for the randomly selected cakes. (3 marks)

[TOTAL: 25 MARKS]

Question 4

- (a) In your own words, why is sampling important in a research? (2 marks)
- (b) To estimate the average study hours per week of a Form Five student, a researcher collects the data from a random sample of 75 Form Five students. The mean and the standard deviation are found to be 48 hours and 7 hours respectively. Calculate the 99% confidence interval of the average study hours of the population. (5 marks)

- (c) The data below represents measurements of the height of Bonsai plants that were given a certain fertilizer.

Plant No.	Height (in)
1	19.1
2	14.7
3	10.2
4	16.1
5	13.9
6	12.0
7	20.7
8	8.6
9	24.2
10	17.3
11	11.6
12	18.5
13	28.7
14	15.3
15	13.5

- (i) Find the mean and standard deviation for the above data. (6 marks)

Given that the population standard deviation for the height of Bonsai plants is 5.19.

- (ii) Construct a 90% confidence interval of the population mean of the height of Bonsai plants after giving the fertilizer. (5 marks)
- (iii) Construct a 95% confidence interval of the population mean of the height of Bonsai plants after giving the fertilizer. (5 marks)
- (iv) Comment on your answers for part (ii) and (iii). (2 marks)

[TOTAL: 25 MARKS]

~THE END~