



Private & Confidential

FACULTY OF BUSINESS

FINAL EXAMINATION

Student ID (in Figures) :

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Student ID (in Words) : _____

Subject Code & Name : **STA1314 Business Statistics**
Trimester& Year : January – April 2021
Lecturer/Examiner : Suhada Binti Ishak
Duration : 2 Hours

INSTRUCTIONS TO CANDIDATES

1. This question paper consists of 2 parts:
PART A (70 marks) : SEVEN (7) short answer questions. Answer ALL questions in the separate sheet.
PART B (30 marks) : TWO (2) long answer questions. Answer ALL questions. Answers are to be written in the separate sheet.
2. Only BLACK or BLUE ballpoint pens are allowed to be used in answering the questions.
3. Students must SCAN and UPLOAD the answers in CN by using PDF format.
4. All answers must be submitted in ONE file only.

WARNING: The University Examination Board (UEB) of BERJAYA University College regards cheating as a most 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 BERJAYA University College of Hospitality.

Total Number of pages = 6 (Including the cover page)

PART A : SHORT ANSWER QUESTIONS (70 MARKS)

INSTRUCTION(S) : Answer **ALL** questions in the Answer Booklet(s) provided.

Question 1

Define primary and secondary sources of data in data collection. Provide examples for these two sources of data collection.

(10 marks)

Question 2

A survey of 1,085 adults asked “Do you enjoy shopping for clothing for yourself?” The results indicated that 51% of the females enjoyed shopping for clothing for themselves as compared to 44% of the male. Supposed that the results were shown in the following table:

Enjoy Shopping for Clothing	Gender		Total
	Male	Female	
Yes	238	276	514
No	304	267	571
Total	542	543	1085

- a. Construct contingency table based on total percentages, row percentages, and column percentages.

(9 marks)

- b. Interpret conclusions can you reach from these analysis.

(1 mark)

[Total: 10 marks]

Question 3

Compute the mean and median score of 70 bowlers who took part in a bowling competition at KB Bowling Centre from the following table.

Score	60-70	70-80	80-90	90-100	100-110	110-120
Number of Bowlers	4	10	12	20	8	16

(10 marks)

Question 4

Faezah and Sabrina wants to make an observation on how long computers in college have been used. The age distribution for a sample of computers in a college is shown in Table below.

Age (Months)	Number of computers
21-25	10
26-30	35
31-35	16
36-40	14
41-45	12
46-50	10
51-55	3

- Calculate the interquartile range of the computers. (4 marks)
- Determine the variance and standard deviation of the computers. (6 marks)

[Total: 10 marks]

Question 5

- A sample of 30 randomly selected oranges was taken from the large population, and their diameters were measured. The mean diameter of the sample was 91mm and standard deviation was 0.8cm. Assuming a Normal distribution, construct a 90% confidence interval about population mean for the whole population of oranges. (5 marks)
- A novel had more than 500 pages and a random sample of 25 pages of the novel are taken, and the number of words on each page are counted. The mean number of words for the sample was 323 words and the standard deviation was 38.4 words. Determine a 99% confidence limit for the mean number of words for the pages of the entire novel. (5 marks)

[Total: 10 marks]

Question 6

Today, full time college students report spending a mean of 27 hours per week on academic activities, both inside and outside the classroom. Assume that the standard deviation of time spent on academic activities is 4 hours. If you select a random sample of 16 full-time college students,

- Compute the probability that the mean time spent on academic activities is at least 26 hours per week.
- Calculate the hours per week, if there is 85% chance that the student spent on academic activities which is less than the sample mean.

(5 marks)

(5 marks)

[Total: 10 marks]

Question 7

A manager is interested in testing whether three populations of interest have equal population means. Simple random samples of size 10 were selected from each population. The following ANOVA table and related statistics were computed.

ANOVA: Single Factor				
Summary				
Groups	Count	Sum	Average	Variance
Sample 1	10	507.18	50.72	35.06
Sample 2	10	405.79	40.58	30.08
Sample 3	10	487.62	48.76	23.13

ANOVA				
Source	SS	df	MS	F
Between Groups	578.78	2	X	Z
Within Groups	794.36	27	Y	
Total	1,373.14	29		

- Complete the table above by finding the value of X, Y and Z.
- State the appropriate null and alternative hypothesis.
- Conduct the appropriate test of the null hypothesis assuming that the populations have equal variances and the populations are normally distributed. Use a 0.05 level of significance.

(5 marks)

(2 marks)

(3 marks)

[Total: 10 marks]

END OF PART A

PART B**: LONG ANSWER QUESTIONS (30 MARKS)****INSTRUCTION(S)**: Answer **ALL** questions in the Answer Booklet(s) provided.

Question 1

A production manager, Nazirul, collected data on production cost and quantity produced for 10 consecutive days (in thousands dollars). These data are given in the following table and were recorded to investigate the relationship between the production cost (\$) and quantity produced and it is indicated using x and y .

Outlet	Production cost, (\$'000) (x)	Quantity produced, ('000) (y)
1	10	20
2	13	28
3	20	38
4	18	35
5	17	33
6	15	30
7	16	34
8	14	29
9	11	23
10	12	25

- a. Based on the table above, you are required to:
- Develop the regression equation for these data. (10 marks)
 - Interpret the coefficient in term of this problem. (1 mark)
- b. Determine the value of quantity produced, y if $x = 25$ and give your comment. (4 marks)

[Total: 15 marks]

Question 2

The quality-control manager at a compact fluorescent light bulb (CDF) factory needs to determine whether the mean life of a large shipment of CDFs is equal to 7,500 hours. The population standard deviation is 1,000 hours. A random sample of 64 CDFs indicates a sample mean life of 7,250.

- a. Determine if there is any evidence that the mean life is different from 7,500.
(Use $\alpha = 0.05$)
(5 marks)
- b. Compute p - value and interpret its meaning.
(5 marks)
- c. Construct 95% confidence interval estimate of the population mean life of the CDFs.
(5 marks)

[Total: 15 marks]

END OF EXAM PAPER