



Private & Confidential

FACULTY OF BUSINESS

FINAL EXAMINATION

Student ID (in Figures) :

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Student ID (in Words) : _____

Subject Code & Name : **STA2114 BUSINESS STATISTICS**
Trimester& Year : September – December 2021
Lecturer/Examiner : Suhada Binti Ishak
Duration : 3 Hours

INSTRUCTIONS TO CANDIDATES

1. This question paper consists of 2 parts:
PART A (30 marks) :THIRTY (30) multiple choice questions. Answer ALL questions.
Please write your answers clearly in a SEPARATE sheet.
PART B (70 marks): FOUR (4) problem solving questions. Answer ALL questions.
Answers are to be written in the SEPARATE sheet.
2. Only 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 = 9 (Including the cover page)

PART B
INSTRUCTION(S)

: PROBLEM SOLVING QUESTIONS (70 MARKS)
: FOUR (4) problem solving questions. Answer ALL questions. Answers are to be written in the Answer Booklet provided.

Question 1

- a. The file below contains the overall miles per gallon of 2020 small SUVs:

26	22	23	21	25	24	22	26	25	22
21	21	22	22	23	24	23	22	21	22

- i. Compute the mean, median and standard deviation (6 marks)
 - ii. Calculate the first quartile and third quartile (4 marks)
 - iii. Construct the boxplot and describe its shape. Identify the skewness of the data. (4 marks)
- b. A manufacturing company regularly conducts quality control checks at specified periods on the products it manufactures. Historically, the failure rate for LED light bulbs that the company manufactures is 5%. Suppose a random sample of 10 LED light bulbs is selected. Calculate the probability that
- i. Two or fewer of the LED light bulbs are defective (3 marks)
 - ii. Compute the mean and standard deviation of the binomial distribution for the number of failure rate for LED light bulbs (3 marks)

[Total: 20 marks]

Question 2

- a. The owner of Britten's Egg Farm wants to estimate the mean number of eggs produced per chicken. A sample of 20 chickens shows they produced an average of 20 eggs per month with a standard deviation of 2 eggs per month. Develop the 95% confidence interval for the population mean.
- (7 marks)
- b. A recent national survey found that high school students watched an average (mean) of 6.8 movies per month with a population standard deviation of 1.8. The distribution of number of movies watched per month follows the normal distribution. A random sample of 36 college students revealed that the mean number of movies watched last month was 6.2. At the 0.05 significance level, can we conclude that college students watch fewer movies a month than high school students?

(8 marks)

[Total: 15 marks]

Question 3

A study reported that 48% of 16-to 29- year –olds, 42% of 30-to 49- year –olds, 34% of 50-to 64- year –olds preferred to use the social media as the medium of communication. Supposed that the study was based on a sample size of 200 respondents in each group.

- Construct the contingency table based on the information given. (4 marks)
- Compute the expected frequencies for each cell. (6 marks)
- Compute χ^2_{STAT} . Is there evidence of a significance difference among the age groups with respect to the proportion who preferred to use media social as the medium of communication? (Use $\alpha = 0.05$) (5 marks)

[Total: 15 marks]

Question 4

A town is considering to increase the number of policeman in an effort to reduce crime. A survey was conducted in other towns of similar sizes to determine the relationship between the number of policeman and the number of crimes reported. A random sample of eight towns was selected and the information gathered in table below:

Town	A	B	C	D	E	F	G	H
Number of Policeman	8	10	18	20	10	5	4	5
Number of crimes	17	13	5	4	7	21	19	6

- Assuming a linear relationship between Profiled Customers and Annual Sales, use the Least-Square Method to find the regression coefficients b_0 and b_1 . (10 marks)
- Predict the number of crime if number of policeman is 15. (2 marks)
- Determine the coefficient of determination, r^2 , and interpret its meaning. (8 marks)

[Total: 20 marks]

END OF EXAM PAPER