



**Private & Confidential**

**FACULTY OF BUSINESS**

**FINAL EXAMINATION**

Student ID (in Figures) : 

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Student ID (in Words) : \_\_\_\_\_  
\_\_\_\_\_

Subject Code & Name : **STA2114 BUSINESS STATISTICS**

Trimester& Year : May – August 2022

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. Candidates are not allowed to bring any unauthorized materials except writing equipment and scientific calculator into the Examination Hall. Electronic dictionaries are strictly prohibited.
3. This question paper must be submitted along with all used and/or unused rough papers and/or graph paper (if any). Candidates are NOT allowed to take any examination materials out of the examination hall.
4. Only ballpoint pens are allowed to be used in answering the questions, with the exception of multiple choice questions, where 2B pencils are to be used.

**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 = 10 (Including the cover page)**

**PART B****: PROBLEM SOLVING QUESTIONS (70 MARKS)****INSTRUCTION(S)**

**: FOUR (4)** problem solving questions. Answer **ALL** questions.  
Answers are to be written in the Answer Booklet provided.

---

**Question 1**

The number of column inches of classified advertisements appearing on Mondays in a certain daily newspaper is normally distributed with population mean of 320 and population standard deviation of 20 inches. Find the probability that:

- i. There will be less than 340 column inches of classified advertisement. (4 marks)
- ii. There will be between 280 and 360 column inches of classified advertisement. (5 marks)
- iii. Compute the value of column inches of classified advertisements for a randomly probability is less than 0.1. (6 marks)

**[Total: 15 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. An appliance manufacturer claims to have developed a compact microwave oven that consumes a mean of no more than 250 W. From previous studies, it is believed that power consumption for microwave ovens is normally distributed with a population standard deviation of 15 W. A consumer group has decided to try to discover if the claim appears true. They take a sample of 20 microwave ovens and find that they consume a mean of 257.3 W.
  - i. Identify the parameter of interest for the above scenario (2 marks)
  - ii. Write the appropriate hypotheses to determine if the manufacturer's claim appears reasonable. (2 marks)
  - iii. Determine the critical value for a test with a level of significance of 0.05. (2 marks)

- iv. Calculate the value of the test statistic for the above scenario. (2 marks)

**[Total: 15 marks]**

### Question 3

The dean of a college is interested in the proportion of graduates from his college who have a job offer on graduation day. He is particularly interested in seeing if there is a difference in this proportion for accounting and economics majors. In a random sample of 100 of each type of major at graduation, he found that 65 accounting majors and 52 economics majors had job offers. If the accounting majors are designated as "Group 1" and the economics majors are designated as "Group 2," perform the appropriate hypothesis test using a level of significance of 0.05.

- i. Referring to the above scenario, state hypotheses the dean should use. (2 marks)
- ii. Construct the contingency and expected cell frequency for the above data. (6 marks)
- iii. Determine the value of test statistics of this test. (5 marks)
- iv. Determine the conclusion for this test. (2 marks)

**[Total: 15 marks]**

### Question 4

The management of a chain electronic store would like to develop a model for predicting the weekly sales (in thousands of dollars) for individual stores based on the number of customers who made purchases. A random sample of 12 stores yields the following results:

Customers	Sales (Thousands of Dollars)
907	11.20
926	11.05
713	8.21
741	9.21
780	9.42
898	10.08
510	6.73
529	7.02
460	6.12
872	9.52
650	7.53
603	7.25

- a. Sketch the scatter plot for the above data. (6 marks)
- b. Calculate the values of the estimated intercept and slope. (9 marks)
- c. Identify the value of the coefficient of determination. (7 marks)
- d. Identify the value of the standard error of the estimate. (3 marks)

**[Total: 25 marks]**

**END OF EXAM QUESTIONS**