



BERJAYA BUSINESS SCHOOL

FINAL EXAMINATION

Student ID :

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Student Name :

Course Code & Name : **BGN3301 Statistics For The Service Industry**
Trimester & Year : January – April 2018
Lecturer/Examiner : Tey Sheik Kyin
Duration : 3 Hours

INSTRUCTIONS TO CANDIDATES

- This question paper consists of 2 parts:**
PART A (20 marks) : TWO (2) short answer questions. Answers are to be written in the Answer Booklet provided.
PART B (80 marks) : FOUR (4) problem solving questions. Answers are to be written in the Answer Booklet provided.
- Candidates are not allowed to bring any unauthorised materials except writing equipment into the Examination Hall. Electronic dictionaries are strictly prohibited.**
- 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.**
- 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.

Total Number of pages = 7 (Including the cover page)

PART A : SHORT ANSWER QUESTIONS (20 MARKS)

INSTRUCTION(S) : TWO (2) short answer questions. Answer the question in the Answer Booklet provided.

Question 1

A Gallup poll indicated that 40% of Americans had confidence in U.S. banks. Interestingly, 49% also said that they had confidence in their main or primary bank. The results are based on telephone interviews conducted March 24, 2017 with 1012 adults living in the United States, aged 18 and older.

- a. Describe the population of interest. (2 marks)
- b. Describe the sample that was collected. (2 marks)
- c. Is 40 % a parameter or a statistic? (2 marks)
- d. Is 49% parameter or a statistic? (2 marks)

[Total: 8 marks]

Question 2

The manager of the customer service division of a major consumer electronics company is interested in determining whether the customers who have purchased a Blu-ray player made by the company over the past 12 months are satisfied with their products. Determine the possible responses of the following are values from quantitative variable or qualitative variable. If the variable is quantitative, determine whether the variable is discrete or continuous. If the variable is qualitative, determine the measurement scale.

- a. How many Blu-ray players made by other manufacturers have you used? (2 marks)
- b. Are you happy, indifferent, or unhappy with the performance per dollar spent on the Blu-ray player? (2 marks)

- c. What is your annual income? (2 marks)
- d. How would you rate the quality of your purchase experience with 1=excellent, 2=good, 3=decent, 4=poor, 5=terrible? (2 marks)
- e. What brand of Blu-ray player did you purchase? (2 marks)
- f. How much time do you use the Blu-ray player every week on the average? (2 marks)
- [Total: 12 marks]**

END OF PART A

PART B : PROBLEM SOLVING QUESTIONS (80 MARKS)

INSTRUCTION(S) : FOUR (4) problem solving questions. Answer ALL questions in the Answer Booklet(s) provided.

Question 1

- a. A box of twelve gloves contains five left-handed gloves and seven right-handed gloves.
- If two gloves are randomly selected from the box, without replacement (the first glove is not returned to the box after it is selected), what is the probability that first glove selected will be left-handed and second glove selected will be right-handed?
(2.5 marks)
 - If you were sampling with replacement (the first glove is returned to the box after it is selected), what is the probability that both gloves selected will be right-handed?
(2.5 marks)
- b. Travelbyus is an Internet-based travel agency wherein customers can see videos of the cities they plan to visit. The number of hits daily is a normally distributed random variable with a mean of 10,000 and a standard deviation of 2,400.
- What is the probability of getting more than 12,000 hits?
(2.5 marks)
 - What is the probability of getting fewer than 9,000 hits?
(2.5 marks)
- [Total: 10 marks]**

Question 2

- a. After a long and distinguished career, a racehorse retired. His finishes were recorded and listed below. Use a graphical technique to summarize the data and interpret your findings.

Finish	Frequency
First	11
Second	24
Third	35
Fourth	28
Fifth	20
Sixth	6
Seventh	5
Eighth	3

(6 marks)

- b. When parking a car in downtown parking lot, drivers pay according to the number of hours or fraction thereof.

x	1	2	3	4	5	6
$p(x)$	0.24	0.18	0.13	0.10	0.07	0.28

- i. Find the probability when $P(X \geq 3)$ (1 mark)
- ii. Find the probability when $P(2 < X \leq 6)$ (1 mark)
- iii. Find the probability when $P(1 < X < 3)$ (1 mark)
- iv. Find the mean and standard deviation of the number of hours cars are parked (6 marks)

[Total: 15 marks]

Question 3

A sample of nine customers spent for lunch (\$) at a fast food restaurant are:

4.20 5.03 5.86 6.45 7.38 7.54 8.46 8.47 9.87

- a. Construct a 95 percent confidence interval estimate for the population mean amount spent for lunch (\$) at a fast food restaurant, assuming a normal distribution. Interpret the interval constructed.
(6 marks)
- b. At the 0.05 level of significance, is there evidence that the mean amount spent for lunch is different from \$6.50? (Hint: state the null hypothesis and alternative hypothesis)
(10 marks)
- c. What assumption about the population distribution is needed in order to conduct the t test in (b)?
(2 marks)
- d. Construct a boxplot to evaluate the assumption made in (c). Do you think that the assumption needed in order to conduct the t test in (b) is valid?
(7 marks)

[Total: 25 marks]

Question 4

Critics of television often refer to the detrimental effects that all the violence shown on television has on children. However, there may be another problem. It may be that watching television also reduces the amount of physical exercise, causing weight gains. A sample of 15 10-year-old children was taken. The number of pounds each child was overweight was recorded (a negative number indicates the child is underweight). In addition, the number of hours of television viewing per week was also recorded. These data are listed here.

Television	42	34	25	35	37	38	31	33
Overweight	18	6	0	-1	13	14	7	7
Television	19	29	38	28	29	36	18	
Overweight	-9	8	8	5	3	14	-7	

- Use a graphical technique to display the data. (4 marks)
- Compute the covariance and coefficient of correlation. Interpret your answer based on covariance and coefficient of correlation. (10 marks)
- Use the least-squares method to determine the regression line. (8 marks)
- Interpret the coefficients obtain from part (c). (4 marks)
- Determine the coefficient of determination, r^2 and interpret its meaning. (4 marks)

[Total: 30 marks]

END OF EXAM PAPER