



BERJAYA BUSINESS SCHOOL

FINAL EXAMINATION

Student ID (in Figures) :

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Student ID (in Words) : _____

Subject Code & Name : **BGN3301 Statistics For The Service Industry**
 Trimester & Year : May – August 2017
 Lecturer/Examiner : Ms. Chong Poh Ling
 Duration : 3 Hours

INSTRUCTIONS TO CANDIDATES

1. This question paper consists of 2 parts:
 - PART A (20 marks) : TWO (2) short answer questions. Answer ALL questions. Answers are to be written in the Answer Booklet provided.
 - PART B (80 marks) : FOUR (4) structured-type questions. Answer ALL questions. Answers are to be written in the Answer Booklet provided.
2. Candidates are not allowed to bring any unauthorized materials except writing equipment 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 of Hospitality 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 (20 MARKS)

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

Question 1

- a. Define 'Population' and 'Sample'. (3 marks)

- b. Why do we use 'Population' and 'Sample'? (3 marks)

- c. Provide an example where population is not important, but sample plays a significant role. (4 marks)

[Total: 10 marks]

Question 2

- a. Define 'Quantitative data'. Explain 'discrete' and 'continuous' with regards to quantitative variables. (4 marks)

- b. Define 'Qualitative data'. (2 marks)

- c. Provide an example for quantitative data and an example for qualitative data. (4 marks)

[Total: 10 marks]

END OF PART A

PART B : STRUCTURED-TYPE QUESTIONS (80 MARKS)

INSTRUCTION : FOUR (4) structured-type questions. Answer ALL questions in the Answer Booklet(s) provided.

Question 1

- a. A survey of family doctor practices was carried out. Each practice was given a score from 1 to 6, where 1 represents high cause for concern and 6 represents low cause for concern. The data are shown in the bar chart.

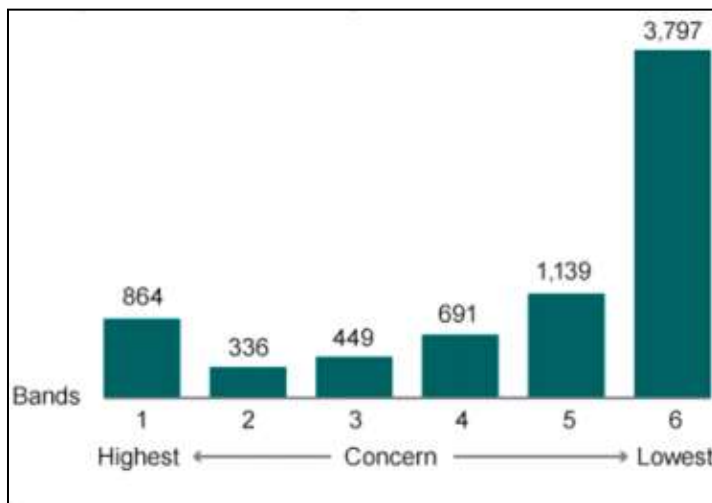


Figure 1: Survey of GP Practices

- i. Find the value of the mean. (2 marks)
- ii. Discuss whether or not the mean is a useful measure for these data. (4 marks)
- iii. Imagine that you are reporting this story on a radio programme so that listeners cannot see the bar chart. Write a short paragraph summarising the most important features of the data for your listeners. (4 marks)

b. A sample of the variable x assumes the following values:

57	51	58	52	50	59	57	51	59	56
50	53	54	50	57	51	53	55	52	54

Compute:

- (i) Number of variables, n (2 marks)
- (ii) Sum of variables, $\sum x$ (2 marks)
- (iii) Mean, \bar{x} (2 marks)
- (iv) Standard deviation, s (3 marks)
- (v) Variance, s^2 (2 marks)
- (vi) Median (2 marks)
- (vii) Mode (2 marks)
- (viii) Range (2 marks)
- (ix) Coefficient of Variation, CV (3 marks)

[Total: 30 marks]

Question 2

a) Two dice are rolled.

A = sum of two dice equals 3

B = sum of two dice equals 7

C = at least one of the dice shows a 1

i) What is $P(A|C)$?

(1 mark)

ii) What is $P(B|C)$?

(1 mark)

iii) Are A and C independent? What about B and C?

(2 marks)

b) From past records, the probability that a machine will need correcting adjustments during a day's production run is 0.2.

If there are 6 of these machines running on a particular day, find the probability that:

i) no machine need correcting

(2 marks)

ii) just one machine needs correcting

(2 marks)

iii) exactly two machines need correcting

(2 marks)

iv) more than two machines need correcting

(2 marks)

c) The time taken to complete jobs of a particular type is known to be normally distributed with mean 6.4 hours and standard deviation 1.2 hours. What is the probability that a randomly selected job of this type takes:

i. less than 7 hours?

(2 marks)

ii. less than 6 hours?

(2 marks)

iii. between 6 and 7 hours?

(1 marks)

[Total: 18 marks]

Question 3

Malaysia is a country which produces vehicles tyres. One of the major Malaysian tyre makers wants to review its warranty for their "Fire Power" brand. The warranty is for 100,000 kilometres. The tyre company believes that the tyre actually lasts more than 100,000 miles. A sample 25 tyres revealed that the mean number of miles is 110,000 kilometres with a standard deviation of 15,000 kilometres. Test the hypothesis with a 0.05 significance level.

- a. What is H_0 ? (2 marks)
- b. What is H_1 ? (2 marks)
- c. What is the decision rule? (2 marks)
- d. What is the calculated value of z ? (4 marks)
- e. What is our decision? (2 marks)

[Total: 12 marks]

Question 4

- a. Determine a confidence level of 95% using the following information:
Sample mean = 2.6 Standard deviation = 1.836 Sample size = 80 (10 marks)
- b. A Malaysian record label wants to learn how internet downloads of music in Malaysia are affecting CD sales. They randomly choose 600 families in various parts of the country and count the number of individual songs that are downloaded in an hour. The sample mean was 3947 with a sample standard deviation of 104. Determine a 90% confidence interval for this data. (10 marks)

[Total: 20 marks]

END OF EXAM PAPER