MAASAI MARA UNIVERSITY

REGULAR UNIVERSITY EXAMINATIONS
2017/2018 ACADEMIC YEAR
THIRD YEAR SECOND SEMESTER

SCHOOL OF TOURISM AND NATURAL RESOURCES
BACHELOR OF TOURISM MANAGEMENT

COURSE CODE: BTM 321
COURSE TITLE: STATISTICS AND DATA ANALYSIS

DATE: 20TH APRIL 2018 **TIME: 1100 -1300HRS**

INSTRUCTIONS TO CANDIDATES
Answer Question ONE and any other 2 questions

This paper consists of 3 printed pages. Please turn over.

Question 1

a. Define the term variable and give two types of variables. (3 marks)
b. A researcher had three variables in his questionnaire; "Gender", "Age" and "Job Rank". State the suitable scale of measure for each of the three variables. (3 marks)
c. State the suitable graph that can be used to present data each of the above variables in b above. (3 marks)
d. State five importance of statistics to a social scientist. (5 marks)
e. The data below shows the number of tourists who visited 10 hotels in Kenya in January 2009;

HOTEL	No. of tourists
A	56
B	43
C	23
D	45
E	67
F	34
G	12
H	43
I	56
J	34

i. Calculate the mean number of tourists who visited the hotels. (2 marks)
ii. Calculate the median number of tourists who visited the hotels. (2 marks)
iii. Calculate the interquartile deviation for the number of tourists. (5 marks)
iv. Calculate the standard deviation for the number of tourists. (5 marks)
v. What can you comment on the spread of the number of tourists. (2 marks)

Question 2

a. In a university, the number of female students is 1500 while that of the male students is 2000. The number of government sponsored students is 1800 while that of the self-sponsored students is 1700. The number of female students who are self-sponsored are 700, while the number of male students who are government sponsored are 900. A student is picked at random from the university, determine the probability that;

I. That the student selected is a female student. (1 mark)
II. That the student is a self-sponsored student. (1 mark)
III. That the student self-sponsored and male. (2 marks)
IV. The student is male or government sponsored. (3 marks)
V. The student is female given that she is government sponsored. (3 marks)

b. A student threw two dice simultaneously and records the sum of the numbers that stood on top of the two dice. Determine the probability that;
   I. That the sum is 5. (1 mark)
   II. That the sum is more than 5. (1 mark)
   III. That the number in one of the dice is 3 and the sum is 5. (2 marks)
   IV. One of the numbers is 4 or the sum is 5. (3 marks)
   V. That the number in one of the die is 3 given that the sum is 5. (3 marks)

Question 3

a. The data below shows the distribution of Elephants in various game parks, in Africa. Where X refers to the number of Elephants in the game parks.

Number of Elephants	Number of Game Parks
$10 \leq x < 20$	42
$20 \leq x < 30$	56
$30 \leq x < 40$	72
$40 \leq x < 50$	45
$50 \leq x < 60$	43
$60 \leq x < 70$	21

Determine;
   i. The mean number of Elephants. (3 marks)
   ii. Median Number of Elephants. (3 marks)
   iii. The modal number of Elephants. (3 marks)
   iv. P_{45} for the number of Elephants. (2 marks)
   v. Percentile rank P_{R41} and P_{R55}. (4 marks)

b. Define the term Kurtosis and give any two types of Kurtosis. (3 marks)
c. What is the relationship between mean, median and mode for a right skewed data set? (2 marks)

Question 4

a. The arrival of tourists in a Hotel in Mombasa is normally distributed with a mean of 30 and a variance of 100. Determine the probability that the number of tourists arriving in the hotel is.
   i. Exactly 50 tourists. (1 mark)
   ii. Less than 20 tourists. (2 marks)
   iii. More than 55 tourists. (2 marks)
   iv. At least 35 tourists. (2 marks)
   v. At most 45 tourists. (2 marks)
   vi. More than 15 tourists but less than 50 tourists. (3 marks)
b. A sample of 100 was drawn from a population with a mean of 455 and a standard deviation 50. Determine.
   i. The probability that the sample mean is more than 465. (2 marks)
   ii. The probability that the sample mean will be more than 445. (2 marks)
   iii. The sample mean that will yield a probability of at least 68%. (4 marks)

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