KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2015/2016

FIRST SEMESTER EXAMINATIONS FOR THE DEGREE OF BACHELOR OF ECONOMICS

EES 201 : STATISTITICS FOR ECONOMISTS I

DATE: Wednesday 25th November 2015

TIME: 2.00p.m – 4.00p.m

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INSTRUCTIONS

ANSWER ANY THREE QUESTIONS

**Question One**

Given the data

|  |  |
| --- | --- |
| Class | F |
| 20-40 | 5 |
| 40-60 | 7 |
| 60-80 | 15 |
| 80-100 | 10 |
| 100-120 | 22 |
| 120-140 | 12 |
| 140-160 | 8 |
| 160-180 | 4 |

1. Calculate mean, median and mode (9marks)
2. Calculate the interquartile range (6marks)
3. Estimate skewness and kurtosis and comment on the answers obtained (8⅓ marks)

**Question two**

(I )Distinguish between the following terms (12marks)

1. Primary and secondary data
2. Time series and panel data
3. Probability and non- probability sampling methods

(II )Explain the advantages and disadvantages of mail questionnaire method (7⅓ marks)

(III )Distinguish between mutually exclusive and independent events in probability theory (4marks)

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**Question three**

1. In a certain population, 10% of the population can be classified as being high risk for a heart attack. Three people are randomly selected from this population. What is the probability that exactly one of the three are high risk? (5marks)
2. Suppose we have additional information in the previous example. We know that only 49% of the population are females. Also, of the female patients, 8% are high risk. A single person is selected at random. What is the probability that it is a high risk female? (5marks)
3. Suppose a rare disease affects only one out of every 1000 people in a population. And suppose there is a good, but not perfect, test for this disease: if a person has the disease
4. , the test comes back positive 99% of the time. On the other hand, the test also produces some false positives: 2% of the uninfected people also test positive. And someone just tested positive. What are his chances of having this disease? (7marks)
5. Given the following information

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| X | 12 | 20 | 28 | 36 | 40 | 45 | 40 |
| 2 | 4 | 28 | 3 | 3 | 5 | 2 | 4 |

Estimate the geometric mean (6⅓ marks)

**Question four**

1. A survey indicates that 41% of American women consider reading as their favorite leisure time activity. You randomly select four women and ask them if reading is their favorite leisure time activity. Find the probability that: (1) exactly two of them respond yes, (2) at least two of them respond yes, and (3) fewer than two respond yes. (9marks)
2. The average distance covered by vehicles in a motor rally may be given as 24km with a standard deviation of 6 km. in another competition, set of students earned 3000 points with a standard deviation of 15 points. Compute coefficient of variations and compare their dispersion. (5marks)
3. Discuss the advantages and disadvantages of the mean as a measure of central tendency (6marks)
4. Explain the justification of sampling (3⅓ marks)

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**Question five**

1. Let x, y and z be any three items. Arrange these in all possible permutations and combinations (5marks)
2. Assume a boy flips a coin three times in an experiment. Prepare a distribution to determine the probability of three consecutive heads as outcome. (6marks)
3. Explain any four importance of statistics to economists. (4marks)
4. Using any hypothetical data of your choice, sketch ogive curve, estimate median and the third quartile ( 8⅓marks)

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