

**JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY**

**SCHOOL OF HEALTH SCIENCES**

**UNIVERSITY EXAMINATION FOR THE BACHELOR OF SCIENCE IN COMMUNITY HEALTH DEVELOPMENT**

**3rdYEAR 2ndSEMESTER 2016/2017 ACADEMIC YEAR**

**NAIROBI CENTRE**

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**UNIT CODE: SBI 3326**

**UNIT TITLE: BIOSTASTICS 1**

**EXAM VENUE: 9TH FL RM 2 STREAM: (BSc. CHD & PH)**

**DATE: 16/12/16 EXAM SESSION: 2.00 – 4.00 PM**

**TIME: 2.00 HOURS**

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**INSTRUCTIONS**

1. **Answer all questions in section A and ANY other TWO questions in section B.**
2. **Candidates are advised not write on the question paper.**
3. **Candidates must hand in their answer booklets to the invigilator while in the examination room.**

**SECTION A. Answer all questions (30 marks)**

1. i)Define the term statistics? (1 mark)

ii) State any two types of statistics? ( 1 marks)

(iii)Define the term data in relation to statistics (1 Mark)

2..The number of child births recorded in 50 maternity homes were recorded as follows:

50 99 81 86 69 85 93 63 92 65

77 74 76 71 90 74 81 94 67 75

95 81 68 105 99 68 75 75 76 73

79 74 80 69 74 62 74 80 79 68

79 75 75 71 83 75 80 85 81 82

(i)Construct a frequency distribution table, using class intervals 45-54, 55-64, etc.(4marks)

(ii)Bar graph ( 4 Marks)

3.(i)If the body temperature of healthy persons in a community is distributed normally with a mean 370c arid standard deviation 0.3° C, what proportion of persons will have a body temperature 37.50C or above? (1 mark)

(ii)Find the proportion of persons in the population within a range of body temperature 36.5° C to 37.5° C, (2 mark)

4. The table below shows the weight of 75 people.

Weight (kg) Number of people

10 – 20 1

20 – 30 7

30 – 40 8

40 – 50 11

50 – 60 19

60 – 70 10

70 – 80 7

80 – 90 5

90 – 100 4

100 – 110 3

Calculate:

(i) The mode (1 mark)

(ii) The median (1 mark)

(iii)Std deviation (1 mark)

5. Differentiate the following terms as used in statistics:

i) Discrete and continuous variable (1marks)

ii) Qualitative and quantitative variable (1marks)

iii) Sample and population (1 mark)

6)Given the days to maturity for 40 short term investments as:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 70 | 64 | 99 | 55 | 64 | 89 | 87 | 65 |
| 62 | 38 | 67 | 70 | 60 | 69 | 78 | 39 |
| 75 | 56 | 71 | 51 | 99 | 68 | 95 | 86 |
| 57 | 53 | 47 | 50 | 55 | 81 | 80 | 98 |
| 51 | 36 | 63 | 66 | 85 | 79 | 83 | 70 |

**Required:**

(a) Prepare the frequency distribution for the data using the class interval 31 –

40, 41 – 50, 51 – 60 …, along with the class boundaries. (3 marks)

(b) In addition to (a) above, prepare the columns for the midpoint, relative frequency, cummulative frequency and the cummulative relative frequency (3 marks).

7). A sack contains six unbiased dice (each of six faces numbering 1 to 6).

The dice are distinguished in six colours: yellow, white, red orange, green and blue.

Use tree diagram to answer the following: -

(a) If a dice is picked at random, what is the probability that it is white and the score obtained from it is even ? ( 1 mark)

(b) If a dice is picked at random, what is the probability that it is red with even score or a yellow with red score? (1 mark)

(c) If two dice are picked at random, what is the probability that they are green and white? (1 mark)

8) A grocer bag contains 25 red and 35 green apples. Two apples are picked from the bag with replacement. Find the probability that

(i) They are both red ( 1 mark)

(ii) They are both green (1 mark)

(iii) They are of the same colour. (1 mark)

**SECTION B. Answer any two questions ( 40 marks)**