

Bago University
Department of Zoology
First Semester Examination, March 2019

Third Year
(Zoology Specialization)

Answer ALL questions

Zool. 3104
Descriptive Statistics
Time Allowed: (3) Hours
(10 marks)

I. State TRUE or FALSE to the following statements.

1. One examines a small part of the group called a sample.
2. Temperature recorded every half hour at a weather bureau is discrete data.
3. Raw data are collected data that have been organized numerically.
4. The class mark is also called the class midpoint.
5. A bimodal frequency curve has three maxima.
6. At least one head appears in two tosses of a fair coin of the probability is $\frac{3}{4}$.
7. A continuous probability distribution is the normal distribution.
8. Three or more events are called mutually exclusive.
9. The probability of nonoccurrence of the event called its failure.
10. The population mean by the corresponding Greek letter μ .

II. Complete the following statements with appropriate words.

(10 marks)

1. The X axis is horizontal and the Y axis is -----.
2. A graph is a pictorial presentation of the relationship between -----.
3. Yearly incomes of college professors represent the ----- data.
4. Graphic representation of relative-frequency distributions can be obtained from the -----.
5. A frequency curve is sometimes called a smoothed frequency -----.
6. The standard deviation of a sample's data defined with -----.
7. E_1E_2 the event that both E_1 and E_2 occur sometimes called a ----- event.
8. A random variable is also known as a ----- variable.
9. The variable X is then often called a continuous ----- variable.
10. P is the probability than an event will happen in any ----- trial.

III. Answer ALL questions

(10 marks)

1. Defined the termed descriptive statistic.
2. Arrange the numbers 12,56,42,21,5,18,10,3,61,34,65 and 24 inches.
3. Write out the terms in each of the following indicated sums.

$$(a) \sum_{j=1}^3 (X_j - a) \quad (b) \sum_{j=1}^4 (Y_j - 3)^2$$

4. Evaluate (a) $\binom{7}{4}$ (b) $\binom{6}{5}$

5. Evaluate (a) $5!$ (b) $\frac{6!}{2!4!}$

IV. Answer ALL questions

(20 marks)

1. If the class marks in a frequency distribution of the weight of students are 128,137,146,155,164,173 and 182 pounds, find (a) the class-interval size (b) the class boundaries.
2. Use the frequency distribution of heights in Table to find the mean height of the 100 male students at Yangon University.

Height	Number of students
60-62	5
63-65	18
66-68	42
69-71	27
72-74	8

- Find the standard deviation of the set (a) 3,6,2,1,7,5 and (b) 3.2,4.6,2.8,5.2,4.4.
- A ball is drawn at random from a box containing 6 red ball, 4 white ball and 5 blue ball. Determine the probability that the ball drawn is (a) red (b) white (c) blue (d) not red and (e) red or white.

V. Answer ANY THREE questions

(30 marks)

- Describe the general rules for forming frequency distribution.
- In the following table the weights of 40 male students at State University are recorded to the nearest pound. Construct a frequency distribution. Class interval size is 5.

138	164	150	132	144	125	149	157
146	158	140	147	136	148	152	144
168	126	138	176	163	119	154	165
146	173	142	147	135	153	140	135
161	145	135	142	150	156	145	128

- Find \bar{X} for the data in Table, using (a) the long method and (b) the coding method.

X	462	480	498	516	534	552	570	588	606	624
f	98	75	56	42	30	21	15	11	6	2

- Compute the mean weekly wage of the 65 employes at the P8cR Company from the frequency distribution. Using (a) the long method (b) coding methods.

Wages (\$)	Number of Employees
250.00 - 259.99	8
260.00 - 269.99	10
270.00 - 279.99	16
280.00 - 289.99	14
290.00 - 299.99	10
300.00 - 309.99	5
310.00 - 319.99	2

- One bag contains 4 white balls and 2 black balls, another contains 3 white balls and 5 black balls. If one ball is drawn from each bag, find the probability that (a) both are white (b) both are black and (c) one is white and one is black.
- Find the probability that in five tosses of a fair die a 3 appears (a) at no times (b) once, (c) twice, three times, (e) four times and (f) five times.
