MANSOURA UNIVERSITY
FACULTY OF SCIENCE
MATHEMATICS DEPARTMENT
FINAL EXAM 2014/2015G

FIRST SEMESTER
TIME: 2 Hours
MATH 301: Biostatistics
TOTAL MARKS: 80 Marks

Level 3, Programs: Biophysics, Microbiology, Chemistry & Botany, Chemistry & Zoology and Environment Science.

Answer The Following Questions

Question 1:

(a) Patients were treated for insomnia by some drug. Recorded below are the hours of sleep the patients got during the second night after treatment began:

(i) Complete the following table: [9 Marks]

True class interval	Midpoint	Frequency	Relative frequency	Cumulative frequency
2.55 – 4.55	3.55	…	…	13
4.55 – 6.55	…	17	0.34	…
… – …	…	…	…	43
… – …	…	1	0.02	…
… – …	…	…	0.08	48
… – …	…	0	…	…
… – …	…	…	…	…

(ii) What percentage of patients got 6.55 or less hours of sleep during the second night after treatment? [4 Marks]

(iii) Graph a cumulative frequency distribution. [4 Marks]

(b) Let $P(A) = 0.4$ and $P(A \cup B) = 0.7$. Find $P(B)$ if: [9 Marks]

(i) A and B are independent. (ii) A and B are mutually exclusive. (iii) A subset of B.

Question 2:

(a) Suppose we measure the duration of labor (in hours) for a sample of pregnant woman and obtain:

Duration of labor	0.5 – 2.5	2.5 – 4.5	4.5 – 6.5	6.5 – 8.5	8.5 – 10.5	10.5 – 12.5	12.5 – 14.5
Frequency	10	15	30	20	10	8	7

Find approximate values for: [18 Marks]

(i) The sample mean, mode and median. (ii) The variance and coefficient of variation.

(b) The probability that a patient recovers from a rare blood disease is 0.45. If 20 people are known to have contracted this disease. [9 Marks]

(i) What is the probability that at least 3 survive.

(ii) What is the probability that exactly 8 survive.

(iii) What is the expected number and variance of the patients that be survived.

Question 3:

(a) Suppose that in the population of healthy females, the red blood count (divided by 10^{12}/l) has an normal distribution with a mean of 4.8 and a standard deviation of 0.3. What is probability that the red blood count is: [12 Marks]

(i) greater than 5, (ii) less than 3.8, (iii) between 4.2 and 5.4

(b) Certain tubes manufactured by a company have a mean lifetime of 900 hr., and standard deviation of 50 hr. Find the probability that a random sample of 64 tubes taken from the group will have a mean lifetime between 895 and 910 hrs. [9 Marks]

(c) The probability that a student, selected at random from a certain College, will pass a certain economics course is 4/5 and will pass both economics and statistics courses is 1/2 What is the probability that he will pass statistics if it is known that he had passed economics? [6 Marks]

Hint: $\Phi(0.67) = 0.7486$, $\Phi(0.8) = 0.7882$, $\Phi(1.6) = 0.9452$, $\Phi(2) = 0.9773$, $\Phi(3.33) = 0.9994$.

Good Luck

Examiners: Dr. A. Mustafa, Dr. F. Sheha and M. Abdel Rahman.

علوم البيئة - بيولوجيا الأسماك (ع ب ٣٠٢)

Mansoura University Final Examination of " Fish Biology "
(First Term) 2014-2015

Faculty of Science
Zoology Department For 3rd Level "Environmenal Sciences"

Time allowed: 2h Full marks (60)

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Answer all the following questioms:

Q (1) : Give an account on each of the following: (20 Marks)

i-What is Aquaculure ii- Objectives of Aquaculture

iii-Different kinds of Aquaculture

Q (2) : What do you know about each of the following : (20 Marks)

1-Fishing and Fishing equipment
2-Fish manufacture

Q (3) : Give a full report on at least Five Species of fishes you have been studied. (20 Marks)

With my best wishes

Examiner : Prof.Dr. Mohamed Fathy A. Mansour