Facsimile of the exam of Medical Statistics – CdL in Medicina

FREQUENCY DISTRIBUTION (LESSON 3)

1) The next table shows the number of fingers in both hands of a group of old carpenters:

FINGERS OF BOTH HANDS	6	7	8	9	10	TOTAL fingers=360
NUMBER OF CARPENTERS	3	4	5	6	22	TOTAL number of carpenters=40

Mode is equal to:

A) 8
B) 9
C) 9.2
D) 10
E) 22

2) Median is equal to:

A) 8
B) 9
C) 9.2
D) 10
E) 22

3) Mean is equal to:

A) 8
B) 9
C) 9.2
D) 10
E) 22

4) Range is equal to:

A) 4
B) 5
C) 6
D) 7
E) 8
F) 9
G) 10

5) The absolute frequency of the mode is equal to:

A) 5
B) 6
C) 8
D) 9
E) 10
F) 22

6) Hence the distribution of question 1):

A) is symmetrical
B) presents a positive asymmetry
C) presents a negative asymmetry
D) is bimodal
E) is multimodal

7) As the variable "number of fingers of both hands" is a discrete variable, the most suited graph to represent this distribution is:
   A) a bar chart
   B) a histogram
   C) a scatterplot
   D) a normal distribution
   E) none of the above responses is correct

SCREENING TEST (LESSON 5)

1) A sample of 900 healthy individuals and 100 sick individuals undergo a new screening test. Sensitivity and specificity turn out to be, respectively, 0.8 and 0.9. Please fill in the following contingency table.

	DISEASED	HEALTHY	
POSITIVE TEST			
NEGATIVE TEST			

2) How many false negatives are there ?
   A) 10
   B) 20
   C) 40
   D) 80
   E) 90
   F) 100

3) How many false positives are there ?
   A) 10
   B) 20
   C) 40
   D) 80
   D) 90
   E) 100

4) Which is the positive predictive value ?
   A) 20/100
   B) 40/100
   C) 80/170
   D) 90/170
   E) 810/830
   F) 90/900

5) Which is the negative predictive value ?
   A) 20/100
   B) 40/100
   C) 80/170
   D) 100/170
   E) 810/830
   F) 90/900

CHOICE OF THE STATISTICAL TEST (LESSON 9)

1) In the same survey the relation between students' performance, evaluated by the mean of marks obtained in different exams, and type of lodging (with parents, in a university college or in a rental flat) is evaluated. Which statistical test should be used for this purpose?
   A. t test
   B. t test for paired data
   C. chi-squared test
   D. correlation and regression
   E. analysis of variance (ANOVA)
   F. none of the above reported test