

(7 pages)

1685/BS1

OCTOBER 2011

BASIC BIO-STATISTICS

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

SECTION A — (20 × 1 = 20 marks)

Choose the correct answer :

1. A characteristic that varies from one biological entity to another is _____
(a) Variable (b) Constant
(c) Zero
2. Statistics does not deal with _____ items.
(a) Individual (b) Mass
(c) Quantitative
3. Data originally collected for an investigation are known as
(a) primary data (b) secondary data
(c) none
4. Judgement sampling is also referred as
(a) probability sampling
(b) non-probability sampling
(c) random sampling
5. Precision of a random sample increases
(a) directly with increase in sample size
(b) proportionately with sample size
(c) with the increase in the sample size
6. What data are observed over a period of time the type of classification is known as
(a) Quantitative classification
(b) Chronological classification
(c) Geographical classification
7. Geographical classification means classification of data according to
(a) attributes (b) quality
(c) location
8. In a two-dimensional diagram
(a) only height is considered
(b) only width is considered
(c) both height and width are considered
9. Natural scale indicates
(a) absolute changes
(b) relative changes
(c) both

10. Which of the following is the most unstable average?
 (a) geometric mean (b) median
 (c) mode
11. The sum of the deviations of individual observations is zero from
 (a) mode (b) median
 (c) none
12. In a moderately asymmetrical distribution
 (a) Q.D < M.D < S.D
 (b) M.D < S. D < Q.D
 (c) S. D < M. D < Q. D
13. In a positively skewed distribution
 (a) mean > median > mode
 (b) mean > mode > median
 (c) mean < median < mode
14. Rank correlation coefficient is obtained by the formula :
 (a) $R = 1 - \frac{6 \sum D^2}{N^3 - N}$
 (b) $R = 1 + \frac{6 \sum D^2}{N^3 - N}$
 (c) None
15. If large values of one item is associated with the small values of the other it is the case of
 (a) positive correlation
 (b) negative correlation
 (c) chi-square
16. The variable, we are lying to predict, is called the
 (a) independent variable
 (b) dependent variable
 (c) variable
17. If more than one items is assigned the same rank _____ adjustment is made
 (a) $\frac{1}{12} (m^3 - m)$
 (b) $\frac{1}{12} (m^3 + m)$
 (c) $\frac{1}{12} (m - m^3)$.
18. Correlation analysis deals with relationship between _____ variables
 (a) only one (b) only two
 (c) two or more
19. Two regression coefficients always have the _____ sign
 (a) opposite (b) same
 (c) zero

20. If the signs of the regression coefficients are positive then the sign of correlation is _____.

- (a) Negative (b) Positive
(c) Zero

SECTION B — (5 × 6 = 30 marks)

21. (a) Define Bio-statistics. Explain role of statistics in clinical medicine.

Or

(b) Discuss the function and limitations of statistics.

22. (a) Find the arithmetic mean for the following :

No : 1 2 3 4 5 6 7 8 9 10

Value of items : 20 40 54 66 80 25 42 56 28 48

Or

(b) Tabulate the following data in the form of a frequency distribution as class interval 10.

4 6 8 10 12 10 20 15 11 12

15 18 20 28 40 7 30 20 11 19

20 15 16 17 22 10 30 45 40 42

32 15 20 15 20 42 60 15 60 55

60 52 15 32 40 22 55 32 42 45

23. (a) Discuss the various methods of diagrams and graphs.

Or

(b) Describe the merits and demerits of the four important measures of central tendencies.

24. (a) From the following, find the mean and median
Size : 115 105 112 106 117 120

Frequency : 4 8 3 2 1 5

Or

(b) Find the Harmonic mean

10, 15, 20, 30, 35, 40.

25. (a) Find out rank Correlation from the following data.

x: 75 88 95 70 60 80 81 50

y: 120 134 150 115 110 140 142 100

Or

(b) Distinguish between Correlation and regression.

SECTION C— (5 × 10 = 50 marks)

26. (a) Explain role of statistics in public health.

Or

(b) Discuss the characteristics of a frequency distribution table.

27. (a) Explain different types of graphical representation.

Or

(b) What is a statistical average? What are the criteria of a good average? Examine them for each.

