Roll No. ☐☐☐☐☐☐☐☐☐☐☐☐   Total No. of Pages : 02

Total No. of Questions : 18

B.Tech. (BT) (2018 Batch)   (Sem.–3)
BIOSTATISTICS
Subject Code : BTBT301-18
M.Code : 76945

Time : 3 Hrs.   Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :
1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

Answer briefly :

1. What is ratio scale data?

2. Differentiate between population and sample.

3. Define median.

4. What is coefficient of variation?

5. $_8P_5 =$ _____.

6. Define kurtosis of a distribution.

7. Differentiate between one-tailed and two-tailed statistical hypothesis testing.

8. What is Fisher exact test?

9. What is Kruskal-Wallis test?

10. What is difference between negative, positive and zero correlation?

SECTION-B

11. Differentiate between frequency distribution and cumulative frequency distribution? How will you graphically represent them?

12. Determine the arithmetic mean and mode of the following data : 7, 13, 9, 12, 8, 8, 7, 8, 13, 6, 10, 8, 8, 12, 9, 12, 8, 12, 11, 12.

    Also write the importance of these two measures of central tendencies.

13. What is the probability of selecting at random a card of diamond or a king from a well-shuffled deck of playing cards?

14. If in a binomial population, $p = 0.22$ and $n = 5$, what is the probability of $X = 4$?

15. Perform paired sample t-test to test the null hypothesis that the left foreleg and left hindleg of deer are equal. The data consisting of left hindleg and left foreleg lengths (cm) are as follows :

Deer	1	2	3	4	5	6	7	8	9	10
Hindleg Length	142	140	144	144	142	146	149	150	142	148
Foreleg Length	138	136	147	139	143	141	143	145	136	146

SECTION-C

16. Find out linear regression equation of y on x using following data of heights (in inches) of fathers and their adult sons :

Adult son (y)	68	66	68	65	69	66	68	65	71	67	68	70
Father(x)	65	63	67	64	68	62	70	66	68	67	69	71

17. Using the following data, perform Mann-Whitney test to test the null hypothesis that male and female turtles have the same mean cholesterol concentrations (mg/100ml) :

Male	244	248	236	232	251	245	254	256
Female	232	240	244	244	234	230	226	

18. a) Describe ANOVA and discuss in which situation ANOVA test is applied.

    b) Six samples of each of the five water bodies were analyzed for strontium concentration in the water bodies and ANOVA test was performed. Based on following information determine if the strontium concentration of five different water bodies is same at 0.05 level of significance.

    Total sum of squares = 2437.572 and Group sum of squares = 2193.442

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.