Registration No. : | | | | | | | | | | |

Total number of printed pages – 2

B. Tech

HSSM 3304

Fifth Semester Examination – 2013

BIOSTATISTICS

BRANCH : BIOTECH

QUESTION CODE : C-324

Full Marks – 70

Time : 3 Hours

*Answer Question No. **1** which is compulsory and any **five** from the rest.*
The figures in the right-hand margin indicate marks.

1. Answer the following questions : 2×10

   (a) Haemoglobin percentage (Hb%) of 5 patients of ward of hospital was obtained as 6 mg, 5 mg, 4 mg, 8 mg and 6 mg. Find out arithmetic mean of the data.

   (b) What are the objectives of classification of data ?

   (c) What do you mean by parametric test of significance ?

   (d) Write the equation of Karl Pearson's coefficient of correlation.

   (e) What is theorem of total probability ?

   (f) Two women gave birth to child simultaneously. Find out probability of issue of female to both women.

   (g) What do you mean by dispersion or deviation or scatter or variability ?

   (h) What do you mean by student's't' test ?

   (i) Define and mention the formula of Chi-square test.

   (j) One event has to happen out of two. If probability of first is 2/3 of 2nd, then find out probability of first.

2. (a) Find the median of the following grouped data which shows the fecundity of a species of fish : 5

Fecundity in C.I (X)	1-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80
Frequency (f)	3	15	2	8	11	4	1	6

   (b) Compare the arithmetic mean, median and mode as measures of central tendency. Describe situations where one is more suitable than others. 5

P.T.O.

3. (a) What are the five alternative measures of dispersion or variation ? Briefly discuss their properties. 5

(b) Calculate the mean deviation, standard deviation and variance for the data relating to their pH of the water sample : 5

pH	6.6	6.8	6.1	7.2	7.1	7.3	7.4	7.5

4. In an Experiment to find out the effect of a hormone spray on the seed yield of dwarf bean variety the experimenter obtained the following results. Analyze the data using the 't' test and give your inference on the effect of hormonal spray : 10

Control	30	35	31	36	38	32	25	39	39	26	27	35	30	31	25
Treated	35	33	40	42	45	36	37	39	36	39	42	43	42	44	45

5. The percentages of marks, obtained by ten students in a 'written' and 'oral' examination are as follows :

Written	81	62	74	78	93	69	72	83	90	84
Oral	76	71	69	76	87	62	80	75	92	79

(a) Draw a scatter diagram. What kind of association between two sets of marks do you infer from the scatter diagram ? 5

(b) Calculate the correlation coefficient to determine the strength of association between X and Y. 5

6. (a) In a survey it was found that the average per capita consumption of milk is 0.5 litre per day and the coefficient of variation (expressed in percentage term) is 20. What is the variance of per capita milk consumption ? 5

(b) What is the purpose of regression analysis ? What do you mean by linear regression? Explain regression equation. 5

7. (a) Fit the Poisson distribution in the following distribution : 5

Incorrect number	0	1	2	3	4	5	6	7	8	9	10
Page number in book		4	15	22	21	20	8	6	2	0	1

(b) Describe briefly on Skewness and Kurtosis. 5

8. (a) What do you mean by normal distribution ? Suppose height of plants are in normal distribution.95% are between 61and 74, then find out mean and standard deviation of distribution of height of plants. 5

(b) A man kill a bird once a three shots. On this assumption he fires three shots. What is the chance that a bird is killed ? 5