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Total number of printed pages – 2

B. Tech
HSSM 3304

Fifth Semester Examination – 2011

BIOSTATISTICS

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) What are central tendency measures ?
 - (b) How you will get pure chance of occurrence ?
 - (c) What is normal distribution ?
 - (d) Write the multiplication theorem of probability.
 - (e) Define null hypothesis.
 - (f) What do you mean by variables in a biological system ?
 - (g) What is the significance of analysis of variance ?
 - (h) What do you mean by least significant difference ?
 - (i) What is test for goodness of fit ?
 - (j) Write the limitations of 't' test ?
2. What is randomization ? Describe the various process of randomization ? 10
3. In an experiment to find out the effect of a hormone spray on the seed yield of dwarf French beans 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

P.T.O.

4. The effect of a pesticide, Bio-knight on the germination of *Phaseolus* seeds was assessed taking into consideration the different concentration of the pesticide. Find out whether there is any correlation between percentage germination and the pesticide concentration : 10

Con (ppm)	0	100	250	500	750	1000	1250	1500	2000
% germination	84	81	65	52	39	32	28	17	6

5. Two varieties of *Mirabilis jalapa*, one having white flower and the other with red flower were crossed. The F_2 generation plants were 43 red, 72 purple and 45 white flowered plants. Do these results support the 1:2:1 ratio ? 10
(Tabulated value = 5.69 at 0.05 p)

6. Write short notes on : 5×2

- (i) Duncan's multiple range test
- (ii) Quartile deviation

7. Calculate the standard deviation, coefficient of variation and standard error of mean of the following data : 10

No. of field	15-17	18-20	21-23	24-26	27-29	30-32	33-35	36-38	39-41
Frequency	5	6	8	12	22	18	15	9	5

8. Answer the following : 5×2

- (a) Four cards are drawn consecutively four times from a pack of 52 cards. Find the chance of drawing one ace, a queen, a king and a jack. Assume that the cards are not replaced after each with drawl.
- (b) Define skew ness ? What is its significance ?