CLASS: IMSc   SEMESTER : IX
BRANCH: FOOD TECHNOLOGY   SESSION : MO/2022

SUBJECT: FT503 APPLIED STATISTICS FOR FOOD TECHNOLOGY

TIME: 3:00 Hours   FULL MARKS: 50

INSTRUCTIONS:
1. The question paper contains 5 questions each of 10 marks and total 50 marks.
2. Attempt all questions.
3. The missing data, if any, may be assumed suitably.
4. Before attempting the question paper, be sure that you have got the correct question paper.
5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.

No		Marks	BL level
Q.1(a)	While playing with dice, determine is the probability (p) of obtaining (a) More than 1 (b)Less than 5 (c)Equal to 5 (d) Less than 0	[2]	Apply (3)
Q.1(b)	Assess the meaning of a) An increase in temperature of canning significantly increased the destruction of vitamin B1 ($r > 0.94$, $p < 0.05$). b) Correlation coefficient (r) for the developed model $y = -2.43 x + 13.7$ is 0.976.	[3]	Evaluate(5)
Q.1(c)	Describe the uses of statistical terms as chi-square, F test, root mean square error (RMSE), correlation coefficient and regression in food preservation and processing. Give one application of each of them.	[5]	Understand (2)
Q.2(a)	Calculate the mean and standard deviation (SD) of the values 11, 10, 13, 15 and 14.	[2]	Apply (3)
Q.2(b)	Explain the analysis of variance (ANOVA) and use in food processing?	[3]	Understand (2)
Q.2(c)	Recall the term coefficient of determination (r^2)? If the r^2 value of a developed model is 0.64, what inferences can be drawn?	[5]	Remember (1)
Q.3(a)	Draw rough sketches (x versus y) for the following type of regression equations: Linear: $y = 1.3 x + 10.5$ Non-linear: $y = 0.81 + 0.62 x^{1.6}$	[2]	Analyze (4)
Q.3(b)	Explain about different sensory testing methods	[3]	Understand (2)
Q.3(c)	Discuss about Malcolm Baldridge National Quality Award	[5]	Understand (2)
Q.4(a)	Justify how is TQM different from traditional approach to management? Give examples.	[2]	Evaluate(5)
Q.4(b)	Describe about Supplier Quality Assurance Manual	[3]	Remember (1)
Q.4(c)	Describe about Acceptable Quality Level (AQL) with its	[5]	Remember (1)
Q.5(a)	Differentiate between Statistical quality control and Statistical process control	[2]	Understand (2)
Q.5(b)	Recall the application specific domain for ISO 9001:2000, ISO 14001:2004, OHSAS 18001:2007, ISO/IEC 27001:2005	[3]	Remember (1)
Q.5(c)	Explain the basic recommendations for the selection of codex sampling plans	[5]	Understand (2)

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