LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

M.Sc.DEGREE EXAMINATION – **FOOD CHEMISTRY AND FOOD PROCESSING**

SECONDSEMESTER – APRIL 2018

17/16PFP2MC03- RES. METHODOLOGY AND BIOSTATISTICS

Date: 21-04-2018   Dept. No.   Max. : 100 Marks
Time: 01:00-04:00

Part A

Answer ALL the questions.   10 x 2 =20 marks

1. List the objectives of research.

2. Define Ex post facto research.

3. What is Stratified sampling?

4. What do you understand by the term 'treatment'?

5. Mention the types of validity in research.

6. Name the sources of secondary data.

7. What is hypothesis? State the types.

8. How is percentile for continuous data measured?

9. Mention the uses of inferential statistics in research?

10. What is a bibliography?

Part B

Answer ANY EIGHT questions.   8 x 5 = 40 marks

11. Explain the different types of research, clearly pointing out the difference between them?

12. Distinguish between dependent, independent and extraneous variables with examples.

13. Discuss the various types of informal experimental designs with illustration.

14. Write short notes on test of reliability.

15. What are the various measurement scales used in food research? State examples.

16. Explain the role of various graphical representations and tabulations used in presenting data.

17. Describe in brief the layout of a research report and its significance.

18. Write a note on computers in research.

19. Enumerate the various applications of statistics in research.

20. Write short notes of descriptive statistics.

21. Impact of milk protein composition on casein (CN) retention in curd during the milk coagulation process was studied using a model cheese making system from 100 cows. Calculate the mean and standard deviation.

CN (%)	60- 65	65-70	70 - 75	75-80	80-85	85-90	90-95	95-100
No. of cows	15	10	5	10	20	10	10	20

22. Find the correlation between relative retention of aroma compounds (RRAC) and hydrocolloid concentration (HC) in model salad dressings

RRAC	75	72	65	44	80	45	70	60	50
HC	0.5	0.4	0.3	0.1	0.6	0.1	0.5	0.3	0.2

Part C

Answer ANY FOUR questions.   4 x 10 = 40 marks

23. Describe the process of research with suitable illustration.

24. Why is probability sampling generally preferred in comparison to non-probability sampling? Explain the procedure of selecting sample.

25. Enumerate the different methods of collecting primary data. Which one is the most suitable for conducting a survey on organic food consumption?

26. Test the differences in gluten percentage of nine different batches of flour produced under laboratory and industrial conditions with wheat flour replaced with breadfruit (BF) at 20 percent and 40 percent. Do the two treatments differ significantly with regard to their effect on gluten content ($t_{0.05} = 1.746$).

BF 20%	8	9	12	11	15	12	10	10	16
BF 40%	13	14	14	14	10	8	13	9	12

27. A food company research on a new product to be launched in the market for its acceptance by difference age group of people. On the basis of the given data, can it be concluded that the appeal towards the new product developed is independent of age ($\chi_{0.05} = 5.99$).

Opinion	Age of the participants			Total
	Below 20 years	20 -39 years	40 – 59 years	
Liked	125	420	60	605
Disliked	75	220	100	395
Total	200	640	160	1000

28. A series of experiments were carried out to determine the moisture content of four samples of powdered jackfruit fruit peel, from four batches of the product. Perform analysis of variance on these data and discuss if there are any significant difference in the observation of moisture between the batches ($F_{0.05} = 3.49$).

Batch I	Batch II	Batch III	Batch IV
9	7	11	9
12	8	14	5
10	10	10	8
11	13	13	10

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