LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

DEGREE EXAMINATION – **FOOD CHEMISTRY AND FOOD PROCESSING**

SECOND SEMESTER – **APRIL 2014**

FP 2809 - RESEARCH METHODOLOGY AND BIOSTATISTICS

Date : 05/04/2014 Dept. No. Max. : 100 Marks

Time : 09:00-12:00

Part A

Answer ALL the questions. **10 x 2 =20 marks**

1. What is research?
2. Define hypothesis.
3. What is a close ended question?
4. Name four indices and abstracts used for food citations.
5. Mention four sources of secondary data.
6. Define bibliography.
7. What are footnotes?
8. Differentiate field versus central editing of data.
9. List the different types of correlation
10. Represent a model for one-way ANOVA classification

Part B

Answer any EIGHT questions. **8 x 5 = 40 marks**

11. What are the different criteria of a good research?
12. Explain and illustrate any two formal experimental designs
13. Describe in brief on the processing of raw data.
14. Design an interview schedule to assess the knowledge of college students on organic foods.
15. Discuss briefly on the various types of designs used in formulating a methodology for research.
16. "Ethics in research is the need of the hour". Justify the statement.
17. Bring out the importance of different graphical and diagrammatic representation in research.
18. Examine the merits and demerits of a questionnaire.
19. Compute the standard deviation for the following data

Class group	100-120	120-130	130-140	140-150	150-160	160-170	170-180	180-190	190-200
Frequency	6	25	48	72	116	60	38	22	3

20. Calculate the third quartile and 50th percentile of the following data

X	0-5	5-10	10-15	15-20	20-25
f	7	18	25	30	20

21. Compute test of significance to find the difference between means of two independent samples from the following data ($t_{0.05} = 2.228$).

$\Sigma X_1 = 60$, $\Sigma X_2 = 77$, $\Sigma x_1^2 = 10$, $\Sigma x_2^2 = 44$, $n_1 = 5$ and $n_2 = 7$

22. "Use of computer in research is so extensive that it is difficult to conceive today a scientific research project without computer". Justify.

Part C

Answer any FOUR questions. **4 x 10 = 40 marks**

23. Describe the techniques of defining a research problem.

24. Explain the various sampling procedures adopted to select the participants for the research.

25. Describe process of writing a research report with suitable outline.

26. Calculate the mean, median, mode and standard deviation for the following data

Marks	0 -10	10-20	20-30	30-40	40-50	50-60
No. of Students	3	10	25	30	20	10

27. A milk producers union wishes to test whether the preference pattern of consumers for its products is dependent on income levels. A random sample of 500 individuals gives the following data. Can you conclude that the preference patterns are independent of income levels? (Table value = $\chi^2 = 14.850$)

Income	Product Preference			Total
	Product A	Product B	Product C	
Low	170	30	80	280
Medium	50	25	60	135
High	20	10	55	85
Total	240	65	195	500

28. Calculate the coefficient of correlation from the following data and also find its probable error

X	48	33	40	9	16	16	65	24	16	57
Y	13	13	24	6	15	4	20	9	6	19

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