LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

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

SECOND SEMESTER - APRIL 2023

PFP2MC02 - SCIENTIFIC RESEARCH METHODOLOGY

Date: 04-05-2023	Dept. No.	Max. : 100 Marks
Time: 01:00 PM - 04:00 PM		

Answer ALL the questions (5 x 1 = 5)											
1. Definitions a) Longitudinal study b) Multi-cluster sampling C) Test of significance d) Plagiarism e) Research Methodology SECTION A – K2 (CO1) Answer ALL the questions 2. Match the following a) Pre-test - States that there is no difference between groups b) Null Hypothesis - Used to represent degree of correlation c) Likert Scale - Assigning individuals in a sample to either an experimental group or a control group d) Scatter plot - Measures attitudes, values, or opinions about a subject. e) Randomization - A measure taken before the experimental intervention is applied SECTION B – K3 (CO2) Answer any THREE of the following in 300 words 3. Classify the various types of research with suitable example. 4. Illustrate the importance of the following in research a. Bibliography - (5 marks) b. Ethics – (5 marks) b. Ethics – (5 marks) c. Calculate the correlation between heating of fats/oils on trans fatty acid (TFA) formation Temp ("C) 150 160 170 180 190 200 210 220 TFA g/100g 1.8 2.1 2.5 2.6 3.2 3.7 4.2 4.5 SECTION C – K4 (CO3) Answer any TWO of the following in 500 words Classify informal experimental formation and the following in 500 words Answer any TWO of the following in 500 words SECTION C – K4 (CO3) Answer any TWO of the following in 500 words Classify information and the following in 500 words Answer any TWO of the following in 500 words SECTION C – K4 (CO3)					SEC	TION A	– K1 (CC)1)			
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·		Answer any TWO of the following in 500 words (2 x 12.5 = 25)									(2 x 12.5 = 25)
9. Compare and contrast probability sampling and non-probability sampling.	8.	Illustrate the process of research using a flow diagram.									
· · · · · · · · · · · · · · · · · · ·	9.	Compare and c	ontrast r	robabili	ty samp	ling and	non-prc	bability	samplir	ng.	

- 10. Design a questionnaire with different scales to measurement to identify the consumer preference of chilly flavoured ice-cream.
- 11. Calculate the 't' value for the following HDL-C (mg/dL) levels, before and after the supplementation of Cinnamon powder to women with polycystic ovary syndrome. ($t_{0.05}$ = 1.833)

Before	40	36	33	42	30	45	41	45	42	39
After	44	39	40	45	34	48	48	49	47	45

SECTION D - K5 (CO4)

Answer any ONE of the following in 750 words

 $(1 \times 15 = 15)$

- 12. Assess the applications of research in varied fields of food technology.
- 13. Evaluate the scope and need for the various sections and subsections of a thesis.

SECTION E - K6 (CO5)

Answer any ONE of the following in 1000 words

 $(1 \times 20 = 20)$

14. A food research laboratory is testing the effect of consumption of ultra-processed foods (UPF) on the perceived stress levels (n = 5). The data for the stress score is displayed below. Determine if the stress levels of healthy eaters have significant variation compared to ultra-processed food consumers ($F_{0.05} = 3.88$)

Low consumption of UPF	Moderate consumption of UPF	High consumption of UPF
27	32	45
18	26	38
30	42	44
34	39	46
20	43	48

15. Propose a research idea and write a detailed project proposal for submitting to a research funding agency.

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