

**PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)**

**MSc DEGREE EXAMINATION DECEMBER 2024
(Third Semester)**

Branch - FOOD TECHNOLOGY MANAGEMENT

RESEARCH METHODOLOGY AND BIOSTATISTICS

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer ALL questions

ALL questions carry EQUAL marks

(10 × 1 = 10)

Module No.	Question No.	Question	K Level	CO
1	1	Deliberate sampling is also known as _____ sampling. (a) SRS (b) Systemetric (c) Stratified (d) Purposvie or non-probability	K1	CO1
	2	Which of the following are related to primary data? (a) Reliability (b) Suitability (c) Adequeay (d) None	K2	CO1
2	3	Determine the sample size if $\sigma=6$, population mean=25, sample mean=23 and the desired degree of precision is 99 percent.($z=2.576$). (a) 16 (b) 60 (c) 50 (d) 59	K1	CO2
	4	If in place of simple random sampling, deliberate sampling has been used in a particular case some bias is introduced in the result and hence such error are called _____ sampling errors. (a) Sampling (b) Unblased (c) Biased (d) Non-Sampling	K2	CO2
3	5	Formula for Median-continuous series (a) $(N+1)/2$ (b) $N(N+1)/2$ (c) $L+(N/2-c.f)/f \times i$ (d) $L-(N/2+c.f)/f \times i$	K1	CO3
	6	Which one the following is negative correlation coefficient? (a) $r=0$ (b) $r=+1$ (c) $r=-1$ (d) None	K2	CO3
4	7	Two-tailed tests of hypothesis is (a) $H_1:\mu \neq \mu_0$ (b) $H_1:\mu > \mu_0$ (c) $H_1:\mu < \mu_0$ (d) $H_1:\mu = \mu_0$	K1	CO4
	8	F-Test is defined as: (a) $F=V_1^2 / V_2^2$ (b) $F= V_2^2 / V_1^2$ (c) $F=S_1^2 / S_2^2$ (d) $F=S_2^2 / S_1^2$	K2	CO4
5	9	Which test is used in ANOVA ? (a) t-test (b) F-test (c) χ^2 -test (d) None	K1	CO5
	10	Degrees of freedom of oneway ANOVA classification is (a) c-1 (b) n-c (c) n-1 (d) N- C	K2	CO5

Cont...

SECTION - B (35 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks (5 × 7 = 35)

Module No.	Question No.	Question	K Level	CO
1	11.a.	What is the meaning of Research? Explain different types of Researches.	K2	CO1
	(OR)			
	11.b.	Describe the techniques involved in defining a problem with example.	K4	CO1
2	12.a.	Explain Multi-stage sampling and cluster sampling. Write its merits and limitations.	K1	CO2
	(OR)		K6	CO2
	12.b.	Write short notes on Sampling Errors.		
3	13.a.	Calculate Median and mode of the data given below. Using them find arithmetic mean. Marks : 10 20 30 40 50 60 No.of students : 8 23 45 65 75 80	K3	CO3
	(OR)		K5	CO3
	13.b.	Write the difference between correlation and regression analysis.		
4	14.a.	Describe testing of hypothesis procedure.	K1	CO4
	(OR)			
	14.b.	A sample of size 25 yielded mean equal to 33 and an estimated variance equal to 100. At the 1% level, would we have reasons to doubt the claim that the population mean is not greater than 27.	K6	CO4
5	15.a.	Explain Chi – Square test.	K3	CO5
	(OR)			
	15.b.	The following table gives the yield on 15 sample plots under three varieties of seeds. A B C 20 18 25 21 20 28 23 17 22 16 15 28 20 25 32 Find out the average yields of land under different variances. Is there any significant difference between the yield among three varieties?	K6	CO5

SECTION -C (30 Marks)Answer **ANY THREE** questions**ALL** questions carry **EQUAL** Marks

(3 × 10 = 30)

Module No.	Question No.	Question	K Level	CO
1	16	Discuss the technique of developing various measurement tools.	K3	CO1
2	17	Write short notes of the followings: i) Judgment sampling ii) Quota sampling iii) Systematic Sampling.	K4	CO2
3	18	Find the coefficient of the correlation for the following: Cost: 39 65 62 90 82 75 25 98 36 78 Sales: 47 53 58 86 62 68 60 91 51 84	K1	CO3
4	19	In a simple random sample of 600 men taken from a big city, 400 are found to be smokers. In another simple random sample of 900 men taken from another city , 450 are smokers. Do the data indicate that there is a significant difference in the habit of smoking in the two cities?	K5	CO4
5	20	In an experiment on immunization of cattle from tuberculosis, the following results were obtained: Not Affected Affected Inoculated 12 26 Not Inoculated 16 6 Discuss the effect of Vaccine in controlling the disease. (χ^2 . for 1 df = 3.84)	K5	CO5

Z-Z-Z

END