

Sen-2
2022

DEPARTMENT OF FOOD TECHNOLOGY
SCHOOL OF INTERDISCIPLINARY SCIENCES AND TECHNOLOGY(SIST)

JAMIA HANDARD, NEW DELHI-62

Course: MSc. Nutrition and Dietetics, September – 2023

Final Semester Examination- II

MDNCC 202: RESEARCH METHODOLOGY-II

Roll No:

Duration: 3 hours

Maximum Marks: 60

Instructions:

Note: The paper is divided into Three sections A, B and C.

Part A, B and C all are compulsory to attend.

Attempt all the questions together within the Sections

Normal Calculators are allowed only

PART A

1. Explain **any five** of the following terms: ($5 \times 1=5$ marks) **(CO1,P02)**
- Confounding variable
 - Frequency Polygon
 - Ogive Curve
 - One Tail and Two Tail
 - Semi-interquartile range
 - Type I and Type II error
 - Kurtosis
2. A blood bank unit conducted blood pressures of 30 college going students, the following are the results for diastolic blood pressure: **(5)** **(CO2, P03)**
- | | | | | | |
|----|----|----|----|----|----|
| 77 | 85 | 83 | 87 | 88 | 80 |
| 96 | 78 | 82 | 79 | 82 | 83 |
| 85 | 90 | 75 | 74 | 72 | 87 |
| 80 | 64 | 73 | 86 | 92 | 70 |
| 82 | 79 | 81 | 91 | 81 | 89 |
- Calculate a grouped frequency distribution
 - Construct a cumulative frequency distribution
 - Construct a cumulative percentage distribution
3. **Part (A)** The wechslers intelligent scale has a mean of 250 and a standard deviation of 15. Find the Z score of an IQ score of **(5 Marks)** **(CO3,P02)**
- 266
- Part (B)** for the same intelligent test, find the actual IQ score for the following z score
- + 2.30
 - 1.90

4. Estimate the Mean, Mode and Median of the following Grouped data. Also explain the properties of the above three tendencies. **(10 Marks)** (CO2, PO3)

Marks	0-10	10-20	20-30	30-40	40-50
No of students	5	6	9	12	20

Part B

5 x 3 = 15

- From a pack of 52 playing cards, Jacks, Queens, and Kings of red colour are removed. From the remaining, a card is drawn at random. Find the probability that drawn card is: (CO1, PO4)
 - a black King
 - a card of red colour
 - a card of black colour
- There are 100 cards in a bag on which numbers from 1 to 100 are written. A card is taken out from the bag at random. Find the probability that the number on the selected card (CO1, PO4)
 - is divisible by 9 and is a perfect square
 - is a prime number greater than 80.

Or

Two different dice are thrown together. Find the probability that the numbers obtained.

- have a sum less than 6
 - have a product less than 16
 - is a doublet of odd numbers.
3. Explain the probability theorem. (CO1, PO4)

PART C

- To study the effect of physical training on the serum cholesterol level, it was measured on 11 subjects before and after the training program and is given in the following table. **(1×10=10 marks)** (CO3, PO2)

Subjects	Pre-training level (mg/dl)	Post-training level (mg/dl)
1	182	198
2	232	210
3	191	194
4	200	220
5	148	138
6	249	220
7	276	219
8	213	161
9	241	210
10	480	313
11	262	226

Does the data support the proposition that physical training program effectively reduced the serum cholesterol level? (Given that $t_{0.05(10)} = 1.812$)

2. Obtain the regression lines y on x from the following data: (1×5=5 marks) (CO3, PO2)

(x)	0	5	10	15	20
(y)	72	67	70	65	66

3. In an examination on immunization of goats for anthrax, the following results were obtained: (1×5=5 marks) (CO3, PO2)

	Died of Anthrax	Survived	Total
Inoculated	2	10	12
Non-inoculated	6	6	12
Total	8	16	24

Derive your inference on the vaccine. (Given that χ^2 for 1 degrees of freedom at 5% level of significance is 3.841).