S.No. M22031 Course Code : 33319103

VINAYAKA MISSION'S RESEARCH FOUNDATION, SALEM
(Deemed to be University)

MASTER OF PUBLIC HEATLH DEGREE EXAMINATION – December 2021

First Year

BIO - STATISTICS

Three Hours Maximum: 100 marks

I. Write an Long essay on: (3 x 20 = 60)

1. A research study was conducted to examine the differences between older and younger adults on perceived life satisfaction. A pilot study was conducted to examine this hypothesis. Ten older adults (over the age of 70) and ten younger adults (between 20 and 30) were give a life satisfaction test (known to have high reliability and validity). Scores on the measure range from 0 to 60 with high scores indicative of high life satisfaction; low scores indicative of low life satisfaction. The data are presented below. Compute the appropriate t-test.

Older Adults	Younger Adults
45	34
38	22
52	15
48	27
25	37
39	41
51	24
46	19
55	26
46	36

2. A new approach to prenatal care is proposed for pregnant women living in a rural community. The new program involves in-home visits during the course of pregnancy in addition to the usual or regularly scheduled visits. A pilot randomized trial with 15 pregnant women is designed to evaluate whether women who participate in the program deliver healthier babies than women receiving usual care. The outcome is the APGAR score measured 5 minutes after birth. Recall that APGAR scores range from 0 to 10 with scores of 7 or higher considered normal (healthy), 4-6 low and 0-3 critically low. The data are shown below.

Usual Care	8	7	6	2	5	8	7	3
New Program	9	9	7	8	10	9	6	0

Is there statistical evidence of a difference in APGAR scores in women receiving the new and enhanced versus usual prenatal care? We run the test using the five-step approach.

3. Explain about Two way ANOVA.

II. Write short essay on : (4 x 10 = 40)

4. Correlation.

5 In a Hospital 480 male children and 520 children were born in a week.Do these figures confirm the hypothesis that males and females are born equal in number?

6. Explain about the different types of Statistical analysis tools that are available.

7. 256 visual artists were surveyed to find out their zodiac sign. The results were: Aries (29), Taurus (24), Gemini (22), Cancer (19), Leo (21), Virgo (18), Libra (19), Scorpio (20), Sagittarius (23), Capricorn (18), Aquarius (20), Pisces (23). Test the hypothesis that zodiac signs are evenly distributed across visual artists.

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