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SARDAR PATEL UNIVERSITY
Forth Year B.Sc. (Yearly) Examination
Thursday, 2nd January, 2014
10:30 a.m. to 12:30 p.m.
BOTH-405 – Biostatistics & Research Methodology

Total Marks:35

- Note:
1. Draw diagram wherever necessary.
 2. Figure to the right indicate full marks.

Section - I

- Q.1 Multiple Choice Questions: [05]
1. Root mean square deviation is :
a) standard deviation
b) standard error
c) standard variation
d) standard error of proportion
 2. 10 babies were born in a hospital on a given day. 5 were less than 2.5 kg and rest were more than that. The average is :
a) Arithmetic mean
b) Geometric mean
c) Median
d) Mode
 3. The correlation coefficient between variables X and Y will have a +ve sign when
a) X increases and Y decreases
b) X decreases and Y increases
c) X decreases and Y decreases
d) There is no change in X and Y
 4. Which statement is true for standard normal distribution curve
a) Mean 1 and SD 0
b) mean 0 and SD 1
c) Mean 1 SD 1
d) Mean 0 and SD 0
 5. If the mean is 230 and the standard error is 10, the 95% confidence limits would be :
a) (210,250)
b) (220,240)
c) (225,235)
d) (230,210)

Section - II

- Q.2 Do as Directed: (Attempt Any Two) [14]

1. From a large no. of families living in a rural area each having youngest child aged between 5 and 7 years, a researcher selected a sample of 6 families and measured the I.Q. of the youngest child. The researcher also recorded the total no. of children in each family and drew up the following table.

No. of Children in the family	2	3	3	3	4	5
I.Q of Yongest child	100	100	100	80	80	70

Calculate Karl-Pearson's correlation coefficient and comment on it.

2. Define Probability Density Function. Write properties of Normal Distribution.
3. Test the hypothesis that Amidopyrin and Analgin has no effect on occurrence of cleft palate.

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P.T.O

	Cleft plate Positive	Cleft plate Negative
Amidopyrine	100	800
Analgin	200	900

(χ^2 table value = 3.84 at Degrees of Freedom = 1)

Q.3 Do as Directed: (Attempt Any Four)

[16]

1. Discuss methods for collecting data.
2. Explain the term Null Hypothesis, Alternative Hypothesis
3. Explain types of Correlations in detail.
4. Explain Type I error in detail.
5. Define Dispersion. Write Measures of dispersions.
6. Discuss Qualitative data.
