

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[AHS 0321]

MARCH 2021

Sub. Code: 2863

(OCTOBER 2020 EXAM SESSION)

M.Sc. BIOSTATISTICS

FIRST YEAR (From 2011-2012 onwards)

**PAPER III – STATISTICAL INFERENCE, SAMPLING METHODS AND
SAMPLE SIZE**

Q.P. Code : 282863

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate notes on:

(2 x 20 = 40)

1. a) Cramer Rao Inequality
b) Rao Blackwell Inequality
2. a) What are the goals of a well-designed sampling plan?
b) Under what conditions would it make sense to use a stratified.
(i) cluster sample? and (ii) systematic random sample

II. Write Short Notes on:

(10x6 = 60)

1. Maximum likelihood estimators
2. Properties of point estimators
3. UMP unbiased test and Likelihood ratio test
4. Critical region and level of significance
5. Test for goodness of fit
6. Why is it important to have a sample that is representative of the target population?
7. Target population and sampling frame
8. Quota sampling
9. Sample size estimation for comparing two proportions
10. Sources of errors in surveys
