TELANGANA UNIVERSITY
S.S.R. DEGREE COLLEGE, NIZAMABAD (C.C:5029)
V SEMESTER INTERNAL ASSESSMENT I EXAMINATIONS
STATISTICS QUESTION BANK

I. Choose the correct Answer

1. Sample fraction f = _____ [a]

a. $\frac{n}{N}$ b. $\frac{N}{n}$ c. N d. n

2. Standard error of sample mean _____ [b]

a. $\frac{\sigma}{\sqrt{2n}}$ b. $\frac{\sigma}{\sqrt{n}}$ c. $\frac{\sigma^2}{\sqrt{n}}$ d. None

3. In SRSWR, $E(S^2)$ = _____ [a]

a. σ^2 b. S^2 c. σ d. None

4. In SRWDR, $E(S^2)$ = _____ [b]

a. σ^2 b. S^2 c. σ d. None

5. How many methods in selection of SRS [c]

a. 4 b. 5 c. 2 d. 3

6. How many types of sampling methods [d]

a. 4 b. 5 c. 2 d. 3

7. $\bar{y}..$ is the _____ mean [a]

a. Population b. Sample c. Normal d. None

8. In SRSWOR, no. of possible samples drawn [a]

a. NCn b. N^n c. N^2 d. n^2

9. In SRSWR, no. of possible samples drawn [b]

a. NCn b. N^n c. N^2 d. n^2

10. P_i = _____ [a]

a. $\frac{Ni}{N}$ b. $\frac{N}{n}$ c. $\frac{n}{N}$ d. $\sum_{i=1}^{K} Ni$

11. In systematic sampling, K = _____ [b]

a. $\frac{n}{N}$ b. $\frac{N}{n}$ c. $\frac{Ni}{N}$ d. N^2

12. In stratified sampling, $\sum_{i=1}^{K} Ni =$ [b]

a. n b. N c. N^2 d. None

13. In stratified sampling, $\sum_{i=1}^{K} ni =$ [a]

a. n b. N c. n^2 d. None

14. Stratification means _____ into layers [c]

a. Addition b. Subtraction c. Division d. None

15. In SRSWOR, All draws are independent and identical, the statement is true or false [b]

a. True b. False c. Both d. None

16. In SRSWR, all draws are independent and identical, the statement is true or false [a]

a. True b. False c. Both d. None

17. In SRSWOR, $E(a_i)$ = _____ [a]

a. $\frac{n}{N}$ b. $\frac{N}{n}$ c. N^2 d. None

18. In SRSWOR, $E(a_i a_j)$ = _____ [a]

a. $\frac{n(n-1)}{N(N-1)}$ b. $\frac{n-1}{N-1}$ c. $\frac{n}{N}$ d. None

19. In systematic sample $E(\bar{y}_{sys}) =$ [c]

a. $\bar{Y}$ b. $\bar{Y}_N$ c. $\bar{y}$.. d. None

20. $Var(\bar{y})_{SRSWOR}$ _____ $Var(\bar{y})_{SRSWR}$ [b]

a. > b. < c. = d. None

21. $Var(\overline{y_{st}})$ _____ $Var(\bar{y})_{SRSWOR}$ [b]

a. > b. < c. = d. None

II. Fill in the blanks

1. Estimation of sample mean in SRSWOR $\bar{Y}_N$

2. Variance of sample mean in SRSWR $\frac{N-1}{Nn}S^2$

3. Variance of stratified sample $\frac{1}{N^2}\sum_{i=1}^{K} N_i(N_i-n_i)\frac{S_i^2}{n_i}$

4. $Var(\bar{y}_{st})_{prop} = \left(\frac{1}{n}-\frac{1}{N}\right)\sum_{i=1}^{K} P_i S_i^2$

5. Variance of sample mean in SRSWOR $\frac{N-n}{Nn}S^2$

6. $\bar{y}_{i.} = \frac{1}{n}\sum_{i=1}^{n} y_{ij}$

7. Variance of $\bar{y}_{st}$ is minimum for fixed total sample size n if $n_i \alpha N_i S_i$

8. $V_{ar}(\bar{y}_{st})$ is minimum for total cost if $n_i \alpha \frac{N_i S_i}{\sqrt{C_i}}$

9. In systematic sample $\int$ means intraclass correlation

10. S^2 means population mean square

11. $\bar{Y}_n$ means population mean

12. In systematic sampling, N = nK

13. Standard error of sample variance $\sigma^2\sqrt{2/n}$

14. Standard error of S, S.E(S) = $\sigma / \sqrt{2n}$ ρ

15. S.E (r) = $(1-\rho)^2/\sqrt{n}$

16. S.E(μ_3) = $\sigma^3\sqrt{96/n}$

17. S.E(μ_4) = $\sigma^4\sqrt{96/n}$

18. Population mean = $\frac{1}{N}\sum_{i=1}^{N} Y_i$

19. Sample mean = $\frac{1}{n}\sum_{i=1}^{n} y_i$

20. Population mean square S^2 = $\frac{1}{N-1}\sum_{i=1}^{N}(Y_i-\bar{Y})^2$

III. Short Answers

1. Define Sampling unit?

A: Smallest division of population

2. Define population?

A: A Group of individuals or things or items

3. Define sample?

A: It is a subset of population

4. Define sampling frame?

A: It is acceptable material which will provide all the information about population

5. Define standard error?
A: The standard deviation of sampling distribution of a statistic
6. Define simple random sampling?
A: It is a technique of drawing sample units has equal chance of every unit in population
7. What is probability sampling method?
A: It is a drawing a sample units according to same probability laws
8. What is stratification?
A: Division into layers
9. Standard error of sample mean in SRSWOR?
A: $S.E(\bar{y}) = \sqrt{\frac{N-n}{N}}, \frac{S}{\sqrt{n}}$
10. Complete the notation, $\left(\sum_{i=1}^{n} y_i\right)^2 = ?$
A: $\left(\sum_{i=1}^{n} y_i\right)^2 = \sum_{i=1}^{n} y_i^2 + \sum_{i=1}^{n} \sum_{j=1}^{n} y_i y_j$