



M 9827

Reg. No. :

Name :

V Semester B.Sc. Degree (CCSS – Reg./Supple./Imp.) Examination,
November 2015

CORE COURSE IN STATISTICS

5B07 STA Statistics using R

Time : 3 Hours

Max. Weightage : 30

PART – A

Answer **any ten** questions. **Each** question carries a weightage of **one**.

1. What do you mean by packages in R ?
2. How to input data in R programming, give an example.
3. Write down a useful R command for inputting small data sets with components 2, 5, 1, 6, 5, 5, 4 and 1.
4. What is the 95% percentile of standard normal distribution ? Write down R command to get this value.
5. Write down the R command to find the combination $\binom{10}{2}$.
6. What are the built in function for computing measures of central tendency ? Write down the name and operation of these functions ?
7. Write down the R command to construct confidence intervals for the differences of mean of two random samples of size 20, when the population variance is known to be the same.
8. Write down the R command to find sampling distribution of sample mean.

P.T.O.



9. Write down R command to find correlation coefficient.
10. Define power of a test.
11. Write down R command to carry out one way ANOVA. (W=10×1=10)

PART – B

Answer **any six** questions. **Each** question carries a weightage of **two**.

12. Explain R programming as a statistical software and language.
13. Explain the use of box plot. Give the R command to draw the box plot.
14. Write down R command for generating a random sample of 300 observations from a binomial distribution with mean 20 and variance 10 and find the median of the sample.
15. Write down the R command to generate a random sample from normal distribution using inverse method.
16. Write down the R command to find 10th percentile t distribution with degrees of freedom 20.
17. Explain simple linear regression. What is the use of scatter diagram in this context ?
18. Write down the R command to find p value in testing $H_0 : \rho = 0$ where compute value of t statistic using sample of size 20 was found to be 1.8.
19. Explain goodness of test. Write down the R command to test.
20. Explain different Chi-square tests used in testing of hypothesis. Also write the R command to perform Chi-square goodness of fit test. (W=6×2=12)

PART – C

Answer **any two** questions. **Each** question carries a weightage of **four**.

21. Explain the following :
 - a) Lists in R programming
 - b) Data frames in R programming
 - c) Work space in R programming
 - d) Scripts in R programming



22. Write down R command for

- a) Simulate 100 sample observations from the normal distribution with mean 50 and standard deviation 4.
- b) Find the mean and variance of generated sample.
- c) Draw Q-Q plot of the generated sample.
- d) Test whether the mean of the population is 50.
- e) Construct 98% confidence interval for the population mean.

23. Explain Monte Carlo method of estimation; also write R command to find the estimators.

24. Explain the procedure for constructing confidence intervals for the difference of means of two normal populations. Specify the underlying assumptions and methods to check them. Write down the R command to implement these.

(W= 2×4=8)
