

BSC DEGREE SEMESTER EXAMINATION, OCTOBER 2015
SEMESTER - 1 STATISTICS FOR BSC MATHS & BSC COMPUTER APPLICATION
COURSE : 15U1CPSTA1; 15U1CRCST1 DESCRIPTIVE STATISTICS

Time:3 Hours

Max. marks:75

Use of Scientific calculators and Statistical tables permitted

PART-A

*(Answer **all** questions. Each question carries **1** mark.)*

1. Find the arithmetic mean of the first n natural numbers.
2. Define mode and write the formula for finding mode of a grouped frequency table.
3. A man travels from his house to office at a speed of 10Km/Hr and returns to home at a speed of 15 Km/Hr in a cycle. Find the average speed in the entire journey.
4. Define coefficient of variation. What is its advantage over variance?
5. Define skewness.
6. Express the r^{th} central moment of a set of observations in terms of raw moments.
7. What is a scatter diagram?
8. Write the normal equations for fitting a straight line of the form $y = ax + b$.
9. Define quantiles of a distribution.
10. What is seasonal variation?

PART-B

*(Each question carries **3** marks. Maximum marks from this part is **15**.)*

11. The arithmetic mean of age of a group of 40 students in a class is 12. When the teacher is also included in the group, the mean is increased by one. Find the age of the teacher.
12. Define Harmonic mean of a set of observations. Mention any two disadvantage of it over Arithmetic mean.
13. If the variance of n observations x_1, x_2, \dots, x_n is σ_1^2 and the variance of another set of n observations y_1, y_2, \dots, y_n is σ_2^2 , find the variance of $u_i = x_i - y_i$, $i = 1, 2, \dots, n$.
14. Show that for a discrete set of observations, measure of kurtosis $\beta_2 > 1$.
15. Define Principle of least squares.
16. Explain cost of living index number.
17. Explain cyclic variation in time series analysis.

[P T O]