

Sree Chaitanya Mahavidyalaya
M.Com. (Semester-1) Examination-2021
Business Statistics-Paper-COMPCOR05T

Full Marks-40

Time-2 Hours

Group-A

1. Answer any five questions

5x2=10

- (a) What is the criteria for independence of two attributes?
- (b) Define regression coefficients of bivariate data.
- (c) Find the difference between 'SRSWR' and 'SRSWOR'.
- (d) What is meant by the term 'Power of a test' ?
- (e) Explain briefly 'Type-I error' and 'Type-II error'.
- (f) Explain the terms 'null and alternative hypothesis'.
- (g) State the conditions of 'standard normal' variable.
- (h) Write any two physical situations illustrating a Poisson random variable.

Group-B

Answer any two questions

2x5 =10

2. Define Yule's coefficient of association.
6000 students appeared in a MBA Entrance Examination and of those 1800 were successful. 1050 attended a preparatory class and of those 600 came out successful. Estimate the utility of the preparatory class. Also calculate the coefficient of association.
3. Define partial correlation coefficient and multiple correlation coefficient and indicate how they differ from simple correlation coefficient.
4. If $r_{12} = 0.80$, $r_{13} = 0.40$ and $r_{23} = -0.56$, find the values of $r_{12.3}$, $r_{13.2}$ and $r_{23.1}$.
5. What is meant by a 'statistic' and its 'standard error'? Give expressions for the standard error of the sample mean and the sample proportion.

Group-C

Answer any two questions

2x10=20

6. Describe briefly any three types of sampling methods that are commonly used.
A population consists of 6 members 2, 6, 5, 1, 7, 3. Consider all possible samples of size two which can be drawn without replacement from the population. Calculate the S.E of the sample mean.

7. What do you mean by two-tailed and one-tailed tests?

A car company decided to introduce a new car whose mean petrol consumption is claimed to be lower. A sample of 50 cars were taken and found that mean petrol consumption is 30 km. per liter and s.d 3.5 km. per liter. Test at 5% level of significance whether the company's claim that the new car's petrol consumption is 28 km. per liter is acceptable.

8. Write down the test-statistic for the test of a specified sample proportion.

A manufacturer claimed that at least 90% of the components which is supplied confirmed to specifications. A random sample of 200 components showed that only 164 were up to standard. Test his claim, at 5% level of significance.

9. Define the degrees of freedom of a test.

In 60 throws of a die, face 'one' turned up 6 times, face 'two' or 'three' 18 times, face 'four' or 'five' 24 times and face 'six' 12 times. Test at 10% significance level if the die is honest, given that $P(\chi^2 > 6.25) = 0.1$ for 3 degrees of freedom.

<p>Send your answer scripts to this e-mail psendnc2011@gmail.com</p>
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