QP CODE: 24018705

24018705

Reg No : .....

Name : .....

M A DEGREE (CSS) EXAMINATION , APRIL 2024

Second Semester

CORE - EC010205 - STATISTICAL METHODS FOR ECONOMIC ANALYSIS

M A ECONOMICS,MA BUSINESS ECONOMICS

2019 Admission Onwards

E9A68141

Time: 3 Hours | Weightage: 30

Part A (Short Answer Questions)

*Answer any **eight** questions.*

*Weight **1** each.*

1. Define Poisson distribution.
2. Mention any two merits of Normal distribution.
3. The variable X follows Normal distribution with mean 45 and SD 10. Find P(X > 60).
4. Define population and parameter.
5. Define standard error and degrees of freedom.
6. Define consistency and sufficiency of an estimate with an example each.
7. Define power of a test. Mention the relation between power and probability of type 2 error.
8. Write down the test statistic for testing the equality of means of two populations in large sample case when the population SDs (1) σ_1 and σ_2 are known (2) σ_1 and σ_2 are unknown.
9. Write the test statistic for testing the equality of proportions in two populations.
10. Define research design in research methodology.

(8×1=8 weightage)

Part B (Short Essay/Problems)

*Answer any **six** questions.*

*Weight **2** each.*

11. Eight unbiased coins were tossed simultaneously. Find the probability of getting (1) 6 or more heads (2) at most two heads (3) number of heads ranging from 3 to 5.
12. If 3% of electric bulbs manufactured by a company are defective, find the probability that in a sample of 100 bulbs, exactly 5 bulbs are defective.

13. Explain probability sampling.

14. Obtain the mle of parameter m of Poisson distribution.

15. The mean life of 100 fluroscent light tubes produced by a company is computed to be 1570 hours with standard deviation of 120 hours. The company claims that the average life of the tubes produced by the company is 1600 hours. Using the level of significance of 0.05, is the claim acceptable?

16. The following data gives the number of units produced per day by two workers A and B for a number of days. Can these results be accepted as evidence that the two workers are equally stable.

A	20	10	18	21	18	25
B	19	18	21	13	12	19

17. State the components of a research problem in research methodology.

18. Explain the main steps in preparing a layout of the research report in research methodology.

(6×2=12 weightage)

Part C (Essay Type Questions)

*Answer any **two** questions.*

*Weight **5** each.*

19. Fit a binomial distribution to the following data and obtain the expected frequencies

x	0	1	2	3	4
freq.	8	32	34	24	5

20. A random sample of size 10 obtained from a Normal population gives the values as 8.6, 7.9, 8.3, 6.4, 8.4, 9.8, 7.2, 7.8, 6.9, 8.2. Obtain 90%, 95% and 99% confidence intervals for the population mean.

21. (1) Explain the procedure for testing the independence of two attributes
(2) The following data on 320 students is classified according to social status and state of intelligence. A_1, A_2, A_3 denote three levels of social status and B_1, B_2, B_3 denote three levels of intelligence. Test whether intelligence is related to social status.

	A_1	A_2	A_3
B_1	22	35	23
B_2	38	70	32
B_3	60	20	20

22. Explain the research process in research methodology.

(2×5=10 weightage)