25P253 (Pages: 3) Name: .....

Reg.No: .....

SECOND SEMESTER M.A. DEGREE EXAMINATION, APRIL 2026

(CBCSS - PG)

(Regular/Supplementary/Improvement)

CC19PECO2C08 - QUANTITATIVE METHODS FOR ECONOMIC ANALYSIS - II

(Economics)

(2019 Admission onwards)

Time : 3 Hours Maximum : 30 Weightage

Part A

Answer ***all*** questions. Each question carries 1/5 weightage.

1. The probability of all possible outcomes of a random experiment is always equal to:
   (a) Infinity (b) Zero (c) One (d) None of these

2. The probability of intersection of two disjoint events is always
   (a) Infinity (b) Zero (c) One (d) None of the above

3. If X is a r.v. having the pdf f(x), then E(X) is called
   (a) Arithmetic mean (b) Geometric mean (c) Harmonic mean (d) First quartile

4. Binomial distribution was discovered by
   (a) James Bernoulli (b) Simeon Denis Poisson
   (c) Laplace (d) None of the above

5. A family of parametric distribution in which mean is equal to variance is:
   (a) Binomial (b) Poisson (c) Normal (d) Uniform

6. The frequency curve of lognormal distribution is always:
   (a) Positively skewed (b) Symmetric (c) Straight line (d) Negatively skewed

7. There are, generally speaking, two types of statistical inference. They are:
   (a) sample estimation and population estimation
   (b) Estimation theory and hypothesis testing
   (c) interval estimation for a mean and interval estimation for a proportion
   (d) independent sample estimation and dependent sample estimation

8. Chi square distribution curve is:
   (a) Negatively skewed (b) Symmetrical (c) Positively skewed (d) None of these

9. The concepts of consitency, efficiency and sufficiency are due to:
   (a) J. Neyman (b) R. A. Fisher (c) C.R. Rao (d) J. Bernoulli

10. The boundaries of a confidence interval are called:
    (a) The confidence limits (b) Significance levels
    (c) Confidence levels (d) None of these

11. The critical region in hypothesis testing gives:
    (a) Region of acceptance (b) Region of rejection
    (c) Sample space (d) The experimental region

12. To test the significance of proportion, we use:
    (a) t-test (b) F-test (c) Normal test (d) Chi-square test

13. Formula for the confidence interval for the ratio of variances of two normal popualtion involves:
    (a) Chi-square distribution (b) F-distribution
    (c) t-distribution (d) none of the above

14. When the number of treatments in Kruskal-Walis test is two, the statistic H reduces to:
    (a) Mann-Whitney U statistic (b) Wilcoxon's U statistic
    (c) both (a) and (b) (d) neither (a) nor (b)

15. In ANOVA we test:
    (a) The equality of several variances (b) Significance of mean
    (c) The equality of several means (d) Significance of variance

(15 × 1/5 = 3 Weightage)

Part B (Very Short Answer Questions)

Answer any ***five*** questions. Each question carries 1 weightage.

16. State empirical definition of probability.

17. Define conditional distributions.

18. Define Binomial distribution.

19. Define population and parameter.

20. Mention any two uses of student's t test.

21. Define statistical inference.

22. Define non parametric tests.

23. Define sign test.

(5 × 1 = 5 Weightage)

Part C (Short Answer Questions)

Answer any ***seven*** questions. Each question carries 2 weightage.

24. The probability that A hits a target is 1/4 and the probability that B hits it is 2/5. What is the probability that the target will be hit if A and B each shoot at the target?

25. (i) State Baye's theorem. (ii) A box contains 3 blue and 2 red balls while another box contains 2 blue and 5 red balls. A ball drawn at random from one of the boxes turns out to be blue. What is the probability that it came from the first box?

26. Find the probability distribution of the number of heads when three coins are tossed together?

27. Define mathematical expectation and give any two properties of it.

28. State central limit theorem and give its assumptions.

29. Distinguish between point estimation and interval estimation.

30. Explain how you would find interval estimates for the mean of a normal population.

31. Explain the method of least squares.

32. Explain the terms (i) Significance level (ii) Power of the test (iii)Type I and Type II errors.

33. Explain two way ANOVA technique.

(7 × 2 = 14 Weightage)

Part D (Essay questions)

Answer any ***two*** questions. Each question carries 4 weightage.

34. Describe the Poisson distribution. Derive its mean and variance.

35. What is normal distribution? Discuss the usefullness and properties of normal distribution.

36. (i) Mention the procedure for testing the equality of means of two populations. (ii) For a sample of 100 labourers from Kerala, the average daily wages is Rs 10.5 with Sd Rs 1.5. For a sample of 150 labourers from Tamil Nadu, the corresponding figures are Rs 8 and Rs 1 respectively. Can you conclude that the average wages of workers in Kerala are more than that of workers in Tamil Nadu.

37. What is ANOVA? What are the assumptions of it? Explain one way ANOVA.

(2 × 4 = 8 Weightage)

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