TB176295W

Reg. No :.....

Name :.....

B. A. DEGREE (C.B.C.S. S) EXAMINATION, MARCH 2023
(2015, 2016 and 2017 Admissions Supplementary)
SEMESTER VI - CORE COURSE (ECONOMICS) EC6B11B
- QUANTITATIVE ECONOMICS

Time : 3 Hours **Maximum Marks : 80**

Part A

I. Answer all questions. Each question carries 1 mark (6x1=6)

1. What is Normal Distribution?
2. What are mutually exclusive events?
3. What is the difference between large and small samples?
4. Define degrees of freedom.
5. What is composite hypothesis?
6. What is deseasonalising?

Part B

II. Answer any Seven questions. Each question carries 2 marks (7x2=14)

7. X is a normal variate with mean 30 and SD 5. Find the probabilities that (i) $26 \leq x \leq 40$ (ii) $x \geq 45$.
8. Define the terms (i) Random experiment (ii) sample space (iii)Event (iv) random variable
9. What are the characteristics of Random variable?
10. What are the uses of chi square test?
11. Distinguish between estimate and estimator.
12. Explain the terms standard error, level of significance and rejection region in the context of testing of hypothesis.
13. Differentiate between two tailed and one tailed tests with suitable examples.
14. How can studying trend helps in removing it?
15. What is smoothing technique?
16. What are the merits and demerits of free hand curve method?

Part C

III. Answer any Five questions. Each question carries 6 marks (5x6=30)

17. Consider families with 4 children each. What percentage of families would you expect to have (a) two boys and two girls (b) at least one boy (c) no girls and (d) at the most two girls. Use Binomial distribution. Assume equal probabilities for boys and girls.
18. A bag contains 7 white balls, 5 black balls and 4 red balls. If two balls are drawn at random from the bag find the probability that
    (i) both the balls are white
    (ii) one is black and other is red
    (iii) none of them is red.
19. In a normal distribution 17% of the items are below 30 and 17% of the items are above 60. Find the mean and standard deviation.
20. Explain the steps in the test of goodness of fit.

21. Explain the properties of estimators.
22. Distinguish between cyclical and seasonal fluctuations.
23. What is trend? What are the various methods of measuring it?
24. What is time series? Explain the analysis of time series and list out its uses.

Part D

IV. Answer any Two questions. Each question carries 15 marks (2x15=30)

25. The scores of students in a test follow normal distribution with mean = 80 and SD= 15. A sample of 1000 students has been drawn from the population. Find (1) probability that a randomly chosen student has score between 85 and 95 (2)appropriate number of students scoring less than 60.
26. In a sample of 10 observations the sum of the squared deviations of items from the mean was 101.7. In another sample of 8 observations the value was found to be 94.5. Test whether the difference is significant at 5% level.
27. Test whether the accidents occur uniformly over week days on the basis of following information

Days of the week	Sun	Mon	Tue	Wed	Thurs	Fri	Sat
No. Of accidents	11	13	14	13	15	14	18

28. What are seasonal variations? Explain the factors responsible for, the uses and methods of measurement of seasonal variations.