TB256953Q

Reg. No :.....

Name :.....

BACHELOR'S DEGREE (C.B.C.S) EXAMINATION, MARCH 2025

2016, 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. State the Central Limit Theorem.
2. What is Probability?
3. Differentiate between statistic and parameter.
4. What is power of a test?
5. Differentiate between null and alternative hypothesis.
6. What is seasonal index?

Part B

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

7. Define random variable. What do you mean by distribution of random variable?
8. X is a normal variate with mean 30 and SD 5. Find the probabilities that (i) $26 \leq x \leq 40$ (ii) $x \geq 45$.
9. What are the characteristics of Random variable?
10. A random sample of size 16 has 53 as mean. The sum of the squares of the deviations taken from mean is 150. Obtain 95% and 99% confidence limits of the population mean.
11. What do you mean by (i) power of a test (ii) critical region?
12. Explain which test helps in identifying the statistical difference of two sample means.
13. List out the commonly used sampling distributions?
14. What are the merits and demerits of free hand curve method?
15. List out the uses of studying seasonal variations.
16. What are seasonal variations? What are the methods used for measuring seasonal variations?

Part C

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

17. What is Poisson distribution? What are its uses.
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. State the salient features of Binomial distribution. Give situations in real life where this distribution is likely to be realised.
20. What is point estimation? Explain the various methods used.
21. Explain how you test the significance of difference between two sample means.
22. Write a note on cyclical and irregular variations.
23. What are seasonal variations? Explain the uses of seasonal indices in business problems.

24. Explain deseasonalisation.

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. A certain stimulus administered to each of the 12 patients resulted in the following increase of blood pressure: 5, 2, 8, -1, 3, 0, -2, 1, 5, 0, 4, 6. Can it be concluded that the stimulus will, in general be accompanied by an increase in blood pressure?

27. Given the following data relating to social status and state of intelligence. Test whether intelligence is related to social status.

	Dull	Intelligence	Brilliant	Total
Lower Middle	22	35	23	80
Middle	38	70	32	140
Upper Middle	60	20	20	100
	120	125	75	320

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