

B. A. DEGREE END SEMESTER EXAMINATION - APRIL 2021**21U602****SEMESTER –6: ECONOMICS (CORE COURSE)****COURSE: 15U6CRECO11: QUANTITATIVE ECONOMICS***(Common for Regular 2018 Admission & Improvement 2017/Supplementary 2017/2016/2015 Admissions)*

Time: Three Hours

Max Marks: 75

PART A***Answer all questions in one or two sentences.******Each question carries 1 mark.***

1. Dependent variable
2. Coefficient of Variation.
3. Central moments
4. Scatter Diagram.
5. Local Maxima.
6. Kurtosis.
7. Sample Space.
8. Derivative of a function.
9. Conditional Probability.
10. Median

(1 x 10 = 10)

PART B***Answer any eight of the following in three or four sentences.******Each question carries 2 marks.***

11. What do you mean by mutually exclusive events? Give examples.
12. Write down the necessary conditions for maxima and minima of a function.
13. Mean and variance of the prices of ten commodities in two regions are given below. In which region are the prices more consistent.

| | Region A | Region A |
|------------|----------|----------|
| Mean Price | 60 | 45 |
| Variance | 9 | 4 |

14. Calculate the first four central moments:
 - a. X: 2 4 6 8 10 12
15. Distinguish between positive and negative correlation.
16. Discuss the properties of Binomial distribution.
17. Explain the application of regression analysis in Economics.
18. Comment on the merits and demerits of median.
19. The μ_2 and μ_3 of a distribution are estimated as 12.6 and 8.4 respectively. Estimate skewness.
20. Write on the mathematical properties of Arithmetic Mean

(2 x 8 = 16)

PART C

**Answer any five of the following in not more than one page.
Each question carries 5 marks.**

21. Two persons X and Y appear for an interview for two vacancies. Their chances of being selected are $\frac{1}{5}$ and $\frac{1}{3}$ respectively. Find the probability that a) only one of them will be selected b) both of them will be selected and c) none of them will be selected.
22. Briefly explain the relationships and differences between correlation and regression analysis.
23. Three Samples with sizes 70, 90 & 110 with means 45, 62 & 82 respectively were combined. Find the combined mean.
24. Find the correlation coefficient for the following data
Demand : 200 250 300 350 400 450 500
Price : 13 14 17 20 22 25 27
25. A box contains 7 red balls, 6 white balls and 3 green balls. If a ball is drawn at random, what is the probability that it is red or green.
26. Point out the properties of Correlation coefficient.
27. Define moments. State the relationship between central and raw moments.

(5 x 5 = 25)

PART D

**Answer any two of the following in not exceeding four pages.
Each question carries 12 marks.**

28. Explain the addition & multiplication theorems of probability, with examples.
29. What is dispersion? Explain the different methods of estimating it?
30. From the following data relating to marks of 50 students in two subjects, obtain the two regression equations.

| | Subject X | Subject Y |
|--------------------|-----------|-----------|
| Arithmetic Mean | 60 | 130 |
| Standard Deviation | 12 | 16 |

Correlation Co-efficient, $\gamma = 0.6$.

31. State the properties of a symmetric distribution.
Mean salary of 500 workers in a factory is Rs 6810 with a standard deviation of Rs 330. How many workers in the factory would you expect a salary greater than Rs 7200 assuming that the distribution is normal?

(12 x 2 = 24)
