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TB244992X

Reg. No :.....

Name :.....

Integrated M.A . Programme in Social Sciences (C.S.S) EXAMINATION, MARCH 2024

2022 ADMISSIONS REGULAR

SEMESTER IV - CORE COURSE

EC04C14IM20 - Quantitative Methods in Economics – II

Time : 3 Hours **Maximum Weight : 30**

Part A

I. Answer any Eight questions. Each question carries 1 weight **(8x1=8)**

1. Write the properties of regression line.
2. Define coefficient of correlation.
3. Define Paasche's Formula.
4. What is an Ideal Index Number?
5. What is a Free Hand Method?
6. Explain briefly the method of Semi Averages.
7. Difference between simple event and compound event.
8. Difference between Uni-dimensional and Bi-dimensional sample space.
9. What is distribution function? State its properties.
10. A random variable x follows a probability distribution as given below. Find the value of k.

x	0	1	2	3
f(x)	k/2	k/3	k+1/3	2k-1/6

Part B

II. Answer any Six questions. Each question carries 2 weight **(6x2=12)**

11. Find the regression equation of y on x

x	1	2	3	4	5	6	7	8	9
y	9	8	10	12	11	13	14	16	15

12. It is stated that Marshall Edgeworth Index number is a good approximation to the Ideal Index Number. Verify using the following data.

Commodity	Year (2000)		Year (2010)	
	Price	Quantity	Price	Quantity
A	2	74	3	82
B	5	125	4	140
C	7	40	6	33

13. Write a short note on the components of Time Series.
14. Define Trend. What are the various methods of measuring it?
15. Briefly explain secular trend and seasonal variations.
16. Explain relative frequency approach of probability.
17. Three cards are drawn from a pack of playing cards after replacing the drawn card in each trial. Find the probability that all the three cards are aces.

18. What is a random variable? Explain the two types of random variables.

Part C

III. Answer any Two questions. Each question carries 5 weight **(2x5=10)**

19. The following table shows the number of motor registrations in a certain territory for a term of 5 years and the sale of motor tyres by a firm in that territory for the same period .
    i)Find the regression equation to estimate the sale of tyres when motor registration is known.
    ii)Estimate the sale of tyres when registration is 850.

Year	Motor registration	No. of tyres sold
1	600	1250
2	630	1100
3	720	1300
4	750	1350
5	800	1500

20. Calculated Weighted Index Number by: 1. Laspeyer's Method 2. Paasche's Method 3. Bowley-Dorbish Method 4. Fisher's Method and 5. Marshall Edgeworth method.

Commodity	Price		Quantity	
	Base Year	Current Year	Base Year	Current Year
A	4	7	10	8
B	5	9	8	6
C	6	8	15	12
D	2	2	5	6

Also explain the characteristics of Index Numbers.

21. Fit a straight line to the following series by the method of Least Squares.

Year	2010	2011	2012	2013	2014	2015	2016
Production of Iron in tons	10	13	12	14	12	16	14

22. Explain axiomatic approach to probability. Discuss the important terms related to axiomatic approach using suitable examples.