2nd In-Semester Examination- Nov-2022

**B.Com 3rd Semester**

Subject: **Business Statistics**

*Time: 45 Minutes Marks: 25*

***(Answer any five from the following questions)***

1. What is the difference between coefficient of standard deviation and coefficient of variation?

Define skewness. What are the different methods of calculating measure of skewness? *2+1+2=5*

1. What are the advantages of sampling method over complete enumeration method? Define probability sampling and non-probability sampling. *3+2=5*
2. In what situation stratified sampling is used to draw sample from a population? Mention its merits and demerits. *2+3=5*
3. A coin is tossed six times. What is the probability of obtaining four or more heads? 5
4. In a city, 1% residents are colour blind. Find the probability that out of 100 persons selected at random, atmost one is colour blind. (given e-1=0.368) *5*
5. What do you mean by time series? Define the components of a time series. *1+4=5*
6. Calculate Fisher’s index from the data given below and hence prove that Fisher’s index number satisfies factor reversal test and time reversal test. 2+3=*5*

|  |  |  |
| --- | --- | --- |
| **Commodity** | **Base Year** | **Current Year** |
| **Price** | **Quantity** | **Price** | **Quantity** |
| A | 5 | 50 | 10 | 56 |
| B | 3 | 100 | 4 | 120 |
| C | 4 | 60 | 6 | 60 |
| D | 11 | 30 | 14 | 24 |
| E | 7 | 40 | 10 | 36 |

1. Define correlation analysis? Mention its uses. Give the interpretations when the correlation coefficient takes the values 0, 1 and -1. *2+1+2=5*
2. Compute the coefficient of correlation from the following results: *5*

$n=10$, $\sum\_{}^{}x=125$, $\sum\_{}^{}y=80$, $\sum\_{}^{}x^{2}=1586$, $\sum\_{}^{}y^{2}=650$, $\sum\_{}^{}xy=1007$.

1. Estimate trend values by using 4-yearly moving average for the following data: *5*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Year | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
| Sale | 60 | 46 | 53 | 54 | 48 | 48 | 42 | 51 |

1. Given the two regression equations as $8x-10y+66=0$ and $40x-18y=214$. Find the correlation coefficient between $x$ and $y$**.** *5*

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