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Shree Damodar College of Commerce & Economics, Margao-Goa
FY BBA(FS), Semester-II, Semester End Assessment Repeat November 2023
BFS CC 8 - Data Analysis and Quantitative Techniques

__Duration: 2hrs__ __Max Marks: 60__

Instructions:

1) Start each question on fresh page.
2) Figures to the right indicate maximum marks.
3) Non-scientific, non-programmable calculators are allowed
4) Graph papers will be provided on request

Q1   Answer the following   [2x6=12Marks]

A. Using three yearly moving average determine the trend and short term fluctuations. Plot the original data and trend values on the same graph

Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Production in 000 units	1210	1200	1230	1250	1240	1220	1250	1260	1250	1260

OR

B. The following are the cost-of-living Index Numbers. Find out trend values assuming five yearly cycles. Plot the original data and trend values on the same graph

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009
Cost of living Index No.	100	110	120	150	125	120	118	110	140

X. The following figures gives the experience in years and commission in thousand Rs per month of 6 salesmen. Using Karl Pearson's Coefficient of Correlation, determine the correlation coefficient and type of correlation.

Salesmen	A	B	C	D	E	F
Experience in years	3	2	3	4	1	2
Commission in thousand	4	4	5	3	8	6

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Q2. Answer the following   [1x 12=12 Marks]

A. Due to heavy rains, most of the records from a survey office are washed out. However, a partial record of the following data is available.

i.   Variance of x=25

ii.   Regression equations are 5y-x=21 and 64x-45y=31

Identify the lines of regression, State the regression coefficients. Determine the standard deviation of x and y, state the correlation coefficient of the variables. Find value of x when y is 3 and value of y when x is 1.5

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OR

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B. For the following bivariate data,

X	3	5	6	7	8	1
y	6	3	5	2	4	10

Find:1) The coefficient of correlation

ii) The coefficient of regression

iii) Equations of lines of regression

iv) value of y when x=2 and value of x when y=1

Q3. Answer the following   [2x6=12Marks]

A. It is observed that out of 5 T.V progrmmes, only one is popular. If 3 new programmes are introduced, find the probability that

i.   None is popular

ii.   At least one is popular

iii.   At most 2 are popular

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OR

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B. The probability that a person will react to a drug is 0.001. out of 2000 individuals checked, find the probability that

i.   Exactly 3 individuals

ii.   More than 2 individuals

iii.   At most 3 individuals get a reaction

       (given : e^{-2}= 0.135)

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X. The fund manager of a mutual fund found following yield (%) for 8 years. Fit a linear trend to this data and estimate yield (%) for 9th year.

Year	1	2	3	4	5	6	7	8
Yield (%)	5.7	6	6.4	6.7	7.1	7.5	7.7	7.9

Q4. Answer the following **[2x6=12Marks]**

A. Find Laspeyre's, Paasche's and Fisher's Index Numbers For of the following

Group	Base Year		Current year	
	Price	Quantity	Price	Quantity
Food	90	40	70	90
Clothes	70	10	50	20
House Rent	60	20	30	40
Miscellaneous	80	30	50	30

OR

B. For the following data taking smallest year as the base year, find the weighted Index Number of the given years, using

  i.   Weighted Aggregative Method

  ii.   Weighted Average if Price Relative Index Numbers

Commodities	Prices per Kg		Weightage
	2010	2015	
Food	10	20	3
Clothing	12	36	4
Travelling	15	25	6
Maintenance	22	33	8
Miscellaneous	11	44	2

X. Describe the significance, uses, limitations, and method of performing ANOVA test. Give 2 suitable examples.

Q5. Answer the following **[2x6=12Marks]**

A. Two dice are thrown. Find the probability that

  i.   The sum of numbers on their uppermost faces is

    a. Upto 4

    b. Greater than 4

    c. At least 11

  ii.   The score on second die is greater than the score on the first die.

OR

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B. A bag contains 10 lottery tickets with numbers 1 to 10. Two tickets are drawn at random. Find the probability that,

   i. both are even numbers
   ii. exactly one is even
   iii. atleast one is even
   iv. at most one is even

X. Explain the concepts Inflation and Deflation using examples and hence find the Real Income of the following data taking into account the increase in the standard of living.

Year	2010	2011	2012	2013	2014	2015	2016
Income in Rs	2000	2500	3100	4200	4500	5500	6800
Index Number	100	120	140	250	260	300	340