

Vidya Vikas Mandal's
Shree Damodar College of Commerce & Economics, Margao-Goa
FY BBA(FS), Semester-II, Semester End Assessment April 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. Define 'Time Series' with the help of 2 real-life examples. And hence calculate four yearly moving average of the following data.

Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Production In tones	506	620	1036	673	588	696	1116	738	663	773	1189

OR

B. Calculate 5 yearly moving averages of the number of students in a college from the following data. Plot the original data and trend values on same graph

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
No. of students	332	317	357	392	402	405	510	427	405	438

X. The following table gives the income per month in thousands of 6 married couples. Using Karl Pearson's Coefficient of Correlation, determine the correlation coefficient and type of correlation.

Couples	1	2	3	4	5	6
Income of Husband	2	6	4	4	3	5
Income of Wife	1	7	2	0	3	5

Q2. Answer the following**[1x12=12 Marks]**

- A. For the following lines of regression,
 $3x-2y=6$ and $8x-3y=44$
- Identify the regression lines
 - state the coefficient of regression
 - Find coefficient of correlation
 - Ratio of Standard deviation of x and y
 - Find the mean of x and y

OR

- B. For the following bivariate data,

X	4	6	8	10
y	2	3	5	6

- Find: i) Arithmetic mean of x and y
 ii) Variance of x and y
 iii) Standard deviation of x and y
 iv) Covariance
 v) The coefficient of correlation
 vi) The coefficient of regression
 vii) Equations of lines of regression

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

- A. The probability that a student is not a swimmer is $\frac{1}{5}$. Out of 5 students considered, find the probability that
- 4 are swimmers
 - At least 4 are swimmers
 - At most 2 are swimmers

OR

- B. The average number of customers, who appear at the counter in a telephone exchange in one minute is 2. Find the probability that in a given minute
- No customer appears
 - At least 2 customers appear
 - At most 2 customers appear
- (given : $e^{-2} = 0.135$)

X. The cash flows of a certain company from January 2017 to September 2017 are as follows. Calculate trend values by method of least square from the data given below. Also estimate the cash flows for November 2017

Month	Jan	Feb	March	April	May	June	July	Aug	Sept
Cashflow	200	100	150	450	180	380	380	380	640

Q4. Answer the following

[2x6=12Marks]

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

Commodity	Base Year		Current year	
	Price	Quantity	Price	Quantity
Rice	30	3	40	3
Dal	60	4	50	1
Pulses	50	9	50	4
Wheat	70	2	60	2

OR

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

- Weighted Aggregative Method
- Weighted Average if Price Relative Index Numbers

Commodities	Prices per Kg		Weightage
	2016	2017	
Onion	36	54	3
Potato	32	48	4
Cauliflower	52	104	2
Cabbage	26	78	1
Green Peas	80	120	3

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

Q5. Answer the following

[2x6=12Marks]

A. From a pack of well shuffled cards, two cards are drawn at random. Find the probability that

- Both are queens
- one is king other is queen
- both are red
- both are face cards
- one is a diamond and a spade

OR

B. There are 5 Indians, 4 Australians and 3 Russians in a group. If two persons are to be selected at random, find the probability that:

- Both are Indians
- None is Indian
- At least one is Indian
- At most one is Indian
- Both are from different nationalities

X. State any 2 uses and limitations of Index numbers 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	2017
Per capita income in Rs	1500	1600	1650	1787	1965	2162	2486	2933
Cost of Living Index Number	100	110	115	125	140	160	220	240