

VidyaVikasMandal's  
Shree Damodar College Of Commerce & Economics Margao, Goa  
F.Y.BBA (FS) , Semester II, April 2016  
Data Analysis and Quantitative technique  
End Semester Examination

Duration: 2 Hours

Max. Marks: 60

Instructions: Figures to the right indicate maximum marks.

Non Scientific calculator is allowed.

In QI, answer any 3.

In QII and QIII, answer any 4.

QI. Answer ANY 3: (3 X 4 M = 12 M)

1. Describe components of time series.
2. For,  $n = 20$ ,  $\sum x = 400$ ,  $\sum y = 510$ ,  $\sum x^2 = 9140$ ,  $\sum y^2 = 21340$ ,  $\sum xy = 10060$ . Find regression equation  $y$  on  $x$ .
3. Four cards are drawn from a well – shuffled pack of 52 cards. Find the probability that
  - a. At least three black
  - b. All are of same suit
4. From the following data, calculate
  - a. Laspeyer's Price index number.
  - b. Paasche's Quantity index number.

Commodity	Current year		Base year	
	Quantity	Price	Quantity	Price
A	60	10	50	10
B	20	12	60	9
C	40	6	80	7
D	100	8	120	8

5. Plot the trend line using 2 yearly moving averages method and original line for the production of wheat from the following data:

Year	2009	2010	2011	2012
Production of wheat (in tons)	53	51	56	55

QII. Answer ANY 4: (4 X 6M = 24M)

1. Calculate an index number for 2001 with 1999 as base by using
  - a. Simple Aggregative price Index number
  - b. Weighted average of price relative.

Commodity	Price in year		Weight
	2001	1999	
A	450	200	15
B	320	250	17
C	450	300	16
D	180	100	21



2. Calculate the Karl Pearson's correlation coefficient between Marks of Cyber Security and Statistics

Marks in Cyber Security	23	34	25	26	35	37	36	16
Marks in Statistics	35	46	51	34	25	46	26	48

3. A committee of 3 is to be formed from group of 6 boys and 4 girls. Find the probability that the committee consists of

- 2 boys and 1 girl
- At least one girl
- At most one girl

4. Calculate 3 yearly moving averages and plot trend line for the following data:

Year	2009	2010	2011	2012	2013	2014	2015
No. of workers	430	470	450	460	480	470	500

5. Fit a linear trend line using least square method for the following data. Also, estimate production of wheat for year 2016.

Year	2009	2010	2011	2012	2013	2014
Production of wheat (in tons)	53	51	56	55	58	63

QIII. Answer ANY 4:

(4 X 6M = 24M)

1. Students in a summer school programme took two courses, chemistry and physics. Of these students, probability of students failed in chemistry is 0.04, in physics is 0.03 and in both is 0.01. Find the chance that a student selected a random

- Passed in at least one of the two
- Passed in chemistry and failed physics
- Passed in physics and failed chemistry

2. Verify Fisher's Time reversal test for the following data:

Commodity	2000		2005	
	Price	Quantity	Price	Quantity
Rice	16	60	10	50
Wheat	12	20	19	60
Jowar	14	40	17	40
Milk	10	50	18	30

3. The sales manager of automobile dealer estimate that 90% of the new cars delivered by them have no defects and so will not be brought back immediately for repair. He sells a fleet of six cars to an important customer. What is the probability that

- no car will be brought back?
- one or more car will be brought back for repair?



4. For bivariate data, the regression lines are  $2x + y = 30$  and  $3x + 5y = 42$ .
- Find correlation coefficient between  $x$  and  $y$ .
  - Find angle between two regression lines.
  - Find the most probable value of  $y$  when  $x = 9$ .

5. Find Rank correlation coefficient for the following data:

No. of runs scored	15	25	35	45	15	15
No. of Innings	14	18	14	18	15	10

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