



M 3844

Reg. No. : .....

Name : .....



**II Semester B.A./B.Sc./B.Com./B.B.A./B.B.A.T.T.M./B.B.M./B.C.A./B.S.W.  
Degree (CCSS – Reg./Supple./Improv.) Examination, May 2013  
COMPLEMENTARY COURSE IN COMMERCE  
2C02 COM : Quantitative Techniques for Business Decisions  
(2012 Adm.)**

Time : 3 Hours

Max. Weightage : 30

**PART – A**

This Part consist of two bunches of questions carrying **equal** weightage of **one**. **Each** bunch consists of **four** objective type questions. Answer **all** questions.

I. 1. The correlation coefficient will have positive sign when

- a) X is increasing and Y is decreasing
- b) Both X and Y are increasing
- c) X is decreasing and Y is increasing
- d) Both X and Y remains the same

2. The regression coefficients are  $b_1$  and  $b_2$ , then the correlation coefficient is

- a)  $b_1/b_2$
- b)  $b_2/b_1$
- c)  $b_1b_2$
- d)  $\pm \sqrt{b_1b_2}$

3. If the lines of regressions are  $Y = \frac{1}{4} X$  and  $X = \frac{1}{9} Y + 1$  then the mean of Y is

- a)  $\frac{9}{35}$
- b)  $\frac{35}{9}$
- c)  $\frac{9}{4}$
- d)  $\frac{4}{9}$

4. Increasing demand of electric fans in summer is

- a) trend
- b) cyclical
- c) seasonal
- d) irregular **(W=1)**

II. 5. The probability of drawing any one spade card from a pack of cards

- a)  $\frac{1}{52}$
- b)  $\frac{1}{13}$
- c)  $\frac{4}{13}$
- d)  $\frac{1}{4}$

P.T.O.



6. A and B are two independent events such that  $P(A) = 0.7$   $P(B) = K$  and  $P(A \cup B) = 0.8$ , then K is

- a)  $\frac{2}{3}$       b)  $\frac{1}{3}$       c)  $\frac{7}{8}$       d)  $\frac{1}{8}$

7. The co-efficient of variation of Poisson with mean 4 is

- a)  $\frac{1}{4}$       b)  $\frac{2}{4}$       c) 4      d) 2

8. Trend can be measured using \_\_\_\_\_ method.

- a) Free hand curve      b) Link relative  
c) Residual      d) Cycle analysis.

(W=1)

### PART – B

Answer **any eight** questions in **one or two** sentences **each**. **Each** question carries a weightage of **one**.

9. Define probability density functions.
10. What is coefficient of rank correlation ?
11. Explain the regression lines.
12. What do you mean by the method of moving average ?
13. Distinguish between perfect and imperfect correlation.
14. State the method of least squares.
15. What is meant by time series analysis ?
16. State Baye's theorem.
17. Derive the mean of a Poisson distribution.
18. Explain classical probability.

(W=8×1=8)

### PART – C

Answer **any six** questions. Answer not to exceed **one** page **each**. **Each** question carries a weightage of **two**.

19. A card is drawn from a well shuffled pack of 52 cards. What is the probability that it is a king or a spade ?



20. State and prove addition theorem in probability. What happens when event are independent ?

21. In a correlation study the following values are obtained

	X	Y
Mean	65	67
SD	2.5	3.5

The coefficient of correlation is 0.8. Find the regression equations.

22. What is a scatter diagram ? What are the advantages of it ?

23. Fit a straight line trend by the method of least squares.

Year	2003	2004	2005	2006	2007
Profit	45	56	78	46	75

24. What is meant by normal distribution ? Mention its important properties ?

25. Discuss about different types of regression.

26. Distinguish between irregular fluctuation and cyclic variation. (W=6×2=12)

PART – D

Answer **any two**. **Each** question carries a weightage of **four**.

27. Find arithmetic mean and correlation coefficient from the following regression equations.

$$2y - x - 50 = 0, 3y - 2x - 10 = 0$$

28. Calculate the correlation. Can you assert that failure is correlated with age :

<b>Age of candidate</b>	13	14	15	16	17	18	19	20	21
<b>Percentage of failure</b>	39	41	43	34	37	39	49	47	55

29. Fit binomial distribution.

X	0	1	2	3	4	5	6	7
f	7	6	19	35	30	23	7	1

Find the expected frequencies if the number of successes is 4 ? (W=2×4=8)

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