

STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI – 86
(For candidates admitted from the academic year 2008 – 2009 & thereafter)

SUBJECT CODE: EC/AC/SE24

B. A. DEGREE EXAMINATION, APRIL 2011
BRANCH IV - ECONOMICS
SECOND SEMESTER

COURSE : ALLIED – CORE
PAPER : STATISTICS FOR ECONOMICS -II
TIME : 3 HOURS. MAX. MARKS: 100

SECTION – A

ANSWER ALL QUESTIONS IN 50 WORDS EACH. (10x3=30)

1. What are the properties of the coefficient of correlation?
2. Distinguish between linear and non-linear correlation.
3. What is a scatter diagram?
4. What is meant by 'regression'?
5. State the meaning of regression coefficient and the regression lines.
6. What is a time series? State any three uses.
7. How to measure the seasonal variation?
8. What is the probability of getting 'Head' while tossing a coin?
9. Define mutually exclusive events.
10. The probability of getting admission in a college is 0.78. What is the probability of not getting admission?

SECTION – B

ANSWER ANY FIVE QUESTIONS IN 300 WORDS EACH. (5x6=30)

11. Explain the following terms with suitable illustration:
a) simple correlation b) partial correlation c) multiple correlation
12. Calculate Spearman's coefficient of correlation between marks assigned to ten students by judges X and Y in a test as shown below:

S.No.	1	2	3	4	5	6	7	8	9	10
Marks by Judge X	52	53	42	60	45	41	37	38	25	27
Marks by Judge Y	65	68	43	38	77	48	35	30	25	50

13. Briefly explain the coefficient of determination.
14. Given the following data:
 $\bar{X}=36; \bar{Y}=85; \sigma_x=11; \sigma_y=8; r=0.66$
Find the two regression equations and estimate the value of x when y=75.
15. Distinguish between correlation and regression analysis.
16. Fit a trendline to the following data by the method of semi-averages with a suitable sketch.

Year	1999	2000	2001	2002	2003	2004	2005
Sales ('000 units)	102	105	114	110	108	116	112

17. Find the probability that in a family of 4 children there will be
 a) at least 1 boy b) at least 1 boy and 1 girl.
 Assume that the probability of a male birth is $\frac{1}{2}$.

SECTION – C

ANSWER ANY TWO QUESTIONS 1200 WORDS EACH. (2x20=40)

18. Calculate Pearson's coefficient of correlation from the following data using 44 and 26 as the origin of X and Y respectively.

X	43	44	46	40	44	42	45	42	38	40	42	57
Y	29	31	19	18	19	27	27	29	41	30	26	10

19. Find two regression equations for the following two series. What is most likely value of X when $Y = 20$ and most likely value of Y when $X=22$.

X	35	25	29	31	27	24	33	36
Y	23	27	26	21	24	20	29	30

20. a) Briefly explain the components of time series analysis.
 b) Calculate the trend values by the method of least squares from the data given below:

Year	1992	1995	1997	1998	2000	2001	2003
Value	75	67	68	65	50	54	41

21. a) Explain the relationship between binomial and normal distribution.
 b) One bag contains 4 white balls and 2 black balls; another contains 3 white balls and 5 black balls. If one ball is drawn from each bag, find the probability that a) both are white, b) both are black and c) one is white and one is black.
