

**STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI – 86**  
**(For Candidates admitted during the academic year 2015 – 2016 and thereafter)**

**SUBJECT CODE: 15EC/AC/SE15**

**B.A. DEGREE EXAMINATION NOVEMBER 2018**  
**BRANCH IV – ECONOMICS**  
**FIRST SEMESTER**

**COURSE : ALLIED - CORE**  
**PAPER : STATISTICS FOR ECONOMICS**  
**TIME : 3 HOURS**

**MAX. MARKS: 100**

**SECTION – A**

**ANSWER ANY TEN QUESTIONS. EACH ANSWER NOT TO EXCEED 50 WORDS**  
**(10x2=20)**

1. Define positive and negative correlations.
2. Write down the equations of regression lines.
3. A coin is tossed twice find the probability of getting exactly 2 Heads?
4. State the properties of correlation co-efficient.
5. What is meant by Poisson distribution?
6. It was found that a Binomial distribution, the mean is 5 and SD is 3 can it be true.
7. What is null hypothesis?
8. Distinguish between large sample and small sample
9. List out the components of time series data.
10. In a throw of a single die, 5 or 6 are considered a success. Find the mean number of successes and the standard deviation in eight throws of a die.
11. State any two properties of sampling distribution of ' t '.
12. Define conditional probability.

**SECTION – B**

**ANSWER ANY FIVE QUESTIONS. EACH ANSWER NOT TO EXCEED 400 WORDS**  
**(5x8=40)**

13. A random sample of size 25 from a population gives the sample standard deviation to be 8.5. Test the hypothesis that the population standard deviation is 10.
14. Discuss the applications of Standard Error.
15. From the following data calculate the co-efficient of correlation by Karl Pearson's method

X	6	2	10	4	8
Y	9	11	5	8	7

16. If 3% of the electric bulbs manufactured by a company are defective, find the probability that in a sample of 100 bulbs exactly five bulbs are defective ( $e^{-3} = .0498$ )
17. The average number of articles produced by two machines per day are 200 and 250 with S.D 20 and 25 respectively on the basis of records of 25 days production. Can you regard both the machines equally efficient at 1% level of significance?
18. A sample of 400 male students is found to have a mean height of 171.38 cms. Can it be reasonably regarded as a sample from a large population with mean height 171.17 cms and standard deviation 3.30cms?
19. Explain the characteristic of normal distribution.
20. Briefly explain the utility of time series analysis.

### SECTION – C

**ANSWER ANY TWO QUESTIONS. EACH ANSWER NOT TO EXCEED 1000 WORDS**

**(2x20=40)**

21. Find the equation of regression lines for the following data

X	25	28	35	32	36	36	29	38	34	32
Y	43	46	49	41	36	32	31	30	33	39

22. Below are given the annual production figures (in thousand tonnes) of a fertilizer factory:

YEAR	2011	2012	2013	2014	2015	2016	2017
Production (in tonnes)	70	75	90	91	95	98	100

- (i) Fit a straight line by the “least squares” method and tabulate the trend values.
23. A bag contains 5 white, 6 black, and 6 yellow balls. Three balls are drawn at random. find the chance that of the drawn balls
- All are black
  - Exactly 2 yellow
  - One of each colour
  - No white

24. There are 3 main brands of a certain powder A set of 120 sample values is examined and found to be allocated among 4 groups (A,B,C & D) and three brands (I,II,III) are shown here under

BRANDS	GROUPS			
	A	B	C	D
I	0	4	8	15
II	5	8	13	6
III	18	19	11	13

Is there any significance difference in brands preference? Assume at 5% level one way ANOVA.

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