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Code No.: 142 S

**VASAVI COLLEGE OF ENGINEERING (Autonomous), HYDERABAD**  
M.C.A. I Year II-Semester (Supplementary) Examinations, December - 2016

Probability and Statistics

Time: 3 hours

Max. Marks: 70

Note: Answer ALL questions in Part-A and any FIVE questions from Part-B

**Part-A (10 X 2=20 Marks)**

1. What are the requisites of a good classification of data?
2. State any five important points that should be borne in mind in presenting the data in tabular form.
3. Define Conditional Probability. Give an example.
4. State the Baye's Theorem.
5. What is the Characteristic feature of Gamma Distribution?
6. Write the probability function for Uniform Distribution.
7. Distinguish between discrete and continuous distribution functions.
8. What is positively skewed distribution? Write its properties.
9. What are the Regression Coefficients in Regression Analysis?
10. Write the relation between t and F tests.

**Part-B (5 X 10=50 Marks)**

11. a) The following data show the number of child births to 100 families in a hospital in a year. Draw a suitable diagram. [5]

No. of Children	1	2	3	4	5	6	7	8
No. of Families	2	18	15	10	13	22	9	11

- b) Distinguish between the Diagrammatic and Graphical representation of data. [5]
12. a) Write the characteristics of Poisson Distribution. [3]
- b) Which probability distribution is appropriate to describe the situation where 100 misprints are distributed randomly throughout the 100 pages of a book? Find the probability that the page selected at random will contain at least 3 misprints. [7]
13. a) State the properties of a Normal Distribution. [4]
- b) Let X be a continuous random variable and follow Normal Distribution with mean 12 and s.d 2. What is the probability that the value of X selected at random lies in the interval [11, 14]. [6]
14. a) Explain the meaning of Moments, Show how moments are used to describe the characteristics of a distribution. [6]
- b) Obtain the expression for Skewness and Kurtosis in terms of Central Moments. [4]

Cont.1...2

EXTRA

15. a) Obtain the rank correlation to the following data. [5]

X	70	65	71	62	58	69	78	64
Y	91	76	65	83	90	64	55	48

b) Write the properties of Regression coefficients in the lines of Regression of X on Y and Y on X. [5]

16. a) Draw a less than Ogive for the following data. [6]

IQ	60-70	70-80	80-90	90-100	100-110	110-120	120-130
No. of Students	2	5	12	31	39	10	4

b) State and prove addition theorem of probability for n events. [4]

17. Answer any two of the following:

a) Find mean and variance of Rectangular Distribution. [5]

b) Calculate Karl Pearson's coefficient of Skewness from the data given below: [5]

C-I	Frequency
0-10	10
10-20	15
20-30	25
30-40	25
40-50	10
50-60	10
60-70	5

c) Test the significance of equality of variances. [5]

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