## PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)
## BSc DEGREE EXAMINATION DECEMBER 2018
(First Semester)

Branch- **STATISTICS**

### DESCRIPTIVE STATISTICS

Time : Three Hours                                   Maximum : 75 Marks
### SECTION-A (20 Marks)
Answer **ALL** questions
**ALL** questions carry **EQUAL** marks          (10 x 2 = 20)

1    Write any uses of diagrammatic representation.
2    Write any sources of Secondary data.
3    Write any two uses of Arithmetic mean.
4    Write the formula of Quartile deviation.
5    Define Correlation.
6    Give the formula of Spear man's rank correlation coefficient.
     A bag contains 8 white balls and 4 red balls. Two balls are drawn at random.
     What is the probability that 2 of them are red?
8    State multiplication theorem of probability.
9    Define continuous random variables.
10   Define Expectation.
### SECTION - B (25 Marks)
Answer **ALL** Questions
**ALL** Questions Carry **EQUAL** Marks ( 5 x 5 =  25)

11  a Explain the procedure of simple random sampling.
                              OR
    b Explain any two method of collecting primary data.

12 a      Give the properties of Good average.
                              OR
     Find out Mean devialtion and its coeflIcient for the following data:

| j Class | 0-3 | 3-6 | 6-9 | 9-12 | 12-15 | 15-18 i 18-21 |
|---|---|---|---|---|---|---|
| Frequency | .2 | 7........ | | 12 | 9 | 6 I 4~ |

13  a Explain the different types of correlation.
                              OR
    b Calculate Karl Pearson coefficient of correlation from the following data.

| X | 2 | 4 | 6 | 8 | 10 | 12 | 14 |
|---|---|---|---|---|---|---|---|
| Y | 4 | 2 | 5 | LJ0_ | 4. | 11 | 12 |

14  a State and prove addition theorem of probability.
                              OR
    b A box contains 6 red, 4 white and 5 black balls. A person draws 4 balls
      from the box at random. Find the probability that among the balls drawn
      there is atleast one ball of each colour.

15  a Define distribution function. Give its properties.
                              OR
    b State and prove Multiplication theorem of Exception.

### SECTION - C (30 Marks)
Answer any **THREE** Questions
**ALL** Questions Carry **EQUAL** Marks ( 3 x 1 0  = 30)

16    Discuss the different types of Classification.

17    Calculate the Mean, Median and Mode for the following data.

| Daily earnings (Rs.) | No of persons | Daily earnings (Rs.) | No of persons |
|---|---|---|---|
| 50-53 | 3 | 65-68 | 28 |
| 53-56 | 8 | 68-71 | 16 |
| 56-59 | 14 | 71-74 | 10 |
| 59-62 | 30 | 74-77 | 5 |
| 62-65 | 36 | | |

18    Obtain the equation of two lines of regression for the following data. Also obtain the estimate of X for Y=70.

| | 66 | 66 | 67 | 67 | 68 | 69 | 70 | 72 |
|---|---|---|---|---|---|---|---|---|
| Y | 67 | 68 | 65 | 68 | 72 | 72 | 69 | 71 |

19    State and prove Baye's theorem of probability.

**20**    Find the mean, variance and coefficients $p_1$ and $p_2$ of the distribution $f(x)=kx^2e'^x$, $0<x<oo$.

**Z-Z-Z**                    END