# B.Com(A&F) DEGREE EXAMINATION,APRIL 2020
## I Year I Semester
## Business Statistics

**Time : 3 Hours** **Max.marks :75**

**Section A** $(10 \times 2 = 20)$ Marks

Answer any **TEN** questions

1. State the types of mean.
2. Find the median of the set of observations

   27,36,28,18,35,26,20,35,40,26.
3. Draw a blank table showing exports and imports during the year 1960, 1961,1962,1963 & 1964 relating to port Bombay, Calcutta, Chennai and other ports. The table should provide for the values and the balance of trade and the total of each year.
4. What is correlation?
5. If bxy $= 3/5$ and byx$=3/4$ find co-efficient of correlation
6. Find Range and coefficient of range from the set of observations.

   13,25,36,22,18,45,21,26,30,22.
7. State the components of time series.
8. The sales of a commodity in tonne, varied from January 1976 December 1979 as follows.

   | | | | | | |
   |---|---|---|---|---|---|
   | 280 | 300 | 280 | 280 | 270 | 240 |
   | 230 | 230 | 220 | 200 | 210 | 200 |

   Fit a trend line by the method of semi average.
9. What do you mean by mutually exclusive event?
10. Four coins are tossed. Find the probability of getting 2 heads and 2 tails.
11. What do you mean by large sample?
12. State the formula for 'F' test.

**Section B** $(5 \times 5 = 25)$ Marks

Answer any **FIVE** questions

13. State the difference between correlation and regression.

14. Find the median of the following distribution.

| X | 5 | 10 | 15 | 20 | 25 | 30 |
|---|---|---|---|---|---|---|
| Y | 7 | 12 | 37 | 25 | 22 | 11 |

15. Find the standard deviation of the set of number.

| 9 | 8 | 6 | 10 | 12 | 9 | 11 | 10 | 12 | 7 |
|---|---|---|---|---|---|---|---|---|---|

16. A bag contains 4 white and 6 black balls. Two balls are drawn at random. What is the probability that (a) both are white (b) both are black (c) one white and on black

17. A sample of 200 persons with a particular disease was selected. Out of these, 100 were given a drug and the others were not given any drug. The results are as follows.

| | No.of persons | No.of persons | |
|---|---|---|---|
| | Drug | No Drug | Total |
| Cured | 65 | 55 | 120 |
| Not cured | 35 | 45 | 80 |
| Total | 100 | 100 | 200 |

Test whether the drug is effective or not. ($\chi^2$ 0.005 = 3.84)

18. Explain the different types of sampling.

19. A random sample of 200 tins of coconut oil gave an average weight of 4.95 kgs with a standard deviation of 0.21 kg. Do we accept the hypothesis of net weights 5 kgs per tin at 1% level. (table value=2.58)

## **Section C** $(2 \times 15 = 30)$ Marks

Answer any **TWO** questions

20. Find mean, median and mode for the following data and verify the empirical relations.

| Class | 1-10 | 11-20 | 21-30 | 31-40 | 41-50 | 51-60 | 61-70 | 71-80 |
|---|---|---|---|---|---|---|---|---|
| Frequency | 3 | 7 | 13 | 17 | 12 | 10 | 8 | 8 |

| 81-90 | 91-100 |
|---|---|
| 6 | 6 |

21. Calculate the Karl Pearson coefficient of correlation for the following data.

| X | 28 | 32 | 38 | 42 | 46 | 52 | 54 | 57 | 58 | 63 |
|---|---|---|---|---|---|---|---|---|---|---|
| Y | 0 | 1 | 3 | 4 | 2 | 5 | 4 | 6 | 7 | 8 |

22. Fit a straight line trend by the method of least square and estimate the export for 2009.

| Year | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
|---|---|---|---|---|---|---|
| Sales(intones) | 12 | 13 | 14 | 15 | 22 | 26 |

23. Two random samples drawn from normal population are

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample I | 20 | 16 | 26 | 27 | 23 | 22 | 18 | 24 | 25 | 19 | - | - |
| Sample II | 27 | 33 | 42 | 35 | 32 | 34 | 38 | 28 | 41 | 43 | 30 | 37 |

Obtain estimate of the variance of the population and test whether two populations have the same variance.

(F at 5% = 2.89)