

**BACHELOR OF BUSINESS ADMINISTRATION  
SECOND SEMESTER  
QUANTITATIVE TECHNIQUES  
BBA-204**

Duration : 3 hrs.

Full Marks: 70

**[ PART-A: Objective ]**

Time : 20 min.

Marks : 20

*Choose the correct answer from the following:*

1X20=20

1. In \_\_\_\_\_, data are classified according to the attributes.
  - a. Geographical classification
  - b. Chronological classification
  - c. Quantitative classification
  - d. Qualitative classification
2. Which of the following quantitative technique used in LPP ?
  - a. Programming QT
  - b. Statistical QT
  - c. Mathematical QT
  - d. None of the above
3. \_\_\_\_\_ is effected by the extreme values.
  - a. Mean
  - b. Median
  - c. Mode
  - d. None of the above
4. The measures which ignore the extreme values are:
  - a. Mean, median
  - b. Median, mode
  - c. Mean, mode
  - d. None of the above
5. The measures \_\_\_\_\_ can be determined graphically.
  - a. Mean, median
  - b. Mean, mode
  - c. Median, mode
  - d. None of the above
6. Which of the following is the best relative measure of dispersion?
  - a. Mean
  - b. Standard deviation
  - c. Variance
  - d. Coefficient of variation
7. The value of the standard deviation is always:
  - a.  $< 0$
  - b.  $> 0$
  - c.  $\geq 0$
  - d.  $\leq 0$
8. If an unbiased coin is tossed three times, the number of possible outcomes is:
  - a. 12
  - b. 36
  - c. 64
  - d. 8
9. If the events A and B are exhaustive, then
  - a.  $P(A \cap B) = 0$
  - b.  $P(A \cup B) = 1$
  - c.  $P(A \cap B) = 1$
  - d.  $P(A \cap B) = 0$
10. If  $P(A^c) = 0.2$ , then  $P(A) = ?$ 
  - a. 0.2
  - b. 0.8

- c. 0.5
- d. None of the above
11. Which of the following statement is true for Operations Research (OR)?
- a. A process of solving the problems.      b. A disciplinary team of research
- c. An interdisciplinary team of research      d. None of the above
12. The non-negativity restriction in LPP assumes that
- a. The coefficients in LPP are non-negative      b. The number of variables in LPP is positive.
- c. The values of the decision variables cannot be negative.      d. None of the above
13. If each unit of a sample has an equal probability selection included in the population, is called
- a. simple random sampling      b. stratified random sampling
- c. systematic sampling      d. convenient sampling
14. The sales of ice cream / cold drinks in summer, is an example of
- a. Random variation      b. Cyclic variation
- c. Seasonal variation      d. None of the above
15. The correlation between height and intelligence of a group of people, is an example of
- a. Positive correlation      b. Zero correlation
- c. Negative correlation      d. None of the above
16. The method of selection of sample by probability, is :
- a. non-random sampling      b. random sampling
- c. Mixed sampling      d. None of the above
17. Which of the following variable(s) is (are) used, when the constraints of an LPP are in the form  $\geq$
- a. Surplus variables      b. Slack variables
- c. Artificial variables      d. a and c
18. The solution of LPP, which satisfies the linear restrictions as well as non-negativity restriction, is called
- a. feasible solution      b. basic solution
- c. both a and b      d. Neither a nor b
19. A sample characteristic is called \_\_\_\_\_
- a. parameter      b. statistic
- c. sample      d. None of the above
20. If the mean of the variable X is 0, then the mean of  $2X + 3$  is:
- a. 0      b. 2
- c. 3      d. 5



**( PART-B : Descriptive )**

Time: 2 HRS 40 MINS

Marks : 50

[ Answer question no.(1) & any four (4) from the rest ]

1. Write in brief the applications of Quantitative Techniques in managerial decision making process. 10
  
2. Calculate mean, median, mode and the coefficient of variation of wages of labourers an enterprise from the following distribution. 2+2+2+4=10  
Wages (in Rs): 15 - 25    25 - 35    35 - 45    45 - 55    55- 65    65 - 75  
No. of labourers: 5            12            19            15            6            3
  
3.     (a) Explain the classical definition of probability 5+5=10  
       (b) Two coins are tossed. What is the probability of getting one head?
  
4. What is time series? Explain the different components of time series 2+8=10
  
5. Define LPP. Write the role of Linear Programming Techniques in decision making. 5+5=10
  
6. Solve the following LPP by graphical method 10  
  
Solve the following LPP  
Maximize  $Z = 20x_1 + 30x_2$   
Subject to  
 $3x_1 + 3x_2 \leq 36$   
 $5x_1 + 3x_2 \leq 50$   
 $2x_1 + 6x_2 \leq 60$   
 $x_1 \geq 0, x_2 \geq 0$
  
7. Define the terms Population, Sample, Sampling, Parameter, Statistic and 2×5=10
  
8. (a) Define Positive, Negative and Zero correlation. 3×2=6  
   (b) Distinguish between Correlation and Regression. 4

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