2023/08

BACHELOR OF BUSINESS ADMINISTRATION
SECOND SEMESTER [SPECIAL REPEAT]
QUANTITATIVE TECHNIQUES
BBA – 204

SET A

[USE OMR SHEET FOR OBJECTIVE PART]

Duration: 3 hrs. **Full Marks: 70**

Objective

Time: 30 mins. **Marks: 20**

Choose the correct answer from the following: ***1×20=20***

1. 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

2. 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

3. 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

4. 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

5. 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

6. The method of selection of sample by probability, is :
   a. non-random sampling b. random sampling
   c. Mixed sampling d. None of the above

7. Which of the following variable(s) is (are) used, when the constraints of an LPP are in the form ≥?
   a. Surplus variables b. Slack variables
   c. Artificial variables d. a and c

8. 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

A sample characteristic is called_____

a. Parameter
b. Statistic
c. Sample
d. None of the above

. If the mean of the variable X is 0, then the mean of 2X + 3 is:

a. 0
b. 2
c. 3
d. 5

. In _____, data are classified according to the attributes.

a. Geographical classification
b. Chronological classification
c. Quantitative classification
d. Qualitative classification

. Which of the following quantitative technique used in LPP?

a. Programming QT
b. Statistical QT
c. Mathematical QT
d. None of the above

. _____ is effected by the extreme values.

a. Mean
b. Median
c. Mode
d. None of the above

. The measures which ignore the extreme values are:

a. Mean, median
b. Median, mode
c. Mean, mode
d. None of the above

. The measures _____ can be determined graphically.

a. Mean, median
b. Mean, mode
c. Median, mode
d. None of the above

. Which of the following is the best relative measure of dispersion?

a. Mean
b. Standard deviation
c. Variance
d. Coefficient of variation

. The value of the standard deviation is always:

a. < 0
b. > 0
c. ≥ 0
d. ≤ 0

. If an unbiased coin is tossed three times, the number of possible outcomes is:

a. 12
b. 36
c. 64
d. 8

. 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. $P(A \cap B) = 0$

. If $P(A^c) = 0.2$, then $P(A) = ?$

a. 0.2
b. 0.8
c. 0.5
d. None of the above

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Descriptive

Time : 2 Hr. 30 Mins. Marks : 50

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

1. 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

2. What is time series? Explain the different components of time series 2+8=10

3. Solve the following LPP by graphical method 10

Solve the following LPP

Maximize $Z = 20x_1 + 30x_2$

Subject to

$3x_1 + 3x_2 \leq 36$

$5x_1 + 3x_2 \leq 50$

$2x_1 + 6x_2 \leq 60$

$x_1 \geq 0, x_2 \geq 0$

4. a) Define Positive, Negative and Zero correlation. 6+4=10
   b) Distinguish between Correlation and Regression.

5. Write in brief the applications of Quantitative Techniques in managerial decision making process. 10

6. a) Explain the classical definition of probability. 5+5=10
   b) Two coins are tossed. What is the probability of getting one head?

7. Define LPP. Write the role of Linear Programming Techniques in decision making. 5+5=10

8. Define the terms Population, Sample, Sampling, Parameter, Statistic and 2×5=10

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