BACHELOR OF BUSINESS ADMINISTRATION
Second Semester
Quantitative Techniques
(BBA- 10)

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

PART A (OBJECTIVE)=20
PART B (DESCRIPTIVE)=50

PART-B (Descriptive)

Duration: 2 hrs. 40 mins. **Marks: 50**

I. Answer the following questions (any five): **2 × 5=10**

a) What do you mean by primary data?
b) Distinguish between Cumulative frequency and Relative frequency.
c) Define Arithmetic mean for ungrouped and grouped frequency.
d) Find the value of $\lim_{x\to 3} \frac{\sqrt{x}-\sqrt{3}}{x-3}$
e) What do you mean by range? Write one application of it.
f) Define mutually exclusive events .Give example.

II. Answer the following questions (any five): **3×5=15**

a) Distinguish between Histogram and Historigam.
b) Following are the daily wages of 40 workers.

10	26	24	16	26	23	28	23	35	18	10	11	20	21	19	18	15	13	22	45
15	29	29	12	34	15	14	18	22	24	30	38	17	32	36	20	19	27	33	34

i. Form a frequency distribution table taking 5 as the class interval.
ii. Find the percentage of workers getting wage below Rs.35.

P.T.O

c) Find the value of $\frac{d}{dx}\sqrt[3]{(1-x^3)}$.

d) Find the value of the integrals

$\int(\frac{1}{x^3}-\frac{1}{x^2}+\frac{1}{x}+\frac{1}{2\sqrt{x}})\,dx$

e) Let two die be thrown simultaneously. Find the probability of getting a sum of 9 or at least one 6.

f) Discuss briefly the scope of operation research.

III. Answer the following questions (any five): **5×5=25**

a) Calculate Mean, Median and Mode from the following frequency distribution.

Marks	0-20	20-40	40-60	60-80	80-100
Frequency	5	15	30	12	8

b) Draw a frequency polygon from the following frequency distribution.

Class	5-10	10-15	15-20	20-25	25-30	30-35	35-40
Frequency	10	15	25	40	35	20	5

c) For a group containing 100 observations, the arithmetic mean and standard deviation are 8 and $\sqrt{10.5}$ respectively. For 50 observations selected from these 100 observations, the mean and standard deviation are 10 and 2 respectively. Calculate mean and standard deviation for the other half.

d) Find the value of the following

i. $\frac{d}{dx}\frac{1}{(2x-3)^5}$ ii. $\int(1-\frac{1}{3}x^2-\frac{1}{2\sqrt{x}})\,dx$

e) Write mathematical definition of probability.
A die is thrown. Find the probability of getting an even number greater than 4.

f) A furniture dealer deals only in two items, tables and chair. He has Rs. 5000 to invest and a space to store at most 60 pieces. A table costs him Rs. 250 and a chair Rs 50. He can sell a table at a profit of Rs.50 and a chair at a profit of Rs. 15. How should he invest his money in order that he may maximize his profit? Formulate LPP and solve by Graphical method.

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BACHELOR OF BUSINESS ADMINISTRATION

Second Semester

Quantitative Techniques

(BBA-10)

Duration: 20 minutes **Marks – 20**

PART A- (Objective)

Time: 20 mins **Total Marks: 20**

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

1. Data which are collected for the first time by the investigator himself are known as_____.

a. Secondary data
b. Primary data
c. Census
d. None of these

2. A questionnaire is filled up by the _____.

a. Investigator
b. Respondent
c. Enumerator
d. None of these

3. The difference between the upper limit and the lower limit of a class is known as _____.

a. Class limits
b. Class boundaries
c. Width of a class
d. None of these

4. Using ogive we can determine a particular measure of central tendency, namely_____.

a. Mean
b. Median
c. Mode
d. All of these

5. Mode is the value that has the greatest_____.

a. Frequency
b. Cumulative frequency
c. Percentile
d. None of these

6. Geometric Mean is the _____ root of the product of n observations.

a. 2^{nd} b. 3^{rd}

c. nth d. none of these

7. If $U=\frac{x-a}{h}$ then $\bar{x}$ = ?

a. $\bar{u}$ b. a+ h $\bar{u}$

c. h $\bar{u}$ d. None of these

8. The standard deviation is affected by the change of _____

a. Origin b. Scale

c. Both origin and scale d. None of these

9. Quartiles are measures of _____

a. Location b. Position

c. Both a) & b) d. None of these

10. In drawing histograms the class intervals should be _____

a. Continuous b. Discrete

c. Both a) 1& b) d. None of these

11. $\frac{d}{dx} x^0 = ?$

a. 0 b. 1

c. 2 d. 3

12. $\int \frac{1}{x} dx = ?$

a. x^{-1} b. log x

c. 0 d. None of these

13. There are ____ % observations on the LHS of the third quartile of a frequency curve

a. 25 b. 50

c.75 d. None of these

14. .If A and B are mutually exclusive events then P(AUB) = ?

a) P(A) + P(B) b) P(A) - P(B)

c) P(A) + P(B) – P(AB) d) None of these

15. If A & B are two events associated to a random experiment such that AC B then

a) P(A)≤ $P(B)$ *b*) $P(A) \geq P(B)$ *c*) $P(A) = P(B)$ d) None of these

16. A bag contains 2 red, 2white and 2 black balls. What is the probability of drawing 2blue balls?

a) 1/6 b) 1

c) 0 d) None of these

17.$\lim_{x\to 0} \frac{e^x - 1}{x}$ =?

a. 0 b. 1

c. 2 d. None of these

18. Operations research approach is _____.

a. Multi -disciplinary b. Scientific

c. Intitutive d. All of the above

19. The distinguishing feature of an LP model is the relationship among all variables is_____.

a. Non linear b. Linear

c. Additive d. None of these

20. Constraints in an LP Model represent:

a. Limitations b. Requirements

c. Balancing limitations and requirements d. All of the above

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