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(FOR THE CANDIDATES ADMITTED

SUB CODE

DURING THE ACADEMIC YEAR 2023 ONLY)

REG.NO. :

N.G.M.COLLEGE (AUTONOMOUS) : POLLACHI

END-OF-SEMESTER EXAMINATIONS : MAY 2024

B.COM P.A

MAXIMUM MARKS: 75

SEMESTER: II

TIME : 3 HOURS

**PART-III**

**BUSINESS MATHS AND STATISTICS**

**SECTION – A**

**10X1=10 MARKS**

ANSWER THE FOLLOWING QUESTIONS.

**MULTIPLE CHOICE QUESTIONS.(K1)**

1.A set with no elements is called \_\_\_\_\_

(a) finite set (b) infinite set (c) empty set (d) set theory

2. Periodic fixed sum paid under certain stated conditions is called. \_\_\_\_\_

(a) Annuity (b) Perpetuity (c) Differed Perpetuity (d) Periodic

3. Arithmetic mean is a \_\_\_\_\_

(a) Location average (b) Mathematical average (c) Positional average (d) Commercial average

4. Why is the sample survey popular? \_\_\_\_\_

(a) It is cheap (b) It requires less time

(c) It is possible even if the universe is infinite (d) All of these

5. Index numbers are \_\_\_\_\_

(a) average (b) specialized average (c) normal averages (d) none of these

**ANSWER THE FOLLOWING IN ONE (OR) TWO SENTENCES (K2)**

6. Explain the concepts of set.

7. What is the meaning of simple interest.

8. Define Average

9. What is sample?

10. What is Index Number?

**SECION – B**

**(5X5=25 MARKS)**

**ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS. (K3)**

11. (a) If A,B,C are any three sets, then using Ven diagram prove that

$(A \cap B) \cap C = A \cap (B \cap C)$  **(OR)**

(b) If  $A = \{1,2,3,4\}$ ,  $B = \{3,4,5,6\}$ ,  $C = \{1,5,6,7,8\}$

Verify that  $A \cup (B \cap C) = (A \cup B) \cap (A \cup C)$

12. (a) A sum lent on simple interest become Rs. 2520 in 2 years and Rs. 2700 in 5 years. Find the sum and the rate of interest per annum. **(OR)**

(b) Find the compound Interest for Rs.7,500 for  $3\frac{1}{2}$  years at  $5\frac{1}{2}$  per annum.

13. (a) Calculate Geometric mean

50	72	54	82	91
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**(OR)**

(b) Calculate the Quartile deviation .

Find out the value of quartile deviation method from the following data:

Roll No	1	2	3	4	5	6	7
Marks	20	28	40	30	50	60	52

14. (a) What are the elements in the process of sampling? **(OR)**

(b) Give the merits and limitations of survey method.

15(a) Calculate the Laspeyre's Index:

Types	Price		Quantity	
	2021	2022	2021	2022
A	9	15	5	5
B	4	12	10	11
C	1	5	6	6

**(OR)**

(b) From the following data compute Fisher Ideal Index number

Commodity	2002		2004	
	Price	Quantity	Price	Quantity
A	14	32	12	52
B	24	37	11	33
C	17	21	8	44
D	12	27	10	37

**SECTION – C**

**(5X8=40 MARKS)**

**ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS. (K4 /K5)**

16. (a) Ven diagram Distributive Law: i)  $A \cup (B \cap C) = (A \cup B) \cap (A \cup C)$

ii)  $A \cap (B \cup C) = (A \cap B) \cup (A \cap C)$  **(OR)**

(b)  $A = \{a,b,c\}$ ,  $B = \{b,c,d\}$ ,  $C = \{d,e,f,g\}$  then find

- i)  $A - B$  ii)  $B - C$  iii)  $C - B$  iv)  $A - C$  v)  $A - B$  vi)  $A - (B - C)$

17. (a) Find out the principal if the difference between S.I and C.I is Rs.122 at 5% p.a in 3 years **(OR)**

(b) The difference between compound interest and simple interest is Rs.384.60. Number of years 4. Rate of interest 10%. Find out the sum.

18. (a) **Calculate the Mean, Median and Mode :**

Marks	11-20	21-30	31-40	41-50	51-60	61-70	71-80
No. of Students	42	38	120	84	48	36	31

(OR)

(b). From the following table, compute the quartile deviation as well as its co-efficient

Size	4-8	8-12	12-16	16-20	20-24	24-28	28-32	32-36	36-40
Frequency	6	10	18	30	15	12	10	6	2

19. (a) Describe briefly various types of Random sampling methods.

(OR)

(b) Distinguish between census and sampling methods. Explain it is

20. (a) Calculate Laspeyre's, Fishers and Paasche's Index number for the following data:

Commodity	Base year		Current year	
	Price	Quantity	Price	Quantity
A	12	10	20	12
B	4	20	5	22
C	8	12	12	14
D	20	6	24	5
E	5	4	8	4

(OR)

(b) Calculate the index number of crime for 2014 with 2012 as base:

	2012	2014	Weights
Shirts	13	8	6
Vegetables	15	22	5
Meals	249	185	4
Travels	328	259	1
Extra expenses	497	448	2