

SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN
(AUTONOMOUS)

(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)
Chromepet, Chennai - 600 044.

B.Com. PA - END SEMESTER EXAMINATIONS - NOV'2024

SEMESTER - I

24UPAAT1001 - Quantitative Aptitude for Professional Accounting

Total Duration : 2 Hrs.30 Mins.

Total Marks : 60

Section B

Answer any **SIX** questions ($6 \times 5 = 30$ Marks)

1. a) A boy has five rupee coins, two rupee coins and one rupee coins in the ratio 3:4:5. If he has an amount of Rs 224, then find the numbers of one rupee coins with the boy.
b) If $x^{1/p} = y^{1/q} = z^{1/r}$ and $xyz = 1$, then the value of $p + q + r$ is
c) If $2^x - 2^x - 1 = 4$, then the value of x^x is.
2. a) A firm manufactures two types of electrical items A and B. Both A and B make use of two essential components, a motor and a transformer. Each unit of A requires 3 motors and 2 transformers, and each unit of B requires 2 motors and 4 transformers. The total supply of components per month is restricted to 210 motors and 300 transformers. Type B is an export model requiring a voltage stabilizer, restricted to 65 units per month Give a mathematical formulation of this linear problem.
b) If $\log_2 x + \log_4 x + \log_{16} x = 21/4$, these x is equal to
c) An employer recruits experienced (x) and fresh workmen (y) under the condition that he cannot employ more than 11 people, x and y can be related by the inequality:
3. a) An aeroplane flies from A to B at the rate of 500 km/hour and comes back from B to A at the rate of 700 km/hour. The average speed of the aeroplane is
b) If the Mean and Mode of a certain set of numbers be 60.4 and 50.2 respectively, find approximately the value of the Median.
c) Find the Quartile Deviation of the following data: 10,12,14,17,19,21,27,28,30,32,34
4. a) Find x if cost of living index is 150

Group	A	B	C	D	E
Index	200	150	140	100	120
Weights	6	4	x	3	4

 b) A sample of 35 observations has the mean 80 and S.D. as 4. A second sample of 65 observations from the same population has mean 70 and S.D. 3. The SD of the combined sample is ____?

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c) What is the coefficient of variation of the following numbers?

53, 52, 61, 60, 64.

5. Explain methods of Collecting Primary Data.

6. a) In a code language APPLE is written as PQQRS, RIS is written as ABC and MANGO is written as TPXYZ. How will ROSE written in that language?

b) In a certain code language 461 means 'where are you', 169 means 'you are good' and 8652 means 'flowers are not bad'. What is the code for 'not' and 'good'?

7. Define Stratified Sampling and Systematic Sampling, also state Advantages and Disadvantages in both cases.

8. In a town of 20,000 families it was found that 40% families buy newspaper A, 20% families buy newspaper B, 10% families buy newspaper C, 5% families buy A and B, 3% buy B and C and 4% buy A and C. If 2% families buy all the three newspaper, then the number of families which buy A only is

b) $\lim_{x \rightarrow 3} \frac{x^2 + 2x + 3}{x^2 - 2x - 3}$ as $x \rightarrow 3$

c) Let R is the set of real numbers, such that the function $f: R \rightarrow R$ and $g: R \rightarrow R$ are defined by $f(x) = x^2 + 3x + 1$ and $g(x) = 2x - 3$. Find $(f \circ g)$:

Section C

Answer any **THREE** questions ($3 \times 10 = 30$ Marks)

9. a) Elaborate on Basic Principles of Sample Survey

b) Out of 1000 persons, 25 percent were industrial workers and the rest were agricultural workers. 300 persons enjoyed world cup matches on TV. 30 per cent of the people who had not watched world cup matches were industrial workers. What is the number of agricultural workers who had enjoyed world cup matches on TV?

10. a) Find 3rd decile for numbers 15,10,20,25,18,11,9,12

b) Find mean deviation of weights about median.

Weight (lb)	131-140	141-150	151-160	161-170	171-180	181-190
No of persons	3	8	13	15	6	5

11. a) The sum of all natural numbers between 500 and 1000 which are divisible by 13 is ____?

b) Find four geometric means between 4 and 972

c) The sum of n terms of an AP is $3n^2 + 5n$. The series is ____?

d) The common ratio , the last term , and the sum of G.P. is 3, 486 and 728. Find first term .

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SEMESTER - I

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12. a) Raghu is at point A. He walks 3 km to the north and then turns to his left. He walks 4 km in this direction. He turns left again and walks 6 km. If he wishes to reach point A again, in which direction should he be walking and what distance will he have to cover?
- b) Shreya started from Point P and walked 2m West. She then took a right turn and walked 3m before taking a left turn and walking 5m. She finally took a left turn, walked 3m and stopped at Point Q. How far is Point Q from Point P?
- c) If in a certain code language GO is written as FHNP, then how will SUN be written in that language.
13. a) Aman started a business investing Rs. 70,000. Rakhi joined him after six months with an amount of Rs. 1,05,000 and Sagar joined them with Rs.1.4 lakhs after another six months. The amount of profit earned should be distributed in what ratio among Aman, Rakhi and Sagar respectively, 3 years after Aman started the business?
- b) If one root of the equation $x^2 - 8x + m = 0$ exceeds the other by 4 then the value of m is
- c) The quadratic equation $x^2 - 2kx + 16 = 0$ will have equal roots when the value of 'k' is:
