

STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI – 600 086.  
(For candidates admitted during the academic year 2004-2005 & thereafter)

SUBJECT CODE : CM/AC/MS33

**B.Com. DEGREE EXAMINATION NOVEMBER 2008**  
COMMERCE  
THIRD SEMESTER

COURSE : **ALLIED – CORE**  
PAPER : **BUSINESS MATHEMATICS AND STATISTICS**  
TIME : **3 HOURS** **MAX. MARKS : 100**

**SECTION – A**

ANSWER ALL QUESTIONS: ( 10 x 3 = 30 )

1. Define Statistics.
2. Explain the term classification of statistical data. What are the types of classification.
3. Draw a pie diagram from the following data:

Expenditure	Food	Clothing	Housing	Fuel	Miscellaneous
% of amount spent	22	16	29	17	16

4. Present the following data in the form of a table: In 2005 out of 2,000 workers in a factory, 1,550 were members of a trade union. The number of women workers employed were 250 out of which 200 did not belong to any trade union. In 2006 the number of union workers was 1,725 of which 1,600 were men. The number of non union workers was 380 among whom 155 were women.
5. Calculate median from the following data:  
280, 180, 96, 104, 75, 80, 94, 100, 75, 600, 200
6. Compute price index for the following data by applying weighted average of price relative using arithmetic mean method.

Item	Price in 2001	Price in 2002	Quantity in 2001
Wheat	2	2.5	40
Sugar	3	3.25	20
Milk	1.5	1.75	10

7. A sum of money amounts to Rs.20,800 in 5 years and Rs.22,720 in 7 years. Find the principal and the rate of interest.
8. Two numbers are in the ratio 3:4. If 6 be added to each term of the ratio then the new ratio will be 4:5. Find the numbers.

9. The rate of monthly salary of a person increases annually in AP. It is known that he was drawing Rs.200 a month during the 11<sup>th</sup> year of service and Rs.380 during the 29<sup>th</sup> year. Find his starting salary and the rate of annual increments.
10. Find the total number of numbers greater than 2000 that can be formed with the digits 1,2,3,4,5 no digit being repeated in any number.

### SECTION – B

ANSWER ANY FIVE QUESTIONS:

( 5 x 8 = 40 )

11. What are the points that are to be considered while drafting a questionnaire?
12. A person borrowed Rs.500 from a money lender and agreed to pay four installments of Rs.150 each at the end of 3,6,9,12 months. Find the rate of simple interest per annum charged by the money lender.
13. i. There are 7 men and 3 ladies. Find the number of ways in which a committee of 6 persons can be formed if the committee is to have at least 2 ladies.  
ii. Five persons are to address a meeting. If a specified person A is to speak before another specified person B, find the number of ways in which this could be arranged.
14. A man repays a loan of Rs.3,250 by paying Rs.20 in the first month and then increases the payment by Rs.15 every month. How long will it take to clear the loan.
15. Calculate the Geometric mean and the Harmonic mean from the following data  
142 110 95 175 162 180 75 133
16. Calculate median graphically and verify your answer algebraically.

Wages	0-50	50-100	100-150	150-200	200-250	250-300
No. of workers	19	46	75	32	23	5

17. Construct Cost of Living Index using  
i. Weighted Arithmetic Mean  
ii. Weighted Geometric Mean

Group	Index Number	Weights
Food	352	48
Fuel	200	10
Clothing	230	8
Rent	160	12
Miscellaneous	190	15

## SECTION – C

ANSWER ANY TWO QUESTIONS:

( 2 x 15 = 30 )

18. What is called a primary data? Explain the various methods of primary data collection with suitable examples. State its merits and demerits.
19. i. A sum of 50,440 is borrowed to be paid back in three yearly equal installments. What is the annual installment if the rate of interest is 5% per annum compounded yearly?  
ii. Find the sum of N terms of the series  $5+55+555+\dots$
20. Calculate mode from the following data using grouping and analysis table.

Marks	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90
No. of students	4	2	18	22	21	19	10	3	1

21. Using the following information construct Fisher's Ideal Index number and show that it satisfies Factor Reversal Test and Time Reversal Test.

Commodity	Price per Unit		Number of Units	
	Base Year	Current Year	Base Year	Current Year
A	6	10	50	56
B	2	2	100	120
C	4	6	60	60
D	10	12	30	24
E	8	12	40	36

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