

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 2007
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. What are the various types of classification?
3. Given the principal as Rs.25,000, number of years as 8 and the rate of interest as 12% find the simple interest.
4. In a sample study, coffee habit in two towns were received.
Town A : Females were 40%: total coffee-drinkers were 45% and male non-coffee drinkers were 20%.
Town B : Males were 55%: Males non-coffee drinkers were 30% and females coffee drinkers were 15%. Present the above data in a tabular form.

5. Draw a multiple bar diagram for the following data:

Year	Sales	Gross Profit	Net Profit
	('000) units	('000 units)	('000) units
2000	100	30	15
2001	120	40	25

6. The mean marks of 100 students were found to be 30. Later on it was discovered that two items were wrongly taken as 32 and 12 instead of 23 and 11. Find the correct mean.
7. A person spends a portion of his monthly income on his household and the rest is his savings. The ratio of his expenditure and savings is 27:2 and his monthly income is Rs.725. Find his expenditure and savings per month.
8. If $\frac{3}{4}$ of an estate be worth Rs.90, what is the value of $\frac{2}{3}$ of its?
9. Find the 40th term of an AP whose 9th term is 465 and 20th term is 388.
10. The length of a rectangle is twice its breadth and its perimeter is 72 meters. Find the area of the rectangle.

SECTION – B

ANSWER ANY FIVE QUESTIONS:

(5 x 8 = 40)

11. What is a questionnaire? What are the requisites that are to be considered while drafting a questionnaire?
12. a) Mr.D started for a village at a distance of six miles. He traveled in his car at a speed of 40 miles per hour. After traveling for 4 miles the car stopped running. He then traveled in a rickshaw at a speed of 10 miles per hour. After traveling a distance of $1\frac{1}{2}$ miles he left the rickshaw and covered the remaining distance on foot at a speed of 4 miles per hour. Find the average speed per hour of Mr.D.
- b) The mean age of a combined group of men and women is 30 years. If the mean age of the group of men is 32 and that of the group of women is 27, find out the percentage of men and women in the group.
13. Represent the data by ogive curves and find the median value and verify it using algebraic method.

Marks in English	0-10	10-20	20-30	30-40	40-50
No. of students	8	20	36	15	6

14. Find the mean for the given data

Income	No. of workers
100-200	10
200-300	20
300-400	35
400-500	55
500-600	75
600-700	60
700-800	40
800-900	30
900-1000	25

15. a) Solve $X^2 + Y^2 = 29$; $X - Y = 3$;
 b) Find the number of significant numbers which can be formed out of the digits 0,5,6,7,8 but using each digit only once in each number.
16. Out of 4 officers and 10 clerks in an office, a committee consisting of 2 officers and 3 clerks are to be formed. In how many ways can this be done if
- any officer and any clerk can be included
 - one particular clerk must be on the committee
 - one particular officer cannot be on the committee.

17. Write short notes on
- Tables
 - Requisites of good average
 - Diagrams
 - Cost of living index

SECTION – C

ANSWER ANY TWO QUESTIONS:

(2 x 15 = 30)

18. Construct Fisher's ideal Index number and show how it satisfies Factor Reversal Test and Time Reversal Test.

Commodity	Base Year		Current Year	
	Price (Rs.) per unit		Number of Units	
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

19. Calculate mode from the following:

Marks	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90
Students	4	2	18	22	21	19	10	3	1

20. What do you understand by Data Collection? Explain the various methods of primary data collection with their merits and demerits.
21. a) When a boy is born Rs.5,000 is placed to his credit in an account that pays
- 6% compounded annually
 - 6% compounded monthly
- If the account is not disturbed, what amount will be there to his credit on his twentieth birthday.
- b) A rectangular lawn is surrounded by a path 1 meter wide. The area of the lawn is 20 sq. meters and the area of the path is 22 sq. meters. Find the length and breadth of the lawn.

