



# THE AMERICAN COLLEGE, MADURAI

(An Autonomous Institution Affiliated to Madurai Kamaraj University)  
Re-accredited (2<sup>nd</sup> Cycle) by NAAC with Grade “A”, CGPA – 3.46 on a 4-point scale

## Backlog Arrear Examination, March 2021

MAS 2475/2435/1555

Time: 3 hours

BUSINESS STATISTICS (CMC)

Max marks: 75

**Answer any FIVE Questions:**

**(5 × 15 = 75marks)**

1. Describe about the Nature, Scope, Importance and Limitations of Statistics.
2. Find the (i) mean (ii) median (iii) first quartile (iv) third quartile (v) 19<sup>th</sup> percentile from the following frequency distribution.

Class	Frequency	Class	Frequency
11 – 15	8	36 – 40	41
16 – 20	15	41 – 45	28
21 – 25	39	46 – 50	16
26 – 30	47	51 – 55	4
31 – 35	52	<b>Total</b>	<b>250</b>

3. Find the arithmetic mean  $\bar{x}$ , standard deviation  $\sigma$  and percentage of cases within  $\bar{x} \pm \sigma$ ,  $\bar{x} \pm 2\sigma$ ,  $\bar{x} \pm 3\sigma$  in the following frequency distribution.

Marks	10	9	8	7	6	5	4	3	2	1
Frequency	1	5	11	15	12	7	3	2	0	1

4. Three judges assign the marks to 8 entries in a beauty contest.

Judge Mr.X	1	2	4	3	7	6	5	8
Judge Mr.Y	3	2	1	5	4	7	6	8
Judge Mr.Z	1	2	3	4	5	7	8	6

Which pair of judges has the nearest approach to common taste in beauty?

5. The following data relate to the marks of 10 students in the internal test and the university examination for the maximum of 50 in each.

Internal marks	25	28	30	32	35	36	38	39	42	45
University marks	20	26	29	30	25	18	26	35	35	46

- (i) Obtain the two regression equations and determine.
- (ii) The most likely internal mark for the university mark of 25.
- (iii) The most likely university mark for the internal mark of 30.

6. A group of 10 rats fed on a diet A and another group of 8 rats fed on a different diet B recorded the following increase in weights in gms. ( $t_{0.05}(16) = 2.12$ )

Diet A	5	6	8	1	12	4	3	9	6	10
Diet B	2	3	6	8	1	10	2	8	-	-

Test whether diet A is superior to diet B.

7. Calculate (i) Laspeyre's (ii) Paasches' (iii) Fisher's index number for the following data given below.

Commodities	Base year 1990		Current year 1992	
	Price	Quantity	Price	Quantity
A	2	10	3	12
B	5	16	6.5	11
C	3.5	18	4	16
D	7	21	9	25
E	3	11	3.5	20

---