



# 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

### STATISTICS

MAS 1438 / BIT

TIME: 3 Hour

TOTAL: 75 Marks

### PART A

Answer any FIVE Questions:

5 × 15 = 75

1. Calculate the mode of the following distribution.

Marks	0 – 9	10 – 19	20 – 29	30 – 39	40 – 49	50 – 59	60 – 69	70 – 79	80 – 89	90 – 99
No of students	6	29	87	181	247	263	133	43	9	2

2. Find the (i) mean (ii) median for the following frequency distribution.

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

3. From the following data of marks obtained by 10 students in Physics and Chemistry.

Calculate the rank correlation coefficient.

Physics	35	56	50	65	44	38	44	50	15	26
Chemistry	50	35	70	25	35	58	75	60	55	35

4. (i) X can hit a target 3 times in 5 shots; Y can hit 2 times in 5 shots; Z can hit 3 times in 4 shots. What is the probability that 2 shots hit the target?

(ii) The contents of three Urns are

Urn I: 1 white 3 red 2 black balls

Urn II: 3 white 1 red 1 black balls

Urn III: 3 white 3 red 3 black balls.

Two balls are chosen from a randomly selected urn. If the balls are 1 white and 1 red ball. What is the probability that they come from Urn I or Urn II?

5. The table gives the biological values of protein from 6 cow's milk and 6 buffalo's milk. Examine whether the difference is significant.

Cow's milk	1.8	2	1.9	1.6	1.8	1.5
Buffalo's milk	2	1.8	1.8	2	2.1	1.9

6. A tea company appoints 4 salesmen A, B, C, D and observes their sales in 3 seasons – summer, monsoon and winter. The figures of their sales in lakhs of rupees are given below:

Carry out the analysis for salesmen and seasons.

Salesman/ Season	A	B	C	D
Summer	36	36	21	35
Monsoon	26	28	29	29
Winter	28	29	31	32

7. Analyse the variance in the following Latin square:

B20	C17	D25	A34
A23	D21	C15	B24
D24	A26	B21	C19
C26	B23	A27	D22

\*\*\*\*\*