

CARMEL COLLEGE OF ARTS, SCIENCE AND COMMERCE, NUVEM-GOA
POST GRADUATE DEGREE STUDIES (AFFILIATED TO GOA UNIVERSITY)
M.A PSYCHOLOGY (SEMESTER I) EXAMINATION, JANUARY 2021
PLC 104: ADVANCED STATISTICS FOR PSYCHOLOGY

Date: 15/01/2021

Total Marks: 30

Instructions: 1) All questions are compulsory.

2) Figures to the right indicate marks.

Q.NO.I) Write an essay on any one of the following: (10mrks)

A) What is a hypothesis? Explain the process and importance of hypothesis testing.

B) Describe in detail the process of Factor Analysis with the help of a psychological test.

Q.NO.II) Solve any one of the following: (10mrks)

A) A group of students, with and without training, obtained the following scores on a performance test. Compute the biserial correlation coefficient for the following data. (Value of $y = 0.3477$)

Performance test scores	Trained	Untrained
20-29	5	4
30-39	9	7
40-49	18	14
50-59	40	30
60-69	58	17
70-79	31	5
80-89	19	3
90-99	6	0

B) The table below shows the scores of ten employees, randomly selected by a team of occupational psychologists studying work attitudes and psychological well-being. The respondents have completed two measures- a work involvement schedule and job-satisfaction inventory. Compute Pearson's correlation and comment on the value.

Work Involvement	Job satisfaction
43	4
55	5
67	6
38	4
49	5
70	7
80	9
62	5
73	6
83	9

Q.NO.III) Solve any one of the following:

(10mrks)

A) A researcher interested in evaluating environmentally friendly behaviours evaluated how often people recycle (per month) based on whether they have an overall optimistic or an overall pessimistic attitude toward eco-friendly behaviours. The results from this hypothetical study are given in the table below. Use an appropriate parametric test to determine whether or not recycling behaviours differed between groups at 0.01% level of significance. (Critical value = 2.921).

Pessimistic	Optimistic
3	4
0	9
4	6
2	8
5	7
4	5
3	3
0	3
2	6

B) The time (in minutes) that rats took to go through a maze was noted for three groups of rats. Using an appropriate non-parametric test, test whether there are differences between the groups. (Critical Value = 5.991).

Untreated	Stimulant	Hallucinogen
1	8	19
8	16	18
23	9	15
20	2	17
21	6	23
7	7	24