

AU-2160

M.A. (Part—I) Examination
PSYCHOLOGY
(Statistical Methods in Psychological Research)
Paper—II

Time : Three Hours]

[Maximum Marks : 75

- N.B. :—** (1) Attempt **FIVE** questions, selecting **ONE** from each Unit.
 (2) All questions carry equal marks.
 (3) Use of statistical tables, log tables and calculator is permitted.

UNIT—I

1. Answer in brief :
 - (a) A distribution of 400 subjects has to be divided in seven groups assuming normal distribution. Divide the distribution with equal z units.
 - (b) Advantages and disadvantages of parametric tests.
 - (c) Use of z, Z and T scores in psychological research. 15
2. Answer in brief :
 - (a) One tailed and two tailed tests.
 - (b) Types of distributions.
 - (c) A distribution of 260 subjects has a mean of 46.0, SD of 12.8. Determine what scores would contain middle 60% of cases. 15

UNIT—II

3. Answer in brief :
 - (a) Orientation of children at the first day of school and after one month of schooling is specified below. Determine whether the orientation of children has significant change :

Object of Orientation (One Month)			
		Children	Adults
Object of Orientation	Adults	14	4
	Children	3	4
First Day			

- (b) Compute χ^2 (Chi-square) for following obtained frequencies :

Disagree	Agree	Uncertain
15	10	75

- (c) Determine whether the effect of training is significant from the following data :

No training group :	10	11	15	14	12
Training group :	11	16	21	26	20

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4. Compute the following :

- (a) Do the conditions below differ significantly ?

Performance under the Conditions of Fatigue

Less	Moderate	High
14	10	4
16	9	5
15	8	4
13	9	3

- (b) Compute Chi-square through independent by hypothesis :

	I	II	III	IV	V	Total
Normal	20	18	25	22	21	= 106
Abnormal	25	21	16	20	24	= 106

- (c) Describe the various conditions for computing analysis of variance.

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UNIT—III

5. (a) Compute rank difference correlation :

Experience (years)	:	15	10	07	02	04	05	09
Sale (thousands)	:	23	16	10	07	09	10	14

- (b) Compute phi-correlation :

Intelligence

	Average	Above average
Rich	29	51
Poor	40	31

- (c) Explain the concept of correlation and when to use each correlation technique.

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6. (a) From the following data predict X_1 :

$$a = 51.58, b_{12.3} = 0.233, b_{13.2} = 0.175, X_2 = 25 \text{ and } X_3 = 32$$

- (b) Differentiate between partial and multiple correlation and compute multiple correlation for the following :

$$r_{12} = 0.67, r_{13} = 0.72 \text{ and } r_{23} = 0.17.$$

- (c) Compute partial correlation from the following :

$$r_{12} = 0.78, r_{13} = 0.52 \text{ and } r_{23} = 0.54.$$

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UNIT—IV

7. Compute upto two centroid factors for the following correlation matrix :

Tests	1	2	3	4	5	6
1	1.0	.72	0.0	.27	0.0	.63
2	.72	1.0	.16	.40	.12	.56
3	0.0	.16	1.0	.64	.48	0.0
4	.27	.40	.64	1.0	.48	.21
5	0.0	.12	.48	.48	1.0	0.0
6	.63	.56	0.0	.21	0.0	1.0

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8. Describe in detail various concepts of factor analysis.

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UNIT—V

9. (a) Compute Chi-square for the following data :

	Illiterate	Moderately educated	Highly educated
Rich	10	80	10
Middle class	12	80	10
Poor	80	15	5

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(b) Compute two way anova (analysis of variance) for the following data :

		Training	
		Less	More
Motivation of Subjects	More	60	80
		55	90
		61	95
		59	98
	Less	45	30
		35	35
		40	20
		42	40

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10. (a) Find out Chi-square :

Intelligence		
	Above Average	Below Average
Female	50	12
Male	45	10

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(b) Compute F ratios for the following data :

Anxiety		
	Less	More
Girls	80	45
	85	55
	90	60
	80	50
	95	56
Boys	80	60
	85	65
	75	70
	65	75
	80	70

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