

2019

GEOGRAPHY — HONOURS

Paper : CC-7

Full Marks : 50

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Use of Scientific Calculators is Allowed in this Examination / Paper.

Group - A

Answer *any five* of the following questions.

1. Differentiate between descriptive and inferential statistics. 2
2. Arrange the numbers 12, 56, 42, 21, 5, 18, 10, 3, 61, 34, 65 and 24 in an array and determine the range. 2
3. Differentiate between discrete and continuous data. 2
4. Which is a better measure of dispersion : standard deviation or coefficient of variation? Justify your answer. 1+1
5. Distinguish between questionnaire and schedule. 2
6. What is meant by secular trend in time series? 2
7. Given the following data series representing number of households in ten different villages :
206, 325, 474, 556, 762, 603, 490, 350, 220, 108; determine the measure of central tendency which is also a partition value. 2
8. Examine whether the following variables are discrete or continuous : ½×4
 - (a) Size of land holdings
 - (b) Size of family
 - (c) Age of a person
 - (d) Population density per sq. kms.

Please Turn Over

Group - B

Answer *any four* of the following questions.

9. Discuss the scales of measurement of data with suitable example for each. 5
10. What are the different parts of a table? Explain with the help of a diagram. What are the two main advantages of tabulation of data? 2+1+2
11. Discuss the properties of normal distribution / curve. 5
12. A jar contains 8 white and 2 black balls. Two balls are drawn from the jar at random. Find the probability that one is black and one is white. 5
13. Using data provided in the Table 1, determine the Spearman's Rank Correlation Coefficient between the two variables and interpret the nature of relationship between them. 4+1

Table 1 : Female Literacy Rates and Complete Vaccination Coverage of Children between 12-23 months of age (%) for some States of India.

State	Female Literacy Rate	Complete Vaccination Coverage of Children between 12-23 months of age (%)
Bihar	53.33	61.7
Chhattisgarh	60.59	76.4
Gujarat	70.73	50.4
Haryana	66.77	62.2
Jharkhand	56.21	61.9
Karnataka	68.13	62.6
Kerala	91.98	82.1
Madhya Pradesh	60.02	53.6
Maharashtra	75.48	56.3
Odisha	64.36	78.6

14. In an analysis of rainfall (x) and runoff (y) given for 10 events at a location, it was found that :
 $\sum x = 53.90$, $\sum y = 29.00$, $\sum x^2 = 309.51$, $\sum y^2 = 89.58$, $\sum xy = 163.60$

Determine the Pearson's correlation coefficient and test the hypothesis that the computed correlation coefficient is not significantly different from zero (i.e. rainfall and runoff are not significantly associated) at 5% level of significance. (Refer to Supplied Table A1 - Critical Value of Student's 't') 2½+2½

Group - C

Answer *any two* of the following questions.

15. What are the different types of sampling? Discuss the advantages, disadvantages and methods of simple random sampling. 5+5
16. On the basis of data provided in Table 2,
- (a) Draw a time series graph to show the annual production of tea of Darjeeling.
- (b) Compute and draw the trend by four year moving averages. 4+6

Table 2 : Annual Tea Production (,000 Kgs) in Darjeeling

Year	Tea Production (in ,000 Kg)
2006	10854
2007	10007
2008	11586
2009	8909
2010	8626
2011	9140
2012	8930
2013	9130
2014	8510
2015	8760
2016	8130

17. (a) What do you mean by degrees of freedom?
- (b) A random sample of 395 people of both gender revealed the following details regarding their educational attainment level (Table 3). Using Chi-square test determine whether there is any relationship between gender and the level of educational attainment and whether the relationship is significant at 5% level of significance. (Refer to Supplied Table A2- Critical Values of Chi-Square). 2+8

Table 3 : Educational Attainment Levels of Population by Gender

	Elementary School	High School	Graduate	Post-Graduate	Total
Female	60	54	45	41	200
Male	40	44	54	57	195
Total	100	98	99	98	395

Please Turn Over

18. From the following data find out the regression equation required for estimation of 'y'

Table - 4

District	Density of rural population	% of NSA
Bardhaman	699	67
Birbhum	613	69
Bankura	434	51
Purba Medinipur	1028	75
Paschim Medinipur	531	61
South 24 Parganas	595	40
Nadia	975	79
Puruliya	369	54
Darjeeling	354	44
Jalpaiguri	458	54

Q. No. 14

Table A1

Critical Values of Student's t					
Significance level (one-tailed)					
	0.05	0.025	0.01	0.005	0.00005
Degrees of freedom	Significance level (two-tailed)				
	0.1	0.05	0.02	0.01	0.001
1	6.31	12.71	31.82	63.66	636.62
2	2.92	4.30	6.97	9.93	31.60
3	2.35	3.18	4.54	5.84	12.92
4	2.13	2.78	3.75	4.60	8.61
5	2.01	2.57	3.37	4.03	6.86
6	1.94	2.45	3.14	3.71	5.96
7	1.89	2.37	3.00	3.50	5.41
8	1.86	2.31	2.90	3.35	5.04
9	1.83	2.26	2.82	3.25	4.78
10	1.81	2.23	2.76	3.17	4.59

Q. No. 17

Table A2- Critical Values of CHI-Square

Values of χ^2 with probability P of being exceed in random sampling v = number of degrees of freedom.					
P	0.20	0.10	0.05	.02	0.01
v					
1	1.64	2.71	3.84	5.41	6.63
2	3.32	4.61	5.99	7.82	9.21
3	4.64	6.25	7.81	9.84	11.34
4	5.90	7.78	9.49	11.67	13.28
5	7.29	9.24	11.07	13.39	15.09
6	8.56	10.64	12.59	15.03	16.81
7	9.80	12.02	14.07	16.62	18.48
8	11.03	13.36	15.51	18.17	20.09
9	12.24	14.68	16.92	19.68	21.67
10	13.44	15.99	18.31	21.16	23.21