2022

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 raw data and grouped data. 2

2. Explain the meaning of Universe in Statistics. If the standard deviation is 15 and the mean is 50, find the C.V of the distribution. 1+1

3. A mineral is drawn from a bag that contains two minerals — Calcite and Tourmaline. The probability of choosing a Calcite mineral specimen is 2/9. If the total number of Calcite and Tourmaline specimens in the bag together is 36, find the number of Tourmaline specimens. 2

4. How does the relationship between mean, median and mode of a frequency distribution determine the nature of skewness? 2

5. Determine the missing frequency (p) when the mean of the distribution is 50, $\Sigma f=39+p$ and $\Sigma fx=2085+5p$. 2

6. What are partition values and how are they represented diagrammatically? 2

7. Given the following data series representing amount of rainfall in cms for 10 years : 110, 97, 95, 105, 90, 107, 100, 102, 98, and 93; determine the measure of Central Tendency which is also a partition value. 2

Group – B

Answer ***any four*** of the following questions.

8. Prepare a frequency distribution table from the given data in Table 1 and determine the percentage of Villages with population between 3000 to 4000 persons. 3+2

Table 1

Population	Number of Villages
<500	20
<1000	50
<1500	110
< 2000	240
<2500	410
<3000	650
<3500	840
<4000	1020
<4500	1170
<5000	1200

9. What are the different sources of geographical data? 5

10. Compute the value of Spearman's Rank Correlation Coefficient between marks obtained in Theory and Practical with the following data and interpret the nature of relationship between them. 5

Table 2

Students	Marks in Theory	Marks in Practical
A	85	93
B	60	75
C	73	65
D	40	50
E	90	80

11. Explain the advantages of 'Relative Measures of Dispersion' over the 'Absolute Measures of Dispersion'. State any two properties of a Normal Distribution. 3+2

12. Explain the characteristics of different scales of measurement with suitable examples. 5

13. What is the difference between census enumeration and data obtained from sample survey? 5

14. (a) What do you mean by 'critical value' in test of significance?

(b) In an analysis of GDP and CO_2 emissions for 10 countries, it was found that the Pearson's correlation coefficient r is 0.88. Test the hypothesis that the computed correlation coefficient is significantly different from zero at 1% level of significance. (Refer to Supplied Table A1 – Critical Value of Student's 't') 1+4

Group – C

Answer *any two* of the following questions.

15. Define statistics. What is the difference between statistics in singular and plural sense? Discuss the significance of statistics for geographical studies. 2+2+6

16. (a) What is null hypothesis?

(b) A random sample of 300 people revealed the following details regarding distribution of Educational Attainment Levels by Marital Status (Table 3). Using Chi-square test determine whether there is any relationship between Marital Status and the level of educational attainment and whether the relationship is significant at 1% level of significance. (Refer to Supplied Table A2 — Critical Values of Chi-Square). 2+8

Table 3 : Educational Attainment Levels and Marital Status of Population

Marital Status	Graduate	Middle & Secondary	Elementary	Total
Never Married	36	36	18	90
Married	102	36	12	150
Widowed / Divorced	32	18	10	60
Total	170	90	40	300

17. (a) What do you mean by secular trend in time series data analysis?

(b) On the basis of data provided in Table 4, draw a time series graph to show food production. Compute and draw the trend by four years moving average. 2+(2+6)

Table 4 : Foodgrain Production

Year	Foodgrain production in '000 metric tons
2010-11	208.60
2011-12	217.28
2012-13	230.78
2013-14	234.47
2014-15	218.11
2015-16	244.49
2016-17	259.29
2017-18	257.13
2018 – 19	265.04

18. (a) Define independent and dependent variables with suitable examples.

(b) From the following data in Table 5, find the regression equation required for estimation of 'y'. 2+8

Table 5 : Irrigated Area and Cropping Intensity

Block	Irrigated Area(%)	Cropping Intensity(%)
Rajnagar	38	106
Md. Bazar	43	116
Suri-I	51	123
Dubrajpur	51	131
Rampurhat-I	63	133
Nalhati-I	51	156
Suri-II	69	179
Nalhati-II	68	213

14(b). **Table A1 – Critical Value of Student's 't'**

Degrees of Freedom	Significance level (one-tailed) 0.05	0.025	0.01	0.005	0.00005
	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
11	1.80	2.20	2.72	3.11	4.44
12	1.78	2.18	2.68	3.05	4.32
13	1.77	2.16	2.65	3.01	4.22
14	1.76	2.15	2.62	2.98	4.14
15	1.75	2.13	2.60	2.95	4.07
16	1.75	2.12	2.58	2.92	4.01

16(b). **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.					
v \ P	0.20	0.10	0.05	0.02	0.01
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