

**Ph.D. GEOGRAPHY (PHDGG)**

**Term-End Examination**

**June, 2016**

**RGG-003 : RESEARCH TECHNIQUES I (QUANTITATIVE)**

*Time : 2 hours*

*Maximum Marks : 50*

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*Note : Attempt any **two** questions each from Sections I and II. Attempt any **four** questions from Section III.*

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**SECTION I**

*Write your answers on any **two** of the following questions (10 marks each and not exceeding 300 words) :*

1. Explain the nature and importance of statistical inquiry and its limitations. 10
2. Explain the methods of tabulation and representation of data. 10
3. Construct a Composite Index of the data given in Table 1 using a suitable method other than Ranking method explaining the procedure followed. 10
4. What are the indices for measuring diversity ? Explain Weaver's method of Diversity Index. 10

## SECTION II

5. Write short notes on any *two* of the following questions (5 marks each) :
- (a) What are the measures of dispersion ? 5
  - (b) Explain the methods of converting indicators into scale-free data. 5
  - (c) Explain the use of Dummy Variables. 5
  - (d) What is the difference between Principal Component Analysis (PCA) and Cluster Analysis ? 5

## SECTION III

6. Attempt any *four* of the following questions (5 marks each) :
- (a) Find out the Mean and Median values of normal temperature of Delhi given in Table 2. 5
  - (b) Construct classes using Mean and Standard Deviation from the data given in Table 2. 5
  - (c) Draw a Lorenz curve based on the landholding given in Table 3. 5
  - (d) What is Location Quotient ? Compute the Location Quotient based on the data given in Table 4. 5
  - (e) Find out the correlation coefficient on the data given in Table 5 using Pearson's Rank correlation. 5
  - (f) Show the graphical representation of frequency distribution by frequency curve and cumulative frequency curve from the data given in Table 6. 5

**Table 1**  
**Statewise Development Indicators**

S. No.	State	Per Capita Income	Literacy	Vaccination of Children	Per sq.km Surfaced Road Length in km
1.	Andaman & Nicobar Islands	80588	86.63	95.0	0.14
2.	Andhra Pradesh	60703	67.66	49.6	0.57
3.	Arunachal Pradesh	61002	66.95	19.1	0.17
4.	Assam	33348	73.18	37.0	0.48
5.	Bihar	19205	63.82	39.8	0.61
6.	Chandigarh	130763	86.77	100.0	20.04
7.	Chhattisgarh	40166	71.04	54.0	0.47
8.	Delhi	148608	86.34	63.6	14.13
9.	Goa	164962	87.40	59.3	2.03
10.	Gujarat	78802	79.31	55.2	0.72
11.	Haryana	94798	76.64	74.8	0.85
12.	Himachal Pradesh	67475	83.78	73.0	0.60
13.	Jammu & Kashmir	40752	68.72	78.0	0.06
14.	Jharkhand	34721	67.63	51.1	0.21
15.	Karnataka	62251	75.60	63.4	0.93
16.	Kerala	69465	93.91	79.7	2.84
17.	Madhya Pradesh	32223	70.63	48.9	0.39
18.	Maharashtra	83395	82.91	65.1	1.10
19.	Manipur	29281	79.85	100.0	0.36
20.	Meghalaya	48690	75.48	82.8	0.32
21.	Mizoram	48591	91.58	75.4	0.33
22.	Nagaland	53635	80.11	78.0	0.93
23.	Odisha	38878	73.45	59.1	0.38
24.	Puducherry	101072	85.85	100.0	5.02
25.	Punjab	69580	76.68	67.9	1.52
26.	Rajasthan	44709	67.06	31.9	0.57
27.	Sikkim	108972	82.20	100.0	0.58
28.	Tamil Nadu	78473	80.33	86.7	1.22
29.	Tripura	45087	87.75	69.4	1.35
30.	Uttar Pradesh	26692	69.72	29.9	1.24
31.	Uttarakhand	73815	79.63	63.6	0.50
32.	West Bengal	47389	77.08	67.4	1.30

**Table 2**

Months	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Temp (°C)	14.3	16.8	22.3	28.8	32.5	33.4	30.8	30.0	29.5	26.3	20.8	15.7

**Table 3**

% Households	Lowest 20	2 <sup>nd</sup> 20	3 <sup>rd</sup> 20	4 <sup>th</sup> 20	Top 20	Total
Share of Landholdings (%)	0.75	4.5	12.75	22	60	100

**Table 4**

S. No.	State	Percentage of ST
1.	India	8.6
2.	Sikkim	33.8
3.	Arunachal Pradesh	68.8
4.	Nagaland	86.5
5.	Manipur	35.1
6.	Mizoram	94.4
7.	Tripura	31.8
8.	Meghalaya	86.1
9.	Assam	12.4
10.	West Bengal	5.8
11.	Jharkhand	26.2
12.	Odisha	22.8
13.	Chhattisgarh	30.6
14.	Madhya Pradesh	21.1

**Table 5**

District	Rank in PCI	Rank in Literacy
1	5	9
2	4	2
3	7	10
4	6	4
5	8	6
6	3	5
7	1	3
8	9	7
9	10	8
10	2	1

**Table 6**  
**Rainfall Distribution of 60 Days**

Rainfall in mm	No. of Days
5 – 10	2
10 – 15	4
15 – 20	5
20 – 25	10
25 – 30	15
30 – 35	18
35 – 40	6
Total	60