Total No. of Questions : 6]

SEAT No. :

P1640

[Total No. of Pages : 2

[5228]-201
M.A./M.Sc.
GEOGRAPHY
Gg - 201 : Quantitative Techniques in Geography
(2013 Pattern) (Semester - II) (Credit System)

Time : 2½ Hours] *[Max. Marks : 38*

Instructions to the candidates:

1) ***Attempt any two questions from Q. 1 to Q. 4.***
2) ***Question 5 and 6 are compulsory.***
3) ***Figures to the right side indicate full marks.***
4) ***Use of statistical tables and calculator is allowed.***

Q1) a) What do you mean by spatial and temporal data? **[2]**

b) Calculate mean and standard deviation for the following data **[4]**

classes	0-5	5-10	10-15	15-20	20-25	25-30	30-35
f	12	14	16	19	17	15	13

c) Calculate skewness for the data provided in Q. 1 b. **[4]**

Q2) a) Write any two characteristics of normal probability curve. **[2]**

b) The average annual rainfall of a district is 567mm and standard deviation is 127mm. Assuming that the rainfall is normally distributed, what is the probability of rainfall to be: **[4]**

i) Between 400 and 500mm.

ii) Less than 150mm.

c) During the last 1000 years a station had experienced 15 earthquakes. Using an appropriate probability distribution find the probability that in the next 100 years the station will be struck by **[4]**

i) At least 10 earthquakes.

ii) At most 5 earthquakes.

Q3) a) Explain the concept of explained variance in bivariate analysis. **[2]**

b) Obtain a simple regression equation for the given data. **[4]**

X	42	40	39	38	35	32	25	20
Y	30	38	55	70	72	73	76	77

c) Calculate the Pearson product moment correlation coefficient (r) for the data given in Q3b. **[4]**

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Q4) a) Define the term level of significance (rejection level). **[2]**

b) Formulate the hypothesis and apply 't' test for the given data. **[4]**

Sample A	11	10	8	5	3	2	1
Sample B	2	3	7	10	11	14	16

c) From the result obtained in Q. 4b. test the hypothesis at 5% and 1% level of significance and interpret the same. **[4]**

Q5) a) Following table gives the yield of the crops (kg) for four different regions. Test the hypothesis at 0.01 level of significance that samples do not differ among themselves. Apply 'F' test. **[5]**

Region →	Plain	Mountain	Delta	Irrigated land
Yield of Index	2	8	3	4
	4	2	5	5
	3	3	9	5
	2	3	6	6
	4	4	6	2

b) What are population and sample statistics. **[4]**

Q6) a) Calculate 5 years moving average for the discharge (Q) in m^3/s of a river. **[5]**

Plot the data and interpret the results.

Year	1997	1998	1999	2000	2001	2002	2003
Q	6.36	5.74	6.87	6.82	6.65	6.52	5.6

Year	2004	2005	2006	2007	2008	2009	2010	2011
Q	6.39	6.4	6.36	6.9	5.82	5.91	7.52	9.14

b) Write a note on trends and periodicity in time series. **[4]**

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