Total No. of Questions : 7]

SEAT No. :

P1601

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[5228]-21
M.A./M.Sc.
GEOGRAPHY
Gg - 201 : Quantitative Techniques in Geography
(2008 Pattern) (Semester - II)

Time : 3 Hours] *[Max. Marks : 80*

Instructions to the candidates:

1) ***Attempt any four questions.***
2) ***Use of calculator and statistical table are allowed.***
3) ***The figures in the right hand side bracket indicate full marks.***

Q1) a) Write a note on nominal and ordinal scale. **[6]**

b) Calculate skewness for the given data and comment on the results. **[14]**

Class	0-10	10-20	20-30	30-40	40-50
Frequency	2	2	6	11	6

Q2) a) Write a note on kurtosis. **[6]**

b) According to the United States Census Bureau, 26.3% of all households have three or more cars. If a sample of 20 households are selected at random, what is the probability for having three or more cars for **[14]**

i) 2 households

ii) 4 households

iii) 5 households

iv) Exactly 5 households.

Q3) a) Write a note on degrees of freedom. **[6]**

b) The following table gives data of production of wheat (in millions metric tons) of India from 2005 to 2012. Using least-square method, obtain a line of best fit. **[14]**

Estimate production of wheat for year 2013.

Year	2005	2006	2007	2008	2009	2010	2011	2012
Production	72.0	69.4	74.9	78.6	80.7	80.7	86.9	94.9

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Q4) a) Write a note on types of statistics. **[6]**

b) Data are gathered for five cars in a car mall, regarding number of kilometers driven in a given year and maintenance costs in rupees for that year. Obtain the regression equation, plot the regression line and scatter plot.**[14]**

Kilometers driven (X)	128000	46400	84800	20800	72000
Maintenance costs (Y)	73716	9214	39929	12286	19965

Q5) a) Meaning of unbiased random sample. **[6]**

b) Apply the Chi-square test to find out whether there is difference between the working status and marital status at a significance level of 0.05. **[14]**

Marital status → / Working status ↓	Married	Widowed or divorced	Unmarried
Employed	679	103	114
Unemployed	63	10	20
Business man	42	18	25

Q6) The following data on calcium content of wheat are consistent with summary quantities. Three different storage times were considered. Is there sufficient evidence to conclude that the mean calcium content is not the same for the three different storage times? Perform the analysis of variance (ANOVA) (F Test) to test the hypothesis at the 0.05 level. **[20]**

		Observations		
Storage Time	1 month	58.87	56.43	56.51
	2 months	59.13	60.38	58.01
	3 months	62.32	58.76	60.03

Q7) Write notes on any two: **[20]**

a) Binomial Probability Distribution.

b) Trends and periodicity.

c) Grouped and ungrouped data.

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