



- From the chart give the approximate values of first quartile, median and third quartile for both X1 and X2.
- Comment and compare the two distributions.
- What values do the two whiskers denote?
- What do the two dots signify? (5×5)

(200)

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[This question paper contains 6 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 2507A IC

Unique Paper Code : 32373901

Name of the Paper : Statistical Data Analysis  
Using Software Packages

Name of the Course : B.Sc. (H) Statistics : SEC

Semester : IV

Duration : 2 Hours Maximum Marks : 50

**Instructions for Candidates**

- Write your Roll No. on the top immediately on receipt of this question paper.
- All questions are compulsory.
- Questions should be answered using the application of SPSS Package.

1. Fill in the blanks :

- A new, blank column will appear to the \_\_\_\_\_ of the column or cell you selected in case of "insert variable".
- The maximum length of a value label is \_\_\_\_\_ characters.

P.T.O.

- (iii) The data editor has two views - \_\_\_\_\_ and \_\_\_\_\_ .
- (iv) The \_\_\_\_\_ procedure is used to create contingency tables.
- (v) SPSS syntax \_\_\_\_\_ case-sensitive. (1×5)

2. Attempt any **ten** from the following :

- (a) Write the steps to generate a random sample of size 10 from binomial distribution with parameters (8, 0.45).
- (b) How do you insert a new record into the existing data set?
- (c) Give any two ways of defining information about variables.
- (d) Give any four variable types in SPSS.
- (e) Explain the difference between the files with extension .sav and .spv
- (f) State the utility of 'Select cases' option with the help of an example.
- (g) Write the steps required to compute the mode of a given data set.

and analyzed. The following output has been obtained, read the output and answer the following:

Group Statistics

	ORIGIN	Country of Origin	N	Mean	Std. Deviation	Std. Error Mean
WEIGHT Vehicle	2	European	73	2431.49	490.884	57.454
Weight (lbs.)	3	Japanese	79	2221.23	320.497	36.059

Independent Samples Test

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
WEIGHT Vehic Weight (lbs.)	18.242	.000	3.150	150	.002	210.27	66.756	78.362	342.169
			3.100	122.367	.002	210.27	67.832	75.990	344.541

- (i) Give the reason for the appearance of F statistics in t-test output?
- (ii) (a) Write both null and alternative hypotheses for the given independent samples test.
- (b) What is the value of the calculated test statistic and its degrees of freedom?
- (c) What conclusions do we draw about the null hypothesis? Give reason.
- (f) Given below is the output of boxplots. Read the chart carefully and answer the following :

- (h) Name the steps required to compute the chi-square statistics for goodness of fit test.
- (i) Give the procedure for constructing pie chart in SPSS.
- (j) Write the steps required to compute partial correlation coefficient  $r_{13.2}$ . (2×10)

3. Answer any **five** of the following :

- (a) Marks of four different subjects English, Mathematics, Physics and Chemistry are given for 50 students. Write the steps involved in computing the mean of these four subjects for each student.
- (b) Write steps required to obtain predicted and residual values of the dependent variable in case of linear regression without using “Transform/Compute” option. Further, explain the steps to plot estimated and observed values of the dependent variable for the given sample on the same graph.
- (c) For a given grouped frequency distribution write steps to compute less than cumulative frequencies and hence construct “less than” cumulative frequency curve.

- (d) Given below is the frequency table for variable *Rank*. Read the table carefully and answer the following :

**Class rank**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Freshman	147	33.8	36.2	36.2
	Sophomore	96	22.1	23.6	59.9
	Junior	98	22.5	24.1	84.0
	Senior	65	14.9	16.0	100.0
	Total	406	93.3	100.0	
Missing	System	29	6.7		
Total		435	100.0		

- (i) Number of students in the sample?
- (ii) How many students did not specify the class ranks?
- (iii) What does the percent column indicate?
- (iv) What does the valid percent display?
- (v) What is the difference between percent and valid percent column?
- (e) Vehicles (Cars) have been selected from two countries of origin namely, European and Japanese to investigate whether average weights of vehicles differ. In order to test this, weights of selected cars from the two countries have been recorded