[97] SEAT No._____ No. of Pages to be printed: 03

Sardar Patel University,

M.Sc. (Applied Statistics) Semester: II, External Examination, 2019

PS02CAST24: Statistical Methods through SPSS

28th March 2019, Thursday

Time: 10:00 AM – 01:00 PM **Total Marks: 70**

Q.1) Multiple Choice Questions. **[08]**

1) To generate a Spearman's rho test, which set of instructions should you give SPSS?
   a) Analyze→Correlate→ Bivariate→ Spearman → [select variables] → OK
   b) Analyze→Correlate→ Bivariate→ [select variables] → Spearman→ OK
   c) Analyze→Correlate→ Spearman → [select variables] → Bivariate → OK
   d) Analyze→Correlate→ Bivariate→ Spearman→ OK

2) Ordered sequence of menus in Menu bar of SPSS is …, …, …
   a) (View, Edit, Data) c) (Edit, Transform, Data)
   b) (Edit, View, Transform) d) (Data, View, Transform)

3) Type of variable can be inserted in SPSS is …..
   a) String b) Scientific Notation c) Restricted Numeric d) All of Above

4) Which command useful to bines the variable in SPSS?
   a) Visual Binning c) Automatic recode
   b) Recode in to different variable d) All of above

5) The file extensions of SPSS files are …
   a) (*.spv, *.sav) b) (*.sav, *.sps) c) Both (a) and (b) d) (*.sav, *.sop)

6) Ordinal level data are characterized as meaningful:
   a) Arrangement of data c) Arrangement of variable
   b) Arrangement by magnitude d) Arrangement

7) If a sample is unrepresentative, this implies:
   a) Not enough data were collected
   b) The data are not normally distributed
   c) One single measurement was not typical and therefore not useful
   d) Sample should not be used to make inferences about the population parameter

8) What is valid percentage in frequency table obtained in SPSS output window?
   a) % Excluding missing cases only c) % Excluding blank cases only
   b) % including all cases d) % Excluding both blank and missing cases

Q.2) **Answer any seven.** **[14]**

a) List two disadvantages of SPSS over Minitab.

b) Give two tools which are useful in data cleaning.

c) State true or false with justification, "In SPSS the variable length (cases) may differ from

variable to variable".

d) Draw dialogue box for the simple linear regression.

e) Write use of copy data properties and how to use it?

f) How to create menu "XYZ" in SPSS?

g) Write symbols of select cases for the operator "AND", "OR", "Greater than equal to", "Not equal to".

h) Write statistical tools used to detect outliers with justification.

i) How to form a frequency table with specified class width for continuous measurements?

Q.3)a) Explain in detail procedure of forming codes in categorical variables if entered SPSS variable; **[06]**

i. Contains 4000 cases with 27 categories and is of Qualitative in nature

ii. Contains three similar category but coded differently

b) Write a short note on merge file and weight cases.

==OR==

b) Write a short note on split file and select cases.

Q. 4)a) Prepare shell file for the section personal information and section I in the word file **Questionnaire.docx** **[06]**

Q. 4)b) Prepare shell file for the section II in the word file **Questionnaire.docx** **[06]**

==OR==

Q. 4)b) Prepare shell file for the section III and section IV in the word file **Questionnaire.docx** **[06]**

Q.5)a) Compute the following table by using Q_5.sav file. (given in your Exam folder) and save the output file in Portable document format with the file name "Q_5" **[06]**

Number of Cylinders * Miles per Gallon

Country of Origin			Miles per Gallon (Binned)								Total
			10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45+	
American	Number of Cylinders	4 Cylinders									
		6 Cylinders									
		8 Cylinders									
	Total										
European	Number of Cylinders	4 Cylinders									
		5 Cylinders									
		6 Cylinders									
	Total										
Japanese	Number of Cylinders	3 Cylinders									
		4 Cylinders									
		6 Cylinders									
	Total										

Q.5)b) Consider the following data, collected from number of schools regarding speeches defects (SD) (S_1, S_2, S_3) and physical defects (PD) (P_1, P_2, P_3) of school children **[06]**

		SD			Total
		S_1	S_2	S_3	
PD	P_1	45	26	12	83
	P_2	32	50	21	103
	P_3	4	10	17	31
Total		81	86	50	217

Test the hypothesis of independence between the two types of defects

==OR==

Q.5)b) Is there any significant association between country origin and no. of cylinders? (Use SPSS file Q.5) **[06]**

Q.6)a) The name mills company has a line of metal tableware products that require a polishing step in the manufacturing process. To help plan the production schedule, the polishing times for 59 products were recorded, along with the product type and the relative sizes of these products, measured I terms of their diameters. **[06]**

This information contain data file in **Polishing.sav**. use linear regression to determine whether the polishing time can be predicated by product size.

b) Answer the following question with the help of spss data file: **Data File 1** **[06]**

1. How old are the respondents? What is the proportion of young people who are less 35 year?
2. Create a column diagram about the proportion of respondents grouped by education level stacked by gender! Embellish the graph.
3. Define the central tendencies, measures of distribution, measures of asymmetry and quartiles for total expenditure (HUF/month) of households.
4. Test the hypothesis that the average expenditure on heating of households heating with gas and households heating with solid fuels are equal! ($\alpha = 5\%$)

==OR==

b) Answer the following question with the help of spss data file: **Data File 1** **[06]**

1. Create crosstabs from the type of heating (heating_bin) and household clusters and check is there any dependence between the type of heating and household clusters.
2. Is there any dependence between the type of heating (*heating_bin*) and the average expenditures on heating?
3. Is there any relation between the average income, total expenditure and number of people living in the household?
4. Test the hypothesis that the total expenditure of households equals \$100 000. ($\alpha = 5\%$)

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