**WORK FROM 10-11 Date:** 17/3/2018

Register Number: 1740256  
-----------------------------------------------------------------------------------------**Question 1**

Define joint distribution function. How do you define independence in terms of distribution functions?

**Answer 1**

Joint Distribution functions are those functions which contain 2 random variables (Say X & Y) where their probability distribution lies falls in a particular range or a particular set of values.

It’s p.m.f is given by –

**P(ij) = P(X=x(i) Intersection Y = y(i))**

1. **P(ij) >= 0 for all values of I and j**
2. **Summation p(ij) = 1 I = 1 to m, j = 1 to n.**

They are independent when the product of their probabilities are equal to both of their probabilities combined.

**P(XY) = P(X)P(Y)**

--------------------------------------------------------------------------------------------**Question 2**

If X and Y are bivariate random variables, examine their joint distribution function when (i) X is discrete, (ii) X is continuous.

**Answer 2**  
Let X & Y be 2 discrete random variables with joint probability distribution. The probability distribution of X alone Is marginal distribution of X. The probability of Y alone is marginal distribution of Y.

**Px(xi) = summation Pij [for all values of i) = pi.**

**Py(yj) = summation Pij [for all values of j) = p.j**   
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**Question 79**

Explain the function of “SORT” and “SPLIT FILE” in SPSS.

**Answer 79**

Sorting data allows us to reorganize the data in ascending or descending order so that it helps in analysis. There are 2 types of sorting in SPSS –

1. Sort cases i.e. row sort – will rearrange the rows either in ascending or descending order.

* Click on data & go to sort.
* It shows the different variables which can be sorted in that data.
* Choose any 1 variables & drag it to the next box.
* Choose ascending or descending and click ok.   
  **NOTE** – If we want to save the newly sorted data to a new file, then check the box of save file with sorted data. Click on OK and save the file.

1. Sort variables i.e. column sort

When analyzing data, it is sometimes useful to temporarily "group" or "split" your data in order to compare results across different subsets. This can be useful when you want to compare frequency distributions or descriptive statistics with respect to the categories of some variable (e.g., Gender) - especially if you want separate tables of results for each group.

To split your dataset, click **Data > Split File**.

The Split File window will appear. You can choose one of two ways to split the data:

1. Compare groups
2. Organize output by groups

For both splitting methods, there are two considerations to be made:

* The splitting variable(s) should be nominal or ordinal categorical. SPSS will not stop you from using a continuous variable as a splitting variable, but it is a bad idea to try to attempt this; SPSS will see each unique numeric value as a distinct category.
* In order to split the file, SPSS requires that the data be sorted with respect to the splitting variable. By default, **Sort the file by grouping variables** is selected.

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**Question 80**

What are the various scales of measurement in SPSS? Give one example for each.

**Answer 80**

The different scales of measurement are –

Nominal – default

Ordinal –

Scale – address, age, employee.

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**Question 81**

Identify different methods of filtering (selecting cases) in SPSS.

**Answer 81**

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**Question 82**

Formulte the procedure to define new variables and filtering (selecting cases) using SPSS.

**Answer 82**

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**Question 83**

Identify the steps involved importing data from other data files to SPSS.

**Answer 83**

To import data files in SPSS, - Click on the file menu bar. Click on the browse button in the login window. Find the appropriate database and click on open.   
  
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**Question 84**

Develop the steps for recoding variables in SPSS

**Answer 84**

Recoding variables is done to code any variable in the way we want it for analysis. Recoding is of 2 types –

1. Recoding into the same variable
2. Recoding into different variables.

Recoding into the same variable changes the original variable and is not preferred. This is because researchers want to retain the original value for cross checking and other purposes.   
Thus, we will be using recoding into different variables in all the exercises.

1. Open the required file in SPSS.
2. Go to transform and select recode into different variable.
3. Choose the variable which has to be recoded and drag to the right - hand box.
4. Under the output variable name, enter the new name and press change.
5. Click on old and new values and enter the values of the new variable.
6. Click add and then continue.
7. We observe that a new variable has been introduced in the data set.

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**Question 85**

Explain types of variables and their measurements in SPSS.

**Answer 85**

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**Question 86**

Expand SPSS. Give some applications of SPSS in statistical data analysis.

**Answer 86**  
Statistical Package for the Social Sciences (SPSS). The applications of SPSS are - • Data transformations • Data Examination • Descriptive Statistics • Contingency tables • Reliability tests • Correlation • T-tests • ANOVA • MANOVA • General Linear Model (Release 7.0 and higher) • Regression • Nonlinear Regression • Logistic Regression • Loglinear Regression • Discriminant Analysis • Factor Analysis • Cluster anlaysis • Multidimensional scaling • Probit analysis • Forecasting/Time Series • Survival analysis • Nonparametric analysis • Graphics and graphical interface

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Formlate the steps to find regression coefficients in SPSS.

**Answer 87  
CORRELATION -**

1. Choose any relevant file or enter the data manually.
2. Consider any 2 variables which can be correlated.
3. Choose correlate, go to analyse and then choose the bi-variate option.
4. Tick both Karl – Pearson’s and Spearman’s correlation coefficient.
5. Choose either 1- tailed or 2 – tailed level of significance.
6. Click ok.

**REGRESSION -**

1. After entering the data into the SPSS data view, go to the analyse menu.
2. Go to the regression option in the drop-down menu that appears and choose linear.
3. Identify the dependent variable from the data set as well as the independent variable.
4. Drag the variables to the respective boxes. (dependent & independent) & click ok.
5. Choose the dependent variable x(in this case – sales in thousands) & the independent variable y(vehicle type).
6. The result will give the value of bxy as well as the corresponding value of the constant ‘A’.
7. Repeat steps 1-4 with the x & y variables exchanged i.e. sales in thousands as the independent variable & vehicle type as the dependent variable to obtain byx.
8. To find the lines of regression – substitute the values in the formula respectively –

X=a+bxyY

Y=a+byxX

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 THE END  
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