Registration Number:

Symbiosis Skills and Professional University

(Recognised by UGC & Established under Govt. of Maharashtra Act No. XXXVII 2017)

(Formerly known as Symbiosis Skills & Open University)

Future Ready Skills Training

Certificate Course in Machine Learning Engineer

End Course Skill Examination

(Batch-M1)

Slip No. M1_2

Duration: 3 Hr. **Max. Marks: 50**

Marks	Signature of Internal Examiner	Signature of External examiner
50		

Instructions:

1. *Read the questions carefully and perform experiment/task accordingly.*
2. *Save your file with your name (ML1_Name)*
3. *Get checked program output/ software output by examiner*
4. *Show all work to the examiner.*

Q.1) Read two different .csv files 'User Usage.csv' & 'User device.csv'. Use the statistical skills to answer the following questions. [15 Marks]

a) Perform any suitable method to combine these datasets (concat/Merge/ Join). Apply data pre-processing techniques on given data set. [6]

b) Analyse your data using exploratory data analysis. [6]

c) Draw your conclusions and comment on your findings. [3]

Q.2) Based on the above data frame, Use the programming skill to answer the following questions. [15 Marks]

a) Create the basket for discount on Monthly MB: [6]

Monthly MB	Discount to attract users
Upto 50 MB	10% extra on monthly MB usage
51 MB- 1000 MB	4% extra on monthly MB usage
1001MB – 15000MB	3% extra on monthly MB usage
15001MB – 30000MB	2% extra on monthly MB usage

b) Create the new column "Message" having message for user as mentioned below:

"Greetings, Your Monthly used data is 50MB. You will get 55 MB data to use for the next month."

c) Find [3]

i) Which platform user uses highest Monthly_mb used.

ii) Least used device.

iii) Count of the IOS users

Q.3) Find the following data set. Observe all the variables and data values given in the data set. Using the machine learning skill answer the following questions [20 Marks]

DATA SET: Glass Data Set

This data is the result of a chemical composition of the glass. Based on chemical composition type of glass is defined.

Attribute Information is as mentioned below:

1. Id number: 1 to 214
2. RI: refractive index
3. Na: Sodium (unit measurement: weight percent in corresponding oxide, as

   are attributes 4-10)
4. Mg: Magnesium
5. Al: Aluminum
6. Si: Silicon
7. K: Potassium
8. Ca: Calcium
9. Ba: Barium
10. Fe: Iron
11. Type of glass: (class attribute)

    -- 1 building_windows_float_processed

    -- 2 building_windows_non_float_processed

    -- 3 vehicle_windows_float_processed

    -- 4 vehicle_windows_non_float_processed (none in this database)

    -- 5 containers

    -- 6 tableware

    -- 7 headlamps

Using a suitable machine learning technique, develop a suitable model to predict, if glass can be used for household purpose.