**JAIPURIA INSTITUTE OF MANAGEMENT, INDORE**

**PGDM**

**FOURTH TRIMESTER (Batch 2020-22)**

**END TERM EXAMINATION, OCT-2021**

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| Course Name | **Data Mining and Predictive Analytics** | Course Code | **BA401** |
| Max. Time | **2 hours** | Max. Marks | **40** |

**INSTRUCTIONS:**

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| 1 | All questions are to be attempted.  |
| 2 | In each worksheet question number and answer number are separately specified. |
| 3 | Answers are to performed in the specified worksheet. |
| 4 | All questions are to be answered with justification. (Business Inferences and Decision Making should be explained ) |
| 5 | Required screenshots from RapidMiner Studio / MS- Excel are to be pasted at the appropriate worksheet/ location. |
| 6 | After performing desired operations on the question worksheet PASTE Output/ Analysis sheet on Answer Worksheet. |
| 7 | Question dataset is in question worksheet and answer worksheet contains questions also. |
| 8 | MS- Excel and/or RapidMiner Studio are to be used as Software Tools. |
| 9 | Question Paper consist of **FOUR** questions. |
| 10 | Submit your Answer MS-Excel Sheet with file name in the format - **YOURROLLNUMBER\_DMPA\_202022\_IV\_Oct2021** |
| 11 | **Question paper is of 40 Marks.** |

**Question 1 (10 Marks)**

Clean dataset by handling missing values, outliers and non-numeric values and find Principal Components from the data set. Also provide business inferences on the basis of PCA. (Use question 1 database)

**Question 2 (10 Marks)**

Apply suitable Predictive Analytics Technique/s on the data set and generate business insights for decision making. (Use question 2 database)

**Question 3 (10 Marks)**

Using suitable forecasting methods, forecast five values of Sales\_Tyres and Sales\_Engine\_Oil. Also explain why selected method is suitable for the provided data set? (Use question 3 database)

**Question 4 (10 Marks)**

A grocery store chain wants to learn more about grocery buyers purchase patterns. Specifically, they want to know what items are purchased in conjunction with each other, for purposes of display, point of sale special offers, and to eventually implement a real time recommender system to cross-sell items at time of purchase. The data is in the form of customer transactions. On the basis of data analysis using suitable analytical technique, what actionable business inferences you generate for the organization/ store. (Use question 4 database)