**JAIPURIA INSTITUTE OF MANAGEMENT, INDORE**

**PGDM**

**THIRD TRIMESTER (Batch 2021-23)**

**END TERM EXAMINATION, May-2022**

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| Course Name | **Essentials of Business Analytics** | Course Code | **BA301** |
| Max. Time | **2 hours** | Max. Marks | **40** |

**INSTRUCTIONS:**

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| All questions are to be attempted. |
| In each worksheet, question number and answer number are separately specified. |
| Answers are to be written in the provided **End Term Examination Answer Sheet** **ONLY** and screenshots with details are to be pasted in the specified worksheet. |
| All questions are to be answered with justification. (Business Inferences and Decision Making should be explained ) |
| After performing desired operations on the dataset provided required screenshots from RapidMiner ® Studio / MS- Excel are to be pasted at the appropriate worksheet/ location. |
| Question dataset is in question worksheet and answer worksheet contains question also. |
| MS- Excel and/or RapidMiner Studio to be used as Software Tools. |
| Examination is Open Book |
| Question Paper consist of **FOUR** questions. |
| Submit your Answer MS-Excel Sheet with file name in the format - **YOURROLLNUMBER\_EBA\_202123\_III\_May2022 along with End Term Answer Sheet.** |
| Participants are required to bring their Laptop with MS-Excel and RapidMiner ® Studio Installed |
| **Question paper is of 40 Marks.** |

**Question 1 (10 Marks)**

Discuss and implement process of cleaning dataset by handling missing values, outliers and non-numeric values and find Principal Components from the data set, also provide business inferences based on PCA. Discuss importance of data cleaning process in business analytics.

**Question 2 (10 Marks)**

Develop linear regression model using FOUR Liner Regression Model Assumptions. Write complete regression model. Also, explain how robust the model is and perform regression diagnostics?

**Question 3 (10 Marks)**

Apply and analyze suitable forecasting methods for Covid 19 cases to forecast next five values of total\_cases\_per\_million and total\_deaths\_per\_million. Also, explain why selected method is suitable for the provided data set? Give business insights using forecasted values

**Question 4 (10 Marks)**

Develop optimal model for solving the problem having Goal to schedule employees in an IT Organization so that you have sufficient staff at the lowest cost. In this case, all employees are paid at the same rate, so by minimizing the number of employees working each day, you also minimize costs. Each employee works five consecutive days, followed by two days. You are required to mention which optimization technique you have used and why? Mention business insights after developing the optimization model.