**JAIPURIA INSTITUTE OF MANAGEMENT, INDORE**

**PGDM**

**FIRST TRIMESTER (Batch 2022-24)**

**END TERM IMPROVEMENT EXAMINATION, Dec-2022**

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| --- | --- | --- | --- |
| Course Name | Statistics for Management | Course Code | 40501 |
| Max. Time | **2 hours** | Max. Marks | **40** |

**INSTRUCTIONS:**

* *Students can use personal Laptops in examination.*
* *Students can use MS-Excel data analysis tool pack in the examination.*
* *Students should save excel file with their name enrollment no. and section on the desktop.*
* *Students are advised to write their comments in text box along with output in Excel file only.*
* *Each question should be solved in separate excel sheet. Only ONE Excel file per student should be submitted.*

**Question No. 1 (2 + 5 Marks)**

Indian Research Bureau currently received a project from a big FMCG company involved in manufacturing of frozen dessert. The research company collected data on consumption of frozen dessert among 50 customers. Examine (Explore) the data. State the null and alternative hypothesis, use appropriate statistical tool (at α = 0.02) and generate meaningful insights.

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Dessert consumption per year (units)** | 70 | 130 | 150 | 80 | 210 | 232 | 178 | 198 | 200 | 97 |
| **Gender** | F | M | F | F | M | M | M | M | M | F |
|  |  |  |  |  |  |  |  |  |  |  |
| **Dessert consumption per year (units)** | 31 | 381 | 201 | 177 | 168 | 167 | 169 | 100 | 120 | 201 |
| **Gender** | F | M | M | F | M | M | F | F | F | M |
|  |  |  |  |  |  |  |  |  |  |  |
| **Dessert consumption per year (units)** | 151 | 167 | 90 | 108 | 131 | 190 | 128 | 164 | 189 | 203 |
| **Gender** | M | M | F | F | F | M | F | F | M | M |
|  |  |  |  |  |  |  |  |  |  |  |
| **Dessert consumption per year (units)** | 201 | 47 | 291 | 197 | 102 | 130 | 145 | 186 | 139 | 141 |
| **Gender** | M | F | M | M | F | F | F | M | F | F |
|  |  |  |  |  |  |  |  |  |  |  |
| **Dessert consumption per year (units)** | 189 | 131 | 176 | 201 | 50 | 68 | 103 | 108 | 200 | 301 |
| **Gender** | M | M | M | F | F | F | F | F | M | M |

**Questions.2 (3 + 5 Marks)**

“True Value” is a chain of preowned cars in Madhya Pradesh which purchases old cars, Repairs them and resales them to customers across Madhya Pradesh. The chain operates from Five major cities i. e. Indore, Bhopal, Jabalpur, Gwalior and Ujjain. The owner was worried about average revamping time (days) for used cars in various branches. He appointed a research firm which collected following data for one particular model of the car i.e. Maruti Suzuki Wagon - R.

Examine (Explore) the data. State the null and alternative hypothesis, use appropriate statistical tool (at α = 0.05) and generate meaningful management insights.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Location** | **Car Revamping Time (Days)** | | | | | | | | | | | | | | | | |
| Indore | 10 | 12 | 19 | 20 | 9 | 10 | 18 | 12 | 12 | 16 | 13 | 16 | 12 | 10 |  |  |  |
| Bhopal | 20 | 23 | 24 | 21 | 20 | 18 | 18 | 12 | 10 | 23 | 25 | 21 | 19 | 17 | 13 | 20 |  |
| Jabalpur | 25 | 26 | 23 | 21 | 29 | 18 | 27 | 25 | 21 | 20 | 23 | 19 | 18 | 19 | 17 | 20 | 23 |
| Gwalior | 18 | 19 | 21 | 29 | 18 | 17 | 20 | 27 | 21 | 19 | 18 | 17 | 16 | 13 | 18 | 19 |  |
| Ujjain | 15 | 16 | 13 | 17 | 21 | 18 | 19 | 13 | 17 | 18 | 13 | 18 | 23 | 19 | 17 |  |  |

**Question No. 3 (09 Marks)**

“Anushka Kohli” was concerned about her portfolio of NIFTY 200 stocks. Currently she only has stocks of Dabur India Limited in her portfolio. She wishes to diversify her portfolio and so, she has shortlisted two stocks, Jindal Steel and Power Limited (JSPL) and Hindustan Unilever Limited (HUL). However, due to financial constraints, currently she can invest in one company’s stock only. Apply relevant conceptual framework to Ms. Anushka Kohli’s data and generate meaningful insights.

*(Use Data sheet “Anushka Kohli’s Portfllio” from attached Excel File)*

**Questions. 4 (16 Marks)**

“Indian Products Company (IPC)” is an Indian multinational FMCG goods manufacturing company. The company sales products in Indian subcontinent, Oriental countries and Europe. The company has adopted three promotion mix elements for increase of sales; Advertising, Personal Selling and Event Sponsorship. The data for last eleven years is presented in enclosed excel sheet. However, the company has a dilemma as the culture and orientation of the target audiences across all marketing regions is very different. State the null and alternative hypothesis, apply relevant concepts and generate meaningful management insights. (Assume that all other conditions in the market remained unchanged)

*(Use Data sheet “*Indian Products Company*” from attached Excel File)*