**POORNIMA UNIVERSITY, JAIPUR.**

**END SEMESTER EXAMINATION, April 2023**

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|  | **4BC2104** | Roll No. | Total Printed Pages: **2** |
| **4BC2104** |  |
| BCA II Year IV Semester (Back) End Semester Examination, April 2023  **(AIPA)** | |
| **BAP04106.1 / BAP04107.2 : Data Visualization** | | | |

# Max. Time: **3** Hours. Max. Marks: **60**

Min. Passing Marks: **21**

Attempt **five** questions selecting one question from each Unit. There is internal choice from Unit I to Unit V. Marks of each question or its parts are indicated against each question / parts. Draw neat sketches wherever necessary to illustrate the answer. Assume missing data suitably (if any) and clearly indicate the same in the answer.

Use of following supporting material is permitted during examination for this subject.

# **1.----------------------------------------------** **2.-----------------------------------------**

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|  |  | **UNIT-I (CO1)** | **Marks** | **Bloom Level** |
| **Q.1** | **(a)** | Elaborate graphics of grammar with its features. Provide example using any graph. | **(8)** | **Knowing**  **And**  **remembering** |
|  |  |  |  |  |
|  | **(b)** | .” A picture is worth thousand words”. Explain this term in context of data visualization. | **(4)** | **Knowing**  **And**  **remembering** |
|  |  | **OR** |  |  |
| **Q.2** | **(a)** | Explain Quantitative and Qualitative data visualization techniques with example. | **(5+4)** | **Analysing** |
|  |  |  |  |  |
|  | **(b)** | What criteria should be consider when want to choose a graph for a dataset? Provide answer with proper example. | **(3)** | **Knowing**  **And**  **remembering** |
|  |  | **UNIT-II (CO2)** |  |  |
| **Q.3** |  | Create a Scatter Graph having :   1. Legend 2. Color of different parameters 3. Title 4. Axis  |  |  | | --- | --- | | Diameter | Height | | 4.30 | 9 | | 14.5 | 7 | | 90.8 | 100.7 | | 5.6 | 2.4 | | 12.4 | 11.7 | | **(12)** | **Apply** |
|  |  |  |  |  |
|  |  | **OR** |  |  |
|  |  |  |  |  |
| **Q.4** |  | Prepare a Bar Chart for Following data. Bar Must contain   1. Customized width and height of bar 2. Labels of classes 3. Title 4. Axis X and Y  |  |  | | --- | --- | | Types of Four Wheelers | Number of Four Wheelers | | Car | 50 | | Jeep | 90 | | Bus | 57 | | Cherry | 9 | | **(4x3)** | **Understanding** |
|  |  |  |  |  |
|  |  | **UNIT-III (CO3)** |  |  |
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|  |  |  |  |  |
| **Q.5** | **(a)** | Why we find correlation of parameter of dataset? Which graph we use to represent correlation between parameter of dataset. Provide Graph for same. | **(6)** | **Applying** |
|  |  |  |  |  |
|  | **(b)** | Mention the requirement of network graph. Suggest a proper network graph for your own dataset. | **(6)** | **Applying** |
|  |  |  |  |  |
|  |  | **OR** |  |  |
|  |  |  |  |  |
| **Q.6** | **(a)** | What is outlier in Dataset? How to detect outlier in dataset with visualization. Prepare proper graph to justify your answer. | **(6)** | **applying** |
|  |  |  |  |  |
|  | **(b)** | Differentiate between heat map and tree map with suitable examples. | **(6)** | **Understanding** |
|  |  |  |  |  |
|  |  | **UNIT-IV (CO4)** |  |  |
|  |  |  |  |  |
| **Q.7** | **(a)** | Elaborate the Dendogram? Suggest scenario where we can apply dendogram. Prepare dendogram for your suggested scenario, | **(6)** | **Applying** |
|  |  |  |  |  |
|  | **(b)** | Mention the conditions when we require to plot scree plot. Elaborate its features. | **(6)** | **Applying** |
|  |  |  |  |  |
|  |  | **OR** |  |  |
|  |  |  |  |  |
| **Q.8** | **(a)** | What is Quartile-Quartile Graph? How it useful in Data Science. Prepare a QQ plot to justify your answer. | **(6)** | **Creating** |
|  |  |  |  |  |
|  | **(b)** | Elaborate Percentile –Percentile Graph. How it is different from Q-Q plot, | **(6)** | **applying** |
|  |  |  |  |  |
|  |  | **UNIT V (CO5)** |  |  |
|  |  |  |  |  |
| **Q.9** | **(a)** | Why annotations are useful when preparing a graph? How can swap X and Y axis. | **(6)** | **Evaluating** |
|  |  |  |  |  |
|  | **(b)** | Explain how to set tick marks in a graph. Suggest proper code for same. | **(6)** | **Evaluating** |
|  |  |  |  |  |
|  |  | **OR** |  |  |
|  |  |  |  |  |
| **Q.10** |  | Describe following :-   1. Changing Legend 2. Theme of Graph 3. Remove the legend | **(12)** | **Knowing**  **And**  **remembering** |