

**Sl. No. : 7989**

**Unique Paper Code: 2183012008**

**Name of the Course: Environmental Sustainability and Data Visualization**

**Name of the Programme: B.Sc. Environmental Sciences**

**Discipline Specific Elective – 17**

**Semester – VIII**

**Duration: 2 Hours**

**Maximum Marks: 60**

**Instructions for Candidates**

Write your Roll No. on the top immediately upon receipt of this question paper. Answer any **four** questions. All questions carry equal marks.

1. (a) Explain the relevance of environmental sustainability, data visualization, environmental data source, data analysis software, visualization software. **(10)**  
(b) Explain the role of data visualization in communicating environmental sustainability challenges. **(5)**
2. Differentiate between the following: **(5×3=15)**  
(a) Excel and R for environmental data analysis  
(b) Tableau and Power BI for data visualization  
(c) Line chart and heat map
3. Write short notes on the following: **(3¼×4=15)**  
(a) Environmental data sources  
(b) Basic statistical concepts in data visualization  
(c) Case studies in sustainability visualization  
(d) Communicating data to different audiences
4. (a) Explain the causes of climate change and the types of climate data used in sustainability studies. **(7)**  
(b) Discuss the use of line charts and heat maps for visualizing temperature and carbon emission data. **(8)**
5. (a) Explain resource depletion with reference to water, oil and minerals. **(7)**  
(b) Discuss the use of bar charts and scatter plots for visualizing resource depletion data. **(8)**
6. Design a data visualization strategy for communicating environmental sustainability by integrating climate change, resource depletion, pollution, biodiversity loss, industrial sustainability and audience-specific communication principles. **(15)**