

M.Sc. - I (Environmental Science) CBCS Pattern Semester-I  
**PSENV T01 / PSCENV T01-Paper-I : Environmental Chemistry**

P. Pages : 1

Time : Three Hours



**GUG/W/23/11158**

Max. Marks : 80

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- Notes : 1. All questions are compulsory and carry equal marks.  
2. Illustrate the answers with suitable diagrams and examples.

1. Describe basic concept of colorimetry. Explain Lambert's law and Beer's law. **16**
- OR**
- a) Discuss principles of colloidal chemistry. Explain adsorption and absorption briefly. **8**
- b) Explain chemical potential and chemical equilibria. **8**
2. Discuss alkalinity and acidity in detail. **16**
- OR**
- a) Explain buffering in water system. **8**
- b) Describe oxidation and reduction processes. **8**
3. Discuss physical characteristics of water. **16**
- OR**
- a) Explain hydrological cycle. **8**
- b) Describe ionic product of water. **8**
4. Explain physical properties of soil. **16**
- OR**
- a) Discuss soil profile with suitable diagram. **8**
- b) Explain soil formation processes. **8**
5. a) Explain molecular weight and equivalent weight. **4x4**  
b) Comment on green chemistry for sustainable future. **=16**  
c) Explain buffer solutions.  
d) Describe biofertilizers with suitable example.

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