



**SECTION – II**

- Q.5 a)** Explain the toxic effect of **(05)**  
    i) Arsenic  
    ii) Cadmium
- b)** What is ionization? Explain the different factors that affect the degree of ionization. **(05)**
- c)** Explain preparation and properties of biodiesel **(04)**
- Q.6 a)** What is degree of hardness? How it is expressed? State the relation of the system used to express the hardness of water. **(05)**
- b)** What is the principle used to remove hardness of water? **(04)**
- c)** How many litres of 20% NaCl solution will be required to regenerate a zeolite bed which has capacity of softening 5000 liters of water containing 300 mg CaCO<sub>3</sub> equivalent hardness per liter? **(04)**
- Q.7 a)** What are strong electrolytes and weak electrolytes? Give one example of each. **(05)**
- b)** Explain the mechanism of electrolysis. **(04)**
- c)** Write a note on Lead-acid storage cell. **(04)**
- Q.8 a)** Explain the origin, composition and refining of petroleum. **(05)**
- b)** Explain the importance of ultimate analysis of coal. **(04)**
- c)** Write a note on Bomb Calorimeter. **(04)**

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