

III B. Tech II Semester Supplementary Examinations, November/December – 2016**ENVIRONMENTAL ENGINEERING – I**

(Civil Engineering)

Time: 3 hours

Max. Marks: 70

 Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)
2. Answering the question in **Part-A** is compulsory3. Answer any **THREE** Questions from **Part-B**

PART -A

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|---|----|---|------|
| 1 | a) | What is meant by safe and wholesome water? | [3M] |
| | b) | With a neat sketch, describe an artesian spring. | [4M] |
| | c) | Write the drinking water standards for Nitrates and Iron. | [3M] |
| | d) | What are pressure filters? | [4M] |
| | e) | How is temporary hardness removed? | [4M] |
| | f) | Write the purpose of air valve and scour valve. | [4M] |

PART -B

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|---|----|--|------|
| 2 | a) | Write the role of an environmental engineer. | [6M] |
| | b) | What are the factors affecting water demand? | [6M] |
| | c) | The population of a certain town was 40,000 in the year 1950 and 50,000 in 1960. Determine its population in the year 1970 by Annual rate of Increase method. | [4M] |
| 3 | a) | What are wells? How are they classified? | [4M] |
| | b) | What are the operations involved in laying of pipes? | [8M] |
| | c) | Write the design considerations for intake structures. | [4M] |
| 4 | a) | Define the terms Alkalinity and Acidity. Write the importance of determining them in public water supply. | [8M] |
| | b) | Explain the method of estimation of solids in water – total solids, dissolved solids and settleable solids. | [8M] |
| 5 | a) | Explain the construction of Rapid Sand Filter (Gravity type). | [8M] |
| | b) | Give the Flow diagram of Water Treatment plant and write the principles involved at each stage. | [8M] |
| 6 | a) | Describe Aeration methods for the removal of objectionable dissolved gases. | [8M] |
| | b) | For disinfecting water supply, it is required to treat 500,000litres of daily supply with 0.5ppm of chlorine. If the disinfectant is available in the form of bleaching powder containing 30% of available chlorine, calculate the amount of bleaching powder required to treat the daily flow of water. | [8M] |
| 7 | a) | With neat sketch describe the Grid Iron system of distribution. Mention its advantages and disadvantages. | [8M] |
| | b) | Write about use of water meters, their classification and merits and demerits of using meters. | [8M] |

