**TU/CODL**

**TEZPUR UNIVERSITY**

**SEMESTER END EXAMINATION (AUTUMN), 2017**

**DEM 103: URBAN WATER MANAGEMENT**

Time: **3 Hours** Total Marks: **70**

*The figures in the right-hand margin indicate marks for the individual question.*

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1. Give two examples of each of the following **1x4=4**
2. water-related diseases
3. water-based diseases
4. water-borne diseases
5. water-scarce diseases

2. Write true or false **1x6=6**

i. The Urban Heat Island Effect (UHI) is a phenomenon whereby the air over the rural areas results is slightly warmer compared to surrounding urban areas.

ii. Increased urban water demand generates pressure on existing infrastructure and the problem is more severe in developing countries.

iii. Solid waste management also includes agricultural waste.

iv. In the osmosis process, demineralization water is produced by forcing water through semi permeable membranes at high pressure.

v. Agricultural runoff is an example of point source of pollution.

vi. Continuous sources introduce contaminants to streams for extended periods of time

3. Explain the factors that aggravate water scarcity. **5**

4. What is the effect of urbanization on surface run off? **5**

5. What are point and non-point source of pollution? **5**

6. What is Greywater and Blackwater? **5**

7. What is rain water harvesting? What are the types of rain water harvesting? Discuss its need and benefits. **10**

8.Describe briefly the history of water supply system. **10**

9. Discuss the classification criteria and regulatory norms of 3Rs for a sound material-cycle society. **10**

10**.** What is urban flood? Discuss the cause and counter measures of urban flooding. **10**

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