

MUZAFFARPUR INSTITUTE OF TECHNOLOGY
MUZAFFARPUR - 842003

Mid Semester Exam 2018

Sub: Environmental Engineering-I

F.M: 20

Time: 2 Hours

Answer four questions only. Question No. 1 Compulsory. All questions have equal marks.

Q 1. Mark the most correct choice Attempts any five:

1. High nitrate concentration in water can affect
(a) Tooth enamel (b) Heart (C) Infants (d) Taste
2. Turbidity exceeding 1 NTU may interfere with
(a) Softening (b) Fluoridation (c) Stabilization (d) Disinfection
3. Normally, the pH of surface water and of ground water ranges from
(a) 9-10.5 (b) 6.5-8.5 (c) 1.5 to 4.0 (d) None of these
4. If same water is low in natural alkalinity, its alkalinity can be increased by using
(a) Alum (b) Caustic (c) Acetic acid (d) Lime
5. In a sedimentation basin, detention time is the time that a parcel of water stays in the basin
(a) Actual (b) Calculated (c) Flocculation (d) Mixing
6. Under normal conditions coagulation occurs in
(a) Seconds (b) Minutes (c) Hours (d) Days
7. Performance of a sedimentation basin depends greatly upon the
(a) Method of removing sludge (b) Biological Treatment (c) Overflow rate (d) Filtration

Q 2. (a). Design a rectangular sedimentation tank to treat a flow of 4ML/d as to provide a detention time of 3hrs and without exceeding a flow velocity of 1.5mm/s

(b). What is the action of coagulants added to raw water ?

Q 3. (a). What are water-borne diseases and how can they be prevented ?

(b). What is the significance of phosphorus and nitrogen in water quality ?

Q 4. (a). What do you mean by the term 'pen capita demand ? How is it estimated ?

(b). What are the objectives of water supply system ? Discuss briefly.

Q 5. State the criteria commonly employed in the design of plain sedimentation tanks used at water treatment plants.

Q 6. Write short notes an any four of the following:

- (a) Taste and odour control.
- (b) Importance of turbidity in water.
- (c) Fire demand of water.
- (d) Variations in water demand.
- (e) Chlorine demand curve.
- (f) Water softening method.