| Seat No.: | Enrolment No. |
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GUJARAT TECHNOLOGICAL UNIVERSITY

ME - SEMESTER IV (NEW) - EXAMINATION - SUMMER - 2017

| Subject Name: Anaerobic Biotechnologies | | Code: 2741801 Date: 03/0 | Date: 03/05/2017 Total Marks: 70 | |
|---|------------|---|-----------------------------------|--|
| | | :30PM-05:00PM | | |
| | 1. 2. | Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks. | | |
| Q.1 | (a) | Write the difference between High Rate and Low Rate Anaerobic Treatment. Write detail classification of High Rate Anaerobic Reactors. | 07 | |
| | (b) | Write a short note on Upflow Anaerobic Sludge Blanket Reactor with a neat sketch. | 07 | |
| Q.2 | (a) | Explain role of acid forming and methane forming bacteria in anaerobic treatment. | 07 | |
| | (b) | Explain following environmental requirements for anaerobic treatment: (i) Temperature (ii) C/N ratio | 07 | |
| | | OR | | |
| | (b) | | 07 | |
| Q.3 | (a) | Write a short note on application of BMP test. | 07 | |
| ~ | (b) | | 07 | |
| | . , | OR | | |
| Q.3 | (a) | Write a short note on Anaerobic Toxicity Assay test. | 07 | |
| | (b) | Enlist the different treatability parameters for anaerobic treatment and explain in detail. | 07 | |
| Q.4 | (a) | (i) Nutrient content | 07 | |
| | | (ii) Presence of toxic substances | | |
| | (b) | at STP" | 07 | |
| 0.4 | (-) | OR | 07 | |
| Q.4 | (a) | Enlist the parameters indicating the unbalanced condition in anaerobic reactors. Explain any one. | 07 | |
| | (b) | · · · · · · · · · · · · · · · · · · · | 07 | |
| | | taken for their correction. | | |
| Q.5 | (a) | Differentiate between Expanded Bed Reactor and Fluidized Bed | 07 | |

Reactor.

(b) Give the difference between Upflow Anaerobic filter and downflow **07** anaerobic filter.

OR

- Q.5 (a) Explain the pH based biphasic anaerobic digestion 07
 - **(b)** Why is mixing necessary in anaerobic digestion? Enlist the methods **07** used for mixing in anaerobic digester.
