Seat No.:	Enrolment No
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## GUJARAT TECHNOLOGICAL UNIVERSITY

ME SEMESTER II EXAMINATION – SUMMER 2017

Subject Code: 2724009 Date:31/05/2017 **Subject Name: Cleaner Production in Rubber Industries** Time: 02:30 PM to 05:00 PM **Total Marks: 70 Instructions:** 1. Attempt all questions. 2. Make suitable assumptions wherever necessary. 3. Figures to the right indicate full marks. **Q.1** Discuss the six steps of Cleaner Production methodology to implement Cleaner Production in 14 rubber industry. Mention the check lists of good housekeeping. Explain it. 07 O.2 (a) Write about the internal barriers of Cleaner Production.  $\mathbf{Q.2}$  (b) 07 OR Discuss in detail about the difference between Cleaner Production and Cleaner Technology. 0.2 **(b)** 07 **Q.3** (a) Discuss in detail about the major environmental issues of Natural Rubber (NR) processing 07 sector. 0.3 Answer the following **(b)** Explain the processing of rubber sheet. 04 Define the given terms:(i) Field Latex (ii) Cuplum (iii) Treelace ii 03 Discuss in detail about the identification of CP potential in Natural Rubber industries. Q.3 (a) 07 Q.3 Answer the following **(b)** Explain the processing of crepe rubber. i 04 What do you mean by TSC and DRC respectively? ii 03 What do you mean by activated sludge? Write down the working steps of activated sludge 07 0.4 (a) system. Answer the following **Q.4 (b)** Write down the advantages and disadvantages of anaerobic process over aerobic process. 04 Which unit operations are involved in treating tertiary waste water? ii 03 OR Explain the given features with respect to activated sludge process: **07** (a) (i) Solid Retention Time(ii) Sludge Bulking Answer the following 0.4 **(b)** Write a short note on types of microbial metabolism used in biological treatment of waste water. 04 ii Write down the purpose of the tertiary waste water treatment. 03 Q.5(a) With schematic diagram, explain the working of Upflow Anaerobic Sludge Blanket Reactor 07 (UASBR). Answer the following **Q.5 (b)** Write a short note on Sequential Batch Reactor (SBR). 04 ii List out the typical issues related to the pond technology. 03

Discuss the typical flow chart required for Upflow Anaerobic Sludge Blanket type waste water

Q.5

Q.5

**(b)** 

treatment plant. Answer the following 07

- 04 i 03 ii