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## GUJARAT TECHNOLOGICAL UNIVERSITY

BE – SEMESTER V • EXAMINATION – WINTER - 2012

Date: 17-01-2013 Subject code: 1500603 **Subject Name: Environmental Engineering** 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** (a) Explain different phases of microbial growth and draw a neat sketch of 07 microbial growth. **(b)** Enlist different chemical characteristics of water and discuss about acidity 07 with their environmental significance. **Q.2** (a) What are biodegradable and non biodegradable organics? Differentiate 07 with sketch I<sup>st</sup> stage and II<sup>nd</sup> stage BOD. (b) Why BOD is determined for 5 days at 20°C. What will be BOD<sub>5</sub> at 20°C 07 if BOD<sub>3</sub> at  $35^{\circ}$ C is 200 mg/l.  $K_{D(20)} = 0.10$ . **(b)** How is pH measured? Calculate how much acidic is pH 3 compared to pH 07 Q.3 (a) What do you mean by temporary and permanent hardness? Describe the 07 method of determination of total hardness in the laboratory. **(b)** Describe different systems of plumbing with their sketches. 07 **Q.3** (a) What do you mean by self purification? Explain with the sketch the 07 oxygen sag curve. (b) Discuss different types of traps used in house drainage system indicating 07 their locations. **Q.4** (a) Discuss briefly (a) Drainage plan of building (b) Incineration 07 (b) Describe the all functional elements with flow diagram of solid waste **07** management. OR (a) Discuss the composition of municipal solid waste and explain their 07 **Q.4** methods of collection. **Q.4** (b) Discuss the merits and demerits of sanitary land filling and method of 07 composting of solid waste disposal. Q.5 (a) What are primary and secondary air pollutants? Discuss the effects of 07 carbon mono oxide on human beings. (b) Enumerate different air pollution control devices and explain the 07 functioning of cyclone precipitator. (a) Write short notes on (a) EIA (b) Impurities in water Q.5 07

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(b) How is noise measured? Describe the methods of controlling noise

pollution.

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