

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-V • EXAMINATION – WINTER • 2014****Subject Code: 153503****Date: 01 -12-2014****Subject Name: Basic of Fuels****Time: 10.30 am - 01.00 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)** The composition of waste from Tin Tin Industry is $C_{50}H_{100}O_{40}N$. If Tin Tin industry goes for an anaerobic treatment, how much CH_4 can be generated per ton of waste inserted in treatment?
($CaHbOcNd+4a-b-2c+3d/4 * H_2O \rightarrow 4a+b-2C-3d/8CH_4+4a-b+2C+3d/8 CO_2 + dNH_3$) **07**
- (b)** Enlist type of coal and explain Bituminous coal in detail. **07**
- Q.2 (a)** How can we use proximity and ultimate analysis for estimate fuel quality? **07**
- (b)** Explain catalytic cracking. **07**
- OR**
- (b)** Explain atmospheric distillation and vacuum distillation process. **07**
- Q.3 (a)** Write a short note on Jet fuel and Diesel fuel. **07**
- (b)** How Ethanol can be produced explain? **07**
- OR**
- Q.3 (a)** How the oil spillage can be responsible for adverse impact on environment? **07**
- (b)** Write short note on Biodiesel. **07**
- Q.4 (a)** Explain Lurgi process of coal gasification. **07**
- (b)** Draw and explain flow sheet of municipal waste to fuel quality. **07**
- OR**
- Q.4 (a)** Explain characteristics of Biogas. **07**
- (b)** How can we classify municipal waste. **07**
- Q.5 (a)** Explain 1)flash point and fire point 2) pour point and cloud point **07**
- (b)** Explain 1) Cetane number 2) Aniline point **07**
- OR**
- Q.5 (a)** Explain oil exploration from land. **07**
- (b)** How does Basics of fuel can be useful in industrial decision making. **07**
