GUJARAT TECHNOLOGICAL UNIVERSITY BE - SEMESTER-VII(NEW) • EXAMINATION - WINTER 2016

| Subject Code:2170409 Subject Name:Environmental Biotechnology(Department Elective - II) Time:10.30 AM to 1.00 PM Instructions: 1. Attempt all questions. | | | | |
|--|------------|---|----------|--|
| | | Make suitable assumptions wherever necessary. | | |
| Q.1 | (a) (b) | With the help of flow chart, explain the process of methanogenesis. What is the role of transgenic plant in Mercury and Aluminum detoxification? | 07 07 | |
| Q.2 | (a) | Explain the role of GEMs in detecting polyaromatic hydrocarbons, treating oil spills and sequestering heavy metals. | 07 | |
| | (b) | Narrate the SPIC strategies for biohydrolysis and phenol disease treatment. OR | 07 | |
| | (b) | What is Bioremediation? Explain the role of naturally occurring micro organisms in it. | 07 | |
| Q.3 | (a) | Give an account of the use of solar energy and geothermal energy for saving the environment. | 07 | |
| | (b) | Write a short note on: Cellulose as a source of energy. | 07 | |
| 0.1 | (.) | OR | 07 | |
| Q.3 | (a) (b) | Explain with neat sketch the production of biogas. Give the significance of Natural Gas as an energy source. How does producer gas help as a source? | 07 07 | |
| Q.4 | (a) (b) | Discuss with neat sketch: Plant biology for heavy metal accumulation. Suggest the ways to improve soil fertility with the use of microbes. OR | 07 07 | |
| Q.4 | (a) (b) | What are the methods of phytoremediation? Briefly explain it with examples. Give a detail account of sanitary landfilling. Comment on various methods. | 07 07 | |
| Q.5 | (a) (b) | Justify the statement: "Micropropogation help in reforestation of land". With suitable equations, explain Bacterial metabolisms in wastewater treatment. | 07 07 | |
| Q.5 | (a) | OR Briefly Discuss: Aerobic treatment of wastewater. | 07 | |
| ٧.٠ | (b) | What are the strategies to treat industrial wastewater? Give an overview. | 07 | |