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**GANDHI INSTITUTE OF ENGINEERING AND TECHNOLOGY UNIVERSITY, ODISHA, GUNUPUR
(GIET UNIVERSITY)**



Ph.D. (First Semester-Winter) Examinations, June - 2025

**23WPPEBO1011 – Advanced Plant Sciences
(Botany)**

Time: 3 hrs

Maximum: 70 Marks

The figures in the right hand margin indicate marks.

Answer ANY FIVE Questions.

(14 x 5 = 70 Marks) Marks

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| 1.a. Define sustainability? How sustainable utilization of plant resources can be done? | 8 |
| b. Describe on conventional and non-conventional utilization of various energy sources? | 6 |
| 2. Write in details on economic importance of fungi? | 14 |
| 3.a. Explain Monod equation and write on limiting factors of bacterial culture? | 7 |
| b. What are antibiotics? Write on mode of actions of antibacterial antibiotics? | 7 |
| 4. Write on the phytochemicals that can be utilized for development of antifungal medicines? | 14 |
| 5.a. Give an account of plants as source of fibres? | 7 |
| b. What is ecotoxicology and write on its impact on trophic levels of ecosystem? | 7 |
| 6.a. Describe on the impacts of global climate change? | 7 |
| b. Explain briefly on secondary treatment of water? | 7 |
| 7. Write on role of nanobiotechnology in pollution abatements? | 14 |
| 8.a. Illustrate on various biotic and abiotic stresses to plants and their impacts? | 7 |
| b. Describe briefly on molecular farming? | 7 |

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