JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST-3 EXAMINATION, MAY- JUNE 2016

BT DD /M.Tech (Biotech)

COURSE CODE: 14M11BT211   MAX. MARKS: 35

COURSE NAME: Industrial Biotechnology

COURSE CREDITS: 3   MAX. TIME: 2 HRS

Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.

1. What are the advantages of using solvent-free systems for enzymatic reactions? What are the basic processes used in crude oil refining and discuss about degumming of oils?(5 M)

2. How to assess the pretreatment technique in case of lignocellulosic bioethanol production process? Mention the enzyme- and substrate-related factors which influence the enzymatic hydrolysis of cellulose? (5 M)

3. Write about the principle rationale of using enzyme technology in animal feeds? Write about the role of phytase in animal nutrition? (5 M)

4. Write about the xylanase-aided bleaching and delignified laccase-mediator system (LMS) for direct bleaching steps in pulp and paper industries? Mention the usual steps and its purpose's in leather manufacturing? (5 M)

5. Discuss about the "Compatible-solute" and "Salt-in" strategies used by the halophiles for dealing the high salt-environments? What are the advantages of producing PHA by halophiles? (5 M)

6. Discuss in detail about the strategies used for protein design? Write about the concept of "Industrial Systems Biology"? (5 M)

7. (a) Define the following terms used in case of Industrial systems Biology (3 M)

    (i) X-omics (ii) Transcriptomics: (iii) Metagenomics

    (b) Write about the biomimicry concept of "Gecko Adhesives". (2 M)

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