

**M.TECH. FOOD TECHNOLOGY & BIOCHEMICAL ENGINEERING 1<sup>st</sup>  
YEAR 2<sup>ND</sup> SEMESTER EXAMINATION 2019**

**Advanced Enzyme Engineering**

Full Marks: 100

Time: 3hrs

Part-II

GROUP-A

Answer any one question

1×10 = 10

1. What are the different types of HFCS? Briefly describe on the production and uses of HFCS.
2. What are the advantages and disadvantages of nanoparticles for enzyme immobilization.

GROUP-B

Answer any two questions

2×20 = 40

3. Define biosensor. What are the different components of a biosensor (with schematic diagram)? Write the working principle of biosensor. Classify biosensor based on the principle involved. What are the different types of biosensors? Briefly mention applications of biosensors in various fields.  $4+3+3+5+5 = 20$
4. Define biotransformation. Briefly mention the transformation methods of steroids and sterols. Briefly describe the transformation methods of non-steroid compounds. What are the advantages and limitations of bio transformations?  $2+5+8+5 = 20$
5. Briefly describe the applications of enzymes in organic synthesis. Mention new challenges in this field. Briefly describe the selected biotransformation reactions in industrial scale.  $6+ 4+12 = 20$
6. Write the applications of enzymes in protein modification and application of modified proteins in food product development. How change in characteristics of proteins on degree on hydrolysis?  $12+8 = 20$