ANDHRA UNIVERSITY
TRANS-DISCIPLINARY RESEARCH HUB

ADVANCES IN BIOTECHNOLOGY

1. Engineering of herbicide tolerance in plants, production of disease free resitatnt plants by gene transfer; Development of insect resistant plants

2. Production of transgenic animals - mice, sheep and fish. Molecular pharming and animal cloning. Livestock improvement.

3. Bioremediation- solid and liquid waste treatment. Biomass and energyproduction from waste.

4. Air pollution and its control. Water pollution and its control. Microbiologyof waste water treatment.

5. Chromatin Packing of DNA in to chromatin, role of histones and non-histone proteins, nucleosome organization. Gene amplification

6. Mitochondrial & plastid genomes and genes. Gene transcription, RNA modification, splicing, translation and post translation modifications.

7. Benefits of genome sequencing, outlines of genome sequencing in *Arabidopsis*, rice and Human being.

8. Importance of double stranded RNA, gene silencing and its importance, knockdown process technological application of RNAi in medicine and biotechnology.

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MODEL PAPER

ADVANCES IN BIOTECHNOLOGY

Time: 3 hours **Max. Marks: 5×20=100**

1. Write an account on Engineering of herbicide tolerance in plants
2. Briefly explain Production of transgenic animals
3. Explain about Bioremediation- solid and liquid waste treatment.
4. Describe Air pollution and its control
5. Explain role of histones and non-histone proteins in nucleosome organization
6. Explain Gene transcription
7. Describe in detail about Benefits of genome sequencing
8. Write about gene silencing and its importance