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B.Sc GENETICS III YEAR

SEMESTER-V

DISCIPLINE SPECIFIC ELECTIVE (DSE)

DSE-(B)

PAPER: ANIMAL CELL TECHNOLOGY & ANIMAL GENETICS

QUESTION BANK FOR PRACTICALS

Total= 25M **Duration= 2 hours** 1x10=10M I. MAJOR PRACTICALS 1. 'Cell freezing and thawing 2. Passaging of suspension and adherent cells 3. Cell viability assay 4. Plating of cells in microtiter plate at defined density 1x5 = 5MII. MINOR PRACTICALS

- 1. Preparation of cell culture medium
- 2. Sterilization methods in cell culture
- 3. Trypan blue exclusion test for cell viability analysis
- 4. Cell counting

III. SPOTTERS / EXHIBITS

5x1 = 5M

- 1. Laminar air flow
- 2. Cell culture incubator
- 3. Liquid nitrogen container
- 4. Microscopy images of animal cell culture
- 5. Flow chart for cryopreservation
- 6. Schematic representation of a vector with cloned insert
- 7. Nuclear transfer cloning
- 8. Isolation of bone marrow stem cells
- 9. Flow chart of southern blotting
- 10. Schematic representation of western blotting technique

IV. RECORD & VIVA

5M

epartment of Genetics iniversity Hyderabad-C







B.Sc GENETICS III YEAR SEMESTER-V DISCIPLINE SPECIFIC COURSE (DSC) PAPER: BIOSTATISTICS & BIOINFORMATICS

QUESTION BANK FOR PRACTICALS

Duration= 2 hours

Total= 25M

I. MAJOR PRACTICALS

1x10=10M

- 1. Problems on measures of central tendency (mean, median and mode)
- 2. Problems on measures of dispersion standard deviation, variance, standard error, coefficient of variation for a variable
- 3. Problems on hypothesis testing using Z test, t-test and Chi-squared test
- 4. Problems on probability and probability distributions
- 5. Sequence retrieval from Genbank/ENA
- 6. Sequence retrieval from Swissprot

II. MINOR PRACTICALS

1x5 = 5M

- 1. Construction of bar diagram, pie diagram, line diagram for a data
- 2. Construction of histogram and box plot for a data
- 3. Exploring web portals NCBI, EBI & ExPASy
- 4. Literature search through Pubmed and Pubmed Central
- 5. Pairwise homology search by BLAST and FASTA

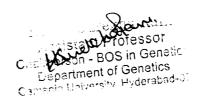
III. SPOTTERS / EXHIBITS

5x1 = 5M

- 1. Line diagram, bar diagram & pie diagrams
- 2. Histogram, frequency polygon & frequency curve
- 3. Normal Probable curve
- 4. GenBank
- 5. DDBJ
- 6. SWISS-PROT
- 7. PROSITE
- 8. PIR
- 9. BLAST
- 10. Pairwise alignment
- 11. Multiple sequence alignment
- 12. PAM and BLOSUM
- 13. Phylogenetic tree

IV. RECORD & VIVA

5M







B.Sc GENETICS III YEAR

SEMESTER-V

DISCIPLINE SPECIFIC ELECTIVE (DSE- 3E)

DSE-3E (A)

PAPER: PLANT GENETICS AND BIOTECHNOLOGY

QUESTION BANK FOR PRACTICALS

Duration= 2 hours

Total= 25M

I. MAJOR PRACTICALS

1x10=10M

- 1. Preparation of MS Media
- 2. Establishment of Primary Cell Culture
- 3. Clonal Propagation from axillary buds
- 4. Histological studies of embryos at different stages
- 5. Preparation of synthetic seeds from somatic embryos

II. MINOR PRACTICALS

1x5 = 5M

- 1. Introduction to plant tissue culture laboratory equipment
- 2. Explain various sterilization methods used in tissue Culture
- 3. Explain Callus induction
- 4. Explain seed testing for germination
- 5. Describe the isolation of explants

III. SPOTTERS / EXHIBITS

5x1 = 5M

- 1. Chloroplast genome
- 2. Mitochondrial genome
- 3. Somatic embryogenesis
- 4. Callus
- 5. Culture media
- 6. Explant
- 7. Cell suspension cultures
- 8. Autoclave
- 9. Laminar air flow
- 10. Cell differentiation
- 11. Meristem
- 12. Protoplast culture
- 13. Synthetic seeds
- 14. Anther culture

IV. RECORD & VIVA

Charles of Genetics

5M