



B.Sc GENETICS III YEAR
SEMESTER-V
DISCIPLINE SPECIFIC ELECTIVE (DSE)
DSE- (B)
PAPER: ANIMAL CELL TECHNOLOGY & ANIMAL GENETICS
QUESTION BANK FOR PRACTICALS

Duration= 2 hours

Total= 25M

I. MAJOR PRACTICALS

1x10=10M

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

II. MINOR PRACTICALS

1x5 = 5M

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

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**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

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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

5M

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