

**Kakatiya University**  
**Practical Question Bank**  
**B.Sc. Biotechnology**  
**III year**  
**Paper - III**

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**Time: 3 hrs**

**Max.Marks:50**

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- Q.I. a) Isolation of DNA from plant cells 8 Marks  
b) Isolation of DNA from animal cells  
c) Isolation of DNA from bacterial cells
- Q.II. a) Analysis of DNA by agarose gel electrophoresis 8 Marks  
b) Restriction digestion of DNA
- Q.III. a) Preparation of competent cells of bacteria 8 Marks  
b) Bacterial Transformation  
c) Selection of Transformants under pressure (antibiotics)
- Q.IV. a) Immuno diffusion Test 8 Marks  
b) ELISA Test  
c) Microagglutination using microtiter plates (ABO & Rh blood groups)  
d) Viability Tests of cells/bacteria (Evans blue test or Trypan blue test)  
e) Coomb's Test
- Q.V. Spotting (4 x 2 ½) 10 Marks
- Q.VI. Record 4 Marks
- Q.VII. Viva-voce 4 Marks

**B.Sc. Biotechnology-III Year  
Practical Paper-III**

Q.V. Spotting:

1. Cot curve
2. Mitochondrial genome (Human)
3. Chloroplast genome (Tobacco)
4. Eukaryotic Promoter
5. VNTRs
6. RNA polymerase
7. RNA - splicing
8. t-RNA
9. Pre-initiation complex
10. Lac-Operon
11. Restriction Enzymes
12. PBR 322 & PUC
13. Genomic and C-DNA libraries
14. Blotting techniques (S/N/W)
15. PCR
16. Antigen
17. Immunoglobulin
18. ELISA
19. Phagocytosis
20. Lymphocytes

**Kakatiya University**  
**Practical Question Bank**  
**B.Sc. Biotechnology**  
**III year**  
**Paper - IV**

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**Time: 3 hrs**

**Max.Marks:50**

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- Q.I. a)Preparation of Media (MS&B%) 8 Marks  
b) Induction of callus & Organogenesis  
c) Preparation of synthetic seeds  
d) Suspension culture of plant cells
- Q.II. a) Preparation of media of animal cells/Tissues 8 Marks  
b) Cell disaggregating and cell counting (RBC/WBC)  
c) Cytotoxicity of the cells using the dye MMT method
- Q.III. a) Production of wine using common yeast 8 Marks  
b) Production of H<sub>2</sub> or biogas using cow/cattle dung  
c) Production of alcohol by fermentation and estimation of alcohol by colorimetry
- Q.IV. a) Isolation of microbes from soil and industrial effluents 8 Marks  
b) Estimation of BOD in water samples  
c) Production of biofertilizers (Azolla/Rhizobium)  
d) Growth curves of bacteria. Measurement of growth in liquid cultures
- Q.V. Spotting (4 x 2 ½) 10 Marks
- Q.VI. Record 4 Marks
- Q.VII. Viva-voce 4 Marks

**B.Sc. Biotechnology-III Year  
Practical Paper-IV**

Q.V. Spotting:

1. Stem cells
2. IVF
3. Micro-injection
4. Laminar Air-Flow
5. Callus
6. Cell Suspension Culture
7. Somatic Embryogenesis
8. *Agrobacterium tumefaciens*
9. Fermentor
10. Micro projectile gun/Biolistic gun
11. Interferons
12. MCA
13. Biofuels
14. Biofertilizer
15. Biogas plant
16. Antibiotic (penicillin)
17. Golden rice
18. Flavr Savr fruit
19. Human Growth hormone
20. Biopesticide

