

BIOTECHNOLOGY

Paper A

Time 2 ½ Hours

Maximum Marks: 60

Instruction: - Attempt All Questions

Note: Draw Diagram's where ever necessary.

Section A: Long Answer Type Questions: (5 marks each)

The questions in the model paper are based on referred syllabus prescribed by BOSE for the subject Biotechnology. The questions are strictly as per the new scheme

Q1: Write short notes on the following

- A) Secondary structure of protein.
- B) Tertiary structure of protein

OR

Define protein engineering? Write down steps involved in protein Engineering?

Q2: What is DNA library? Write down methods involved in it

OR

What is Southern blotting technique? Write down the various steps involved in it?

Q3: What do mean by PCR? Describe in detail?

OR

Write short notes on

- A) Recombinant DNA molecule
- B) Restriction enzymes

Q4: Define and Discuss Structural genome and functional genome?

OR

Define recombinant DNA technology? Write down steps involved in it.

Q5: write short note on

- A) Human genome project, its significance
- B) Bioinformatics and applications

OR

Define any two of the following

- A) cloning vector
- B) expression vector
- C) Binary Vector

Section B: Short Answer type questions (3 marks each)

Q6: what are conjugated proteins? Give two examples.

Q7: What are plasmids? Write its importance.

Q8: Define proteins. Give examples of secondary protein.

Q9: What are hydrophobic bonds, where they are found.?

Q10: Write down the application of PCR.

Q11: Define Genome Library

Q12: What are DNA PROBES?

Section C: Very Short answer Type Questions: (2 marks each)

Q13: Name various types of interactions (Non-covalent bonds) found in proteins.

Q14: Name four protein based products.

Q15: What is transformation

Q16: What is database.

Q17: Where was NCB published.

Section D: Objective/MCQ (1 mark each)

Q18: The gene bank was built by

Q19: The direction of Nucleoside sequence os from

Q20: Human genome project was started in

Q21: The prion is

A) altered protein

B) Bacteria

C) Virus

D) None of these

Q21; they produced first recombinant DNA molecule:

Q22: The inactive form of Chymotrypsin is called-----

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Paper B

Time 2 ½ Hours

Maximum Marks :60

Instruction:- Attempt All Questions

Note: Draw Diagram's where ever necessary.

The questions in the model paper are based on referred syllabus prescribed by BOSE for the subject Biotechnology. The questions are strictly as per the model scheme

Section A: Long Answer Type Questions: (5 marks)

Q 1: Define sterilization? Write down the physical and chemical methods of sterilization? 5 marks

OR

What are the stem cells? Explain embryonic stem cell?

Q 2: write short note on

- A) Golden rice
- B) Bt Cotton

OR

What are transgenic plants? Write down the methods used for gene transfer in plants?

Q 3: Define Hybridoma technology? Show diagrammatically the production of monoclonal antibodies?

OR

Write short notes on:

- A) Hybrids
- B) Cybrids

Q 4: Define plant tissue culture? Write down the basic steps involved in plant tissue culture

OR

Define microbial culture? Explain the various phases of microbial growth curves?

Q5: Define fermentation process? Give the construction of fermenter used in microbial culture

OR

Write short note on

- A) finite cell lines
- B) Continuous cell lines

Section B: Short Answer type questions (3 marks each)

- Q6: what are the effects of pH and temperature on microbial growth media?
Q7: What are primary and secondary metabolites? Give examples also?
Q8: Why *Agrobacterium tumefaciens* is called nature's genetic engineer?
Q9: Define cryopreservation? Give two examples of cryopreservation?
Q10: Describe very briefly Somaclonal variation?
Q11: What are the applications of plant tissue culture?
Q12: Mentions few concerns regarding Animal genetic engineering?

Section C: Very short answer type questions: (2 marks each)

- Q13: What is knock out mice?
Q14: Explain t-pa protein is administered after cerebral haemorrhage?
Q15: What are cell lines?
Q16: What is down streaming process?

Section D: objective type questions (1 mark each)

- Q17: Culture preservation at -196 is called
Q18: The microorganisms used to produce amylases is
Q19: Who is regarded as father of tissue culture?
Q20: At what temp hot air oven sterilization is done?
Q21: Formation of blood cells is called