

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)
BSc DEGREE EXAMINATION DECEMBER 2023
(Sixth Semester)

Branch – **BOTANY**

GENETIC ENGINEERING

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** marks

(10 x 1 = 10)

1. LB Medium is said to be a.

i)Complex medium	ii)Defined medium
iii)Simple medium	iv)Plain medium
2. Dideoxy method of DNA sequencing is otherwise known as.

i)Chemical degradation method	ii)Chain termination method
iii)Cycle sequencing	iv)pyrosequencing
3. Plasmids are usually what type of extra chromosomal DNA molecules?

i)Linear	ii)Circular
iii)Straight	iv)Discontinuous
4. Cutting and joining of the DNA are which techniques?

i)DNA degradation	ii)DNA replication
iii)DNA manipulation	iv)DNA synthesis
5. Identify the compound produced by *Agrobacterium tumefaciens*.

i)Opines	ii)Proline	iii)Ampicillin	iv)Serotonin
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6. Monoclonal antibodies are.

i)Heterogenous antibodies produced from single clone of plasma cells	ii)Homogenous antibodies produced from single clone of plasma cells
iii)Both a and b	iv)None of these
7. Southern blotting procedure is used to detect DNA fragments in.

i)Agarose gel	ii)Acryl amide gel	iii)Phytigel	iv)Gelatin
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8. What is the process of synthesis of a polypeptide chain from mRNA known as?

i)Conversion	ii)Replication	iii)Transcription	iv)Translation
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9. Which of the following is a non-symbiotic nitrogen fixing bacterium?

i) <i>Klebsiella pneumonia</i>	ii) <i>Salmonella typhimurium</i>
iii) <i>Serratia marcescens</i>	iv) <i>Erwinia herbicola</i>
10. In gene therapy, the gene defects are cured in a child or _____ stage.

i)Adult	ii)Teenage	iii)Old	iv)Embryo
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SECTION - B (35 Marks)

Answer **ALL** Questions

ALL Questions Carry **EQUAL** Marks (5 x 7 = 35)

11. a Write notes on electrophoresis.
- OR
- b Give an account on DNA sequencing.

Cont...

12. a Explain about Restriction enzymes .
OR
b Explain about plasmid.
13. a Can you elaborate on the principle of PCR.
OR
b Write about monoclonal antibodies.
14. a Give an account on insertional inactivation.
OR
b Write the diagnostic features of nucleic acid probe.
15. a Give an account on transgenic plants\
OR
b Write about genetic counselling.

SECTION - C (30 Marks)

Answer any **THREE** Questions

ALL Questions Carry **EQUAL** Marks

(3 x 10 = 30)

16. Give an account on the protocol for DNA extraction from plant tissues.
17. Explain in detail about the functions of different RNA Polymerases.
18. Discuss in detail about cDNA libraries.
19. Give an account on Northern blotting.
20. Explain about gene therapy.

Z-Z-Z

END