

8. Luciferase genes are also used at times for detection. Choose the correct statement for them.
- a. They are obtained from fireflies only
 - b. The detection requires provision of substrate which produces light
 - c. Enzymes such as beta-galactidase require substrate X-gluc to produce light
 - d. Luciferase genes are preferred over fluorescent proteins
9. *Agrobacterium tumefaciens* is used in cloning because:
- a. It causes tumours in plants
 - b. It has a large genome
 - c. It can transfer DNA to plant cells
 - d. It is easy to culture
10. The first restriction endonuclease that was discovered:
- a. BamHI
 - b. EcoRI
 - c. HindIII
 - d. HindII

(Descriptive)

Time : 1 hr. 15 mins.

Marks : 25

[Answer question no.1 & any two (2) from the rest]

- | | |
|--|-------------|
| 1. What is BLAST and how to interpret the BLAST output? | 1+4=5 |
| 2. What is the difference between a reporter gene and marker gene?
Describe the role of anyone of the selectable marker gene. | 4+6=10 |
| 3. What is agrobacterium gene transfer? Explain the process involved in the transfer using agrobacterium and what are its application. | 2+6+2=10 |
| 4. What are restriction enzymes? What roles do restriction enzymes play in bacteria? What is the significance of restriction enzymes in biotechnology? | 2+2+6=10 |
| 5. Write short notes on <i>any four</i> of the following: | 2.5+2.5+2.5 |
| a) Global Alignment | +2.5=10 |
| b) Local Alignment | |
| c) Pairwise Alignment | |
| d) Multiple Sequence Alignment | |
| e) GAPS | |
| f) FASTA | |

= = *** = =