Kalyani Mahavidyalaya

Part-III Honours Test Examination-2017

Subject: Molecular Biology & Biotechnology

Paper-VII

Full Marks: 50 **Time: 2 Hours**

1. Answer any five **1X5= 5**

A. What is Spheroplast?

B. How a restriction enzyme reaction can be stopped?

C. Name one DNA staining reagent.

D. What is the pH of Electrophoresis buffer (TAE)?

E. What is Transfection?

F. Give an example of a selectable marker.

G. State two importance of Single Cell Protein (SCP).

2. Answer any Five **2X5= 10**

A. What are Isoschizomers? Give one example of type-II restriction enzyme.

B. What is PCR?

C. What is Agarose gel electrophoresis? What are the components of a loading buffer?

D. Compare stable and transient transfection.

E. What is a reporter gene? Give one example.

F. Explain cloning and expression vectors with suitable example.

G. Why *E.coli* is considered to be an ideal host cell?

3. Answer any Five **5X5= 25**

A. Write down the role of following chemicals in DNA preparation:

i) Lysozyme ii) EDTA

iii) Phenol-Chloroform Solution iv) Ethanol

v) EtBr

B. Write a short note on Biogas.

C. Discuss Insertional Inactivation as a mean of selecting transformants.

D. How can we separate Plasmid DNA from Chromosomal DNA fragment contaminant?

E. Explain with example of blunt end and staggered end restriction enzyme. How can you ligate a blunt end DNA fragment to a staggered end vector?

F. Write a short note on Southern Blotting.

G. Compare Type-I, Type-II and Type-III restriction enzyme.

4. Answer any one **1X10= 10**

A. Discuss various procedure of gene delivery into host cell.

B. Discuss Industrial production of Ethanol.