GIET UNIVERSITY, GUNUPUR – 765022
M. Sc. (Second Semester) Examinations, September – 2021
20BTPC201 – Genetic Engineering
(Biotechnology)

Time: 2 hrs   Maximum: 50 Marks

(The figures in the right hand margin indicate marks.)
PART – A

Q.1. Answer *ALL* questions   **(2 x 10 = 20 Marks)**

a. What is restriction and modification system?
b. Differentiate between isoschizomers and neoschizomers with examples?
c. Define Klenow enzyme? Write its importance.
d. How can you avoid recircularization of DNA molecules after treatment with restriction enzyme?
e. Write the applications of DNA footprinting.
f. Four numbers of templates DNA were taken for PCR amplification for 10 cycles with the probability of 95% efficiency. Calculate the number of expected PCR products?
g. What is colony hybridization?
h. Which matrixes are used for His-Tag and MBP-Tag?
i. Give the sketch labelled diagram of YAC vector?
j. What are the roles of affinity tag in expression vector?

PART – B   (6 x 5 = 30 Marks)

Answer *ANY FIVE* questions   Marks

2. What restriction enzyme? Discuss the nomenclature and types of restriction enzyme.   (6)
3. Explain the method of cloning using bacteriophage λ?   (6)
4. Describe the method of Southern hybridization?   (6)
5. Explain the various methods for purification of recombinant proteins?   (6)
6. Discuss the production of heterologous protein using Baculovirus expression system?   (6)
7. Explain the process of C-DNA synthesis and construction C-DNA library?   (6)
8. Discuss the Sanger's methods of DNA sequencing?   (6)

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