JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -I EXAMINATION - 2024

M.Sc-II Semester (BT)

COURSE CODE (CREDITS): 18MS1BT313 (3) MAX. MARKS: 15

COURSE NAME: RECOMBINANT DNA TECHNOLOGY

COURSE INSTRUCTORS: Dr. Rahul Shrivastava MAX. TIME: 1 Hour

Note: Note: (a) *All questions are compulsory.*

(b)Marks are indicated against each question in square brackets.

(c) Calculators are NOT allowed

Q1. You are provided with diagram of a pUC18/19 vector. Calculate the size of restriction digestion fragments obtained in each case. (All calculations to be done in fair copy) **[1+1+1+1+2=6]**

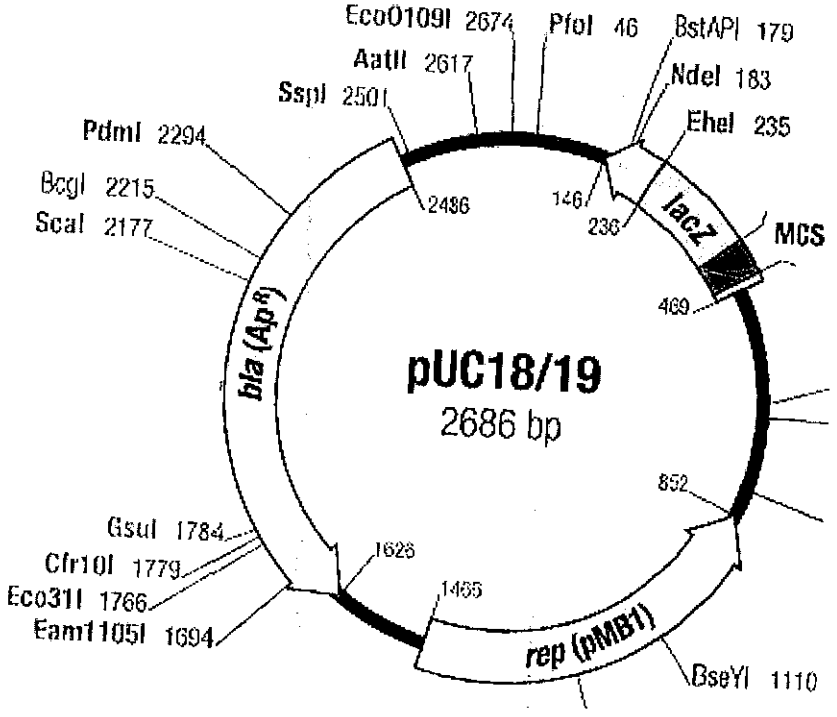
a. Size of gene (***bla***) for ampicillin resistance.

b. Number and size of products obtained when the isolated ***bla*** **gene** is digested with **ScaI**

c. Number and size of products obtained when the isolated ***bla*** **gene** is digested with **ScaI** and **GsuI.**

d. Number and size of products obtained when the isolated ***bla*** **gene** is digested with **ScaI** and **NdeI**

e. Sketch a labeled agarose gel showing different bands obtained when the gene / digested product(s) obtained from above - a, b, c, and d digestion mixtures would be run in separate lanes.



Q2. Write Short Notes on: **ANY TWO (2 X 2 = 4)**

i. Star Activity

ii. Components of a plasmid

iii. Artificial Methods of bacterial Transformation

Q3. Provide a table differentiating between the following enzymes used in RDT: **(2.5 X 2 = 5)**

a. Types of Ligases

b. Types of Restriction Endonucleases