Sr. No. 314

Exam. Code: 103205
Subject Code : 1410

26-12-16 (E)

B.A./B.Sc. - 5th Sem.

(2116)

Biotechnology (rDNA Technology & Animal Biotechnology)

Time allowed: 3 hrs. **Max. Marks: 75**

Section A:

Attempt all questions. Each question carries 1½ mark. Answers should be brief and to the point.

i. Why restriction enzymes that cut away from recognition site are not important for rDNA technology.
ii. End labeling can be done by……..?
iii. What will be ideal size range of cloning vector; 4-8 kb, 10-15 kb or more than 15 kb.
iv. What is the difference between BAC and YAC?
v. What are advantages of lipofection?
vi. Microprojectiles can be used to transform bacteria? True or false.
vii. How can you make blunt ended DNA, sticky ended?
viii. Explain transfection?
ix. Application of monoclonal antibodies.
x. Can a tooth can be regenerated by stem cells?

Section B:

Attempt five questions. Each question carries equal marks (12 marks in total). Answer to each question should not exceed 5 pages.

1. (A) Explain the role of T4 DNA ligase, terminal transferase and polynucleotide kinase for vector construction and gene cloning?
   (B) Explain different types of restriction enzymes? Which type is more common in rDNA tech?

   OR

   (C) How can you convert mRNA into cDNA? Explain.
   (D) Discuss how blunt and sticky ends are produced in DNA? How can we join the DNA molecule?

2. (A) Write the essential features of a cloning vector. What are the basic difference between pUC and cosmid vectors?

   OR

   (B) Write in detail about different type of vectors based on lambda and how these vectors are used for cloning experiments?

3. (A) Explain southern blotting??
   (C) Explain chemical and electrical based method of transformation?

   OR

   (C) Write short notes on
   III. Radioactive labeling of DNA
   IV. Nick translation?
   (D) What is random priming sequencing? With the help of diagram explain the procedure for random sequencing in detail?

4. (A) Discuss various types of bioreactors for large scale cell culturing?

PTO

(C) Explain different types of interleukins and their role in cell growth?

OR

(C) How can you produce insulin and other important metabolites in cells?
(D) Explain t-plasminogen activator and factor VIII?

5. (A) Explain various vectors for protein expression in mammalian cells?
(C) What are stem cells and their therapeutic applications?

OR

(C) What are polyclonal antibodies? What are their advantages and drawbacks over monoclonal ones.
(D) With examples, explain vaccines can be produced in animal cells?

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