OR / DeLeJee

What is recombinant DNA technology and describe its various applications for human welfare? 11

heve: meÙeepekeâ [eSveS ØeeoÙeeeiekeâe keÙee n? Deej Ùen Yee ceeveJe keâuÙeeCe keâ eueS eJeeYeVe DeveØeÙeeiee keâe JeCeve keâeepeÙe~

5. Discuss operon concept of gene regulation by giving an example. 11

peeve eJeeveÙeceve keâ Deehejeve keâe DeJeOeejCee keâe JÙeeKÙee Skeâ Goenj Ce keâ meeLe Øemlele keâeepeÙe~

OR / DeLeJee

Write short notes on the following:

evecveeueeKele hej mee#ehle eŠhheeCeÙee eueeKeS :

(i) Clover leaf model of t-RNA 6

Še-DeejSveS keâe keueeJej heCe cee[ue~

(ii) Gene cloning 5

peeve keueeeveie

A ((Printed Pages 4)

Roll No. _____

S-628

B.Sc. (Part-III) Examination, 2015

BIOTECHNOLOGY

Paper-First

(Molecular Biology & Biotechnology)

Time Allowed : Three Hours] ***[Maximum Marks : 75***

Note : Answer all questions.

meYee ØeMvee keâ Gòej oeepeS~

1. Answer the following: 5×6=30

evecveeueeKele keâ Gòej oeepeÙe:

(i) Differentiate between type I,II and III restriction enzymes.

ŠeFhe I,II Deej III jemŠkeâMeve SpeeFcee ce Devlej yeleeFÙe~

(ii) Explain termination of transcription in prokaryotes.

ØeekeâÙeeŠme ce Šemee›eâhMeve keâ meceeheve keâe JeeCele keâeepeÙe~

(iii) Define melting temperature of DNA. Describe the factors affecting the melting temperature of DNA.

[eSveS keâ õJeekeâjCe leeheceeve keâe heejYeee<ele keâeepeÙe~

[eSveS keâ õJeekeâjCe leeheceeve keâe ØeYeeeJele e Jeeue keâejkeâe keâe JeCeve keâeepeÙe~

(iv) Describe any one major method of gene transfer in plants.

heeOee ce peeve mLeeveelejCe keâ ekeâmee Yee ØeceKe eJeeOe keâe JeCeve keâeepeS~

(v) Describe any one technique for determining the expression of a gene at the level of protein.

ØeeŠeve keâ mlej hej Skeâ peeve keâe DeeYeJÙeeòeâ keâe eveOeejCe keâjve keâ eueS ekeâmee Skeâ lekeâveekeâ keâe JeCeve keâeepeS~

2. What is DNA replication? Describe the initiation of replication in prokaryotes. 11

[eSveS Øeelekeâele keÙee n? ØeekeâÙeeŠme ce keâ ØeejYe keâe JeCeve keâeepeÙe~

OR / DeLeJee

Can DNA restriction profile be exploited as molecular markers? Provide the details of the technique and their applications. 11

keÙee [eSveS ØeeleyeOe ØeeheâeFue keâe DeeCeeJekeâ ceekeâj keâ ™he ce GheÙeeie ekeâÙee pee mekeâlee n? Fmekeâe lekeâveekeâ keâe eJemlele eJeJejCe leLee Fmekeâ DeveØeÙeeiee keâe yeleeFÙe~

3. Define genetic code and also discuss various features of genetic code. 12

DeeveJeeMekeâ keâe[keâe heejYeee<ele keâeepeÙe Deej DeeveJeeMekeâ keâe[keâ eJeeYeVe eJeMe<eleeDee keâe ÛeÛee keâeepeS~

OR / DeLeJee

What are blotting techniques? Also explain one of the blotting techniques with its applications in detail. 12

yueeeŠie lekeâveekeâ keÙee nelee n? ekeâmee yueeeŠie lekeâveekeâ keâe JÙeeKÙee Gmekeâ DeveØeÙeeiee keâ meeLe JeeCele keâeepeÙe~

4. What is PCR? Describe various steps involved in PCR. Discuss the various applications of PCR. 11

heemeeDeej keÙee n? heemeeDeej keâ eJeeYeVe ÛejCee keâe JeCeve keâeepeÙe~

heemeeDeej keâ eJeeYeVe DeveØeÙeeiee keâe JÙeeKÙee keâeepeÙe~