

Total No. of Questions : 9] [Total No. of Printed Pages : 1
(2041)

**UG (CBCS) IIIrd Year (Annual)
Examination**

2544

B.Sc. ZOOLOGY

(Animal Biotechnology)

(DSE-IA)

Paper : ZOOL 301(B)TH

Time : 3 Hours]

[Maximum Marks : 50

Note :- Attempt *five* questions in all, selecting *one* question from each Section B, C, D and E. Question No. 1 of Section-A is compulsory.

Section-A

(Compulsory Question)

1. Do as required :

(i) Full form of VNTR is

CH-370

(1)

Turn Over

- (ii) Golden rice is rich in :
- (a) Vitamin A (b) Vitamin B₁₂
(c) Vitamin K (d) Vitamin E
- (iii) First mammal to be successfully cloned by SCNT was :
- (a) Mouse (b) Calf
(c) Female sheep (d) Male sheep
- (iv) The technique employed for amplification of DNA fragment is :
- (a) Southern blotting (b) PCR
(c) ELISA (d) Western blotting
- (v) GMO's have been produced to :
- (a) Increase yield (b) Disease control
(c) Molecular farming (d) All of these
- (vi) The first transgenic plant to be expressing antibiotic resistance was
- (vii) Technique of inactivation of gene is called**
- (a) Gene knockout
(b) Splicing
(c) Gene lock in
(d) DNA denaturation

(viii) Chain termination method of DNA sequence was developed by

(ix) The first human hormone produced by recombinant DNA technology is

(x) Storing of cells at sub zero temperature is called

1×10=10

Section-B

2. (a) Expand the term SCP and list its various advantages.

(b) Briefly discuss the role of Biotechnology in Alcohol Production. 3,7

3. (a) Write a brief note on 'Biogas'.

(b) Discuss the role of Biotechnology in Sewage Treatment. 3,7

Section-C

4. (a) Discuss the advantages and limitations of λ bacteriophage as a cloning vector.

(b) What are restriction enzymes ? Enlist the characteristics of type-II restriction enzymes. 5,5

5. (a) What is Bacterial Transformation ? Explain the transformation by CaCl_2 treatment.
- (b) Differentiate Genomic Library and cDNA Library.

Section-D

6. (a) Expand the term PCR and list its applications.
- (b) Explain chain termination method of DNA sequencing and give its advantages and drawbacks. 3,7
7. (a) Define DNA fingerprinting and enlist some of its applications.
- (b) What is Western Blotting ? Discuss the principle and general mechanism of Western Blotting. 3,7

Section-E

8. (a) Write a brief note on the knockout animals.
- (b) Explain the nuclear transplantation method of transgenesis and discuss its significance. 3,7
9. (a) Enlist the applications of recombinant human growth hormone.
- (b) Explain hybridoma technology and give its significance. 3,7