2023

Time - 3 hours

Full Marks - 60

*Answer **all groups** as per instructions.*
Figures in the right hand margin indicate marks.
Candidates are required to answer
in their own words as far as practicable.
Draw labelled diagrams wherever necessary.

GROUP - A

1. Fill in the blanks. (all) [1 × 8

(a) The cloning vector having cos-site are called _____.

(b) The vectors which can express the desired genes in the host cells are called _____.

(c) Creation of c-DNA library starts with _____ instead of DNA.

(d) The molecular technique used to identify specific DNA in a DNA sample is called _____.

(e) An animal having a foreign gene instead into its genome is called _____.

(f) The transgenic mosquitoes are used to _____ people against malaria.

(g) Transplanting donor organs from transgenic animals into human is called _____.

(h) Determination of the order of nucleotides of a DNA is called _____.

GROUP - B

2. Answer any eight of the following within two or three sentences each. [1½ × 8

(a) What is YAC ?

(b) What are bioreactors ?

(c) How nomenclature of restriction enzymes are done ?

(d) What is blotting technique ?

(e) What is a cDNA library ?

(f) State applications of transgenic cattle.

(g) What is in vitro gene theraphy ?

(h) How can you define GMO ?

(i) Symptoms of Thalassemia

(j) What are the uses of animal cell culture ?

GROUP - C

3. Write notes on any eight of the following within 75 words each. [2 × 8

(a) Phagemids

(b) Role of M13

(c) DNA microinjection

(d) Electroportion

(e) Application of Sanger's method of DNA sequencing

(f) Molecular diagnosis of cystic fibrosis

(g) Application of animal cell culture

(h) Explain calcium chloride method of transformation.

(i) Application of biotechnology in agriculture

(j) Recombinant human growth hormons

GROUP - D

4. Answer any four of the following within 500 words each. [6 × 4

(a) Give an account on construction of genomic library.

(b) Write an account on DNA Finger Printing.

(c) Give an account on PCR and its applications.

(d) Write an essay on cloning vectors used in biotechnology.

(e) Describe the technique of Western blotting and its applications.

(f) Describe molecular diagnosis of genetic disease like sickle cell anaemia and Haemophilia.

(g) Give an account of gene therapy and its applications.