

VPM's B. N. Bandodkar College of Science Thane  
Human Sciences S.Y.B.Sc ; Course- USHSC403  
Semester IV - 2018-19

Total Marks: 75

Duration: 2.5 hrs

N.B:1. All questions are compulsory.

2. Figures to the right indicate marks.

3. Draw neat and labeled diagrams wherever necessary.

Q.1) (A) Explain the importance of *Agrobacterium tumefaciens* in bt cotton. (7)

OR

(A) Explain the retroviral method of transgenic animals. State its disadvantages over others. (7)

(B) Write a short note on Flavr Savr. (8)

OR

(B) 'DNA microinjection method helps to produce transgenic animals.' - Justify (8)

(C) **Attempt any ONE of the following:** (5)

(i) What is SCID? Explain its importance in research.

(ii) rDNA technology for nitrogenase gene.

Q.2) (A) Schematically represent insulin production. (7)

OR

(A) Discuss the applications of stem cells. (7)

(B) What are stem cells? State the properties of the same. (8)

OR

(B) What are bioflavonoids? State the health benefits of the same. (8)

(C) **Attempt any ONE of the following:** (5)

(i) State the sources of stem cells.

(ii) Schematically represent production of somatotropin.

Q.3) (A) What is informed consent form? Discuss the points that are included in informed consent form. (7)

OR

(A) What is prenatal diagnosis? Write a short note on diagnostic techniques. (7)

(B) Write a short note on issues regarding integration of new genetic technologies and practices in clinical medicine. (8)

OR

(B) Elaborate on the issues regarding genetic discrimination in various fields that may arise as a consequence of HGP. (8)

(C) **Attempt any ONE of the following:** (5)

(i) Write a note on features of Human Genome Project.

(ii) How can the genetic disorders be tested using biochemical tests?

Q.4)

**Attempt Any THREE of the following:**

**(15)**

- (i) Write a short note on Yellow rice.
- (ii) Explain in brief enzymes used in rDNA technology.
- (iii) Discuss in detail the structure of insulin. Also comment on its significance.
- (iv) What are free radicals? How do they cause oxidative stress.
- (v) What is Human Genome Project? Enlist the goals of HGP.
- (vi) What is genetic counselling? Describe the members of a genetic counselling team.

~~~~~All the best~~~~~