

VPM's B. N. Bandodkar College of Science, Thane
Human Sciences S.Y.B.Sc: Course – USHSC403
Semester-IV- 2016-17

Total Marks: 75

Duration: 2 $\frac{1}{2}$ 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 process of genetic engineering of nitrogenase gene cluster. (7)
- OR
- (A) What are microbial insecticides? Explain the role of genetic engineering for improved bio control. (7)
- (B) Write a short note on flavr savr. (8)
- OR
- (B) Explain in brief about different methods of producing transgenic mice. (8)
- (C) Attempt any ONE of the following: (5)
- (i) Write a short note on Dolly.
- (ii) Explain the application of genetic engineering in fruit ripening and flower wilting.
- Q.2) (A) Discuss ELSI associated with HGP. (7)
- OR
- (A) Post-genomic era is the era of personalized medicines. Comment. (7)
- (B) Discuss any 2 techniques used for prenatal genetic testing. (8)
- OR
- (B) Give a detailed account of genetic counselling. (8)
- (C) Attempt any ONE of the following: (5)
- (i) How is protection provided against misuse of personal genetic information?
- (ii) Describe different techniques used for sperm sorting.
- Q.3) (A) Explain the applications of stem cells in regenerative medicine. (7)
- OR
- (A) What is lycopene? Discuss the health benefits of the same. (7)
- (B) Write a short note on production of recombinant somatotropin. (8)
- OR
- (B) Discuss the health benefits and food sources of bioflavonoids. (8)

- (C) **Attempt any ONE of the following:** (5)
- (i) Justify: Stem cells are classified based on their differentiation capacity.
 - (ii) Enlist the different food sources of anthocyanins and phytochemicals.

Q.4) **Attempt Any THREE of the following:** (15)

- (i) What is golden rice? Elaborate on its importance.
- (ii) Write a note on Transgenic Fish.
- (iii) Schematically represent recombinant insulin production.
- (iv) Justify: Antioxidants help in preventing oxidative stress.
- (v) Justify :Informed consent is important before genetic testing.
- (vi) What are the benefits of HGP ?