

Register No.:

Date:02-04-2019

**ST. JOSEPH’S COLLEGE (AUTONOMOUS), BANGALORE-27**

**B.Sc. BIOTECHNOLOGY - IV SEMESTER**

**SEMESTER EXAMINATION: APRIL 2019**

**BTOE 4116 – Biotechnology Now And Beyond**

**Time- 1 1/2 hrs Max Marks-35**

**This paper contains ONE printed page and two parts**

**Part A** – Answer **ANY SEVEN 7 x 2 = 14**

1. What are the two major types of stem cells? What is the major difference between them?
2. Bt cotton carries genes that produce a toxin which can kill the Bollworm pest that attacks the crop. Where did scientists find these genes?
3. Which database can one use to find the sequence of a protein from different organisms? Which tool can one use to compare two sequences?
4. Describe one application of DNA based studies in food technology and its biological basis.
5. What is pharmacovigilance?
6. Define a codon.
7. Name the four bases in RNA.
8. Name two restriction enzymes.
9. What is karyotyping?
10. Name the core histones.

 **Part B** – Answer **ANY THREE 3 x 7 = 21**

1. Draw and label a generalized cell with at least 6 parts/organelles. Describe the function of each part/organelle in few sentences.
2. Recently, scientists produced genetically modified monkeys for studying the effect of some medicines on diseases related to day-night cycle (circadian rhythm). These genetically modified monkeys displayed sleeplessness, anxiety, and Schizophrenia like symptoms. Discuss the ethical issues involved in this experiment. **Temporarily ignore your personal opinion**, and discuss why it may or may not be justified.
3. What were the 4 major steps in the sequencing of human genome? Describe with help of 2-3 sentences each, with suitable diagrams.
4. Describe any two genetic disorders in detail.
5. Describe Hershey and Chase’s experiment in detail with a diagram. What outcome was obtained from this experiment?

**BTOE 4116\_A\_19**