Enrollment No._____

NAVRACHANA UNIVERSITY
a UGC recognized University

School: School of Science
Program/s: BMS
Year: 2nd **Semester:** 3rd
Examination: End Semester Examination
Examination year: December 2022

Course Code: BM207 **Course Name:** Animals in Biomedical Research
Date: 08/12/2022 **Total Marks:** 40
Time: 11:30 am to 01:30 pm **Total Pages:** 1

Instructions:

- *Write each answer on a new page.*
- *Use of a calculator is permitted/~~not permitted~~.*
- ** COs=Course Outcome mapping. # BTL=Bloom's Taxonomy Level mapping*

Q. No.	Details	Marks	COs*	BTL#
Q.1	**Objective-based questions. (1M x 15Q = 15M)** 1. Why a model organism with less junk DNA is a good genomic model organism? 2. Which technique gives you maximum amount of blood from Mice? Why? 3. What is a brust size? 4. Write 2 features of model organism. 5. *C. elegan* has specific number of neurons. Write true or false with proper justification. 6. How we you study heterologous proteins in Yeast? 7. Why Arabidopsis is used as a model organism as compare to other plants? 8. What is a scientific name of Corn used for transposon study? 9. How Drosophila is used in axial development study? 10. Which media is used to culture *E. coli*? 11. Differentiate between male and female Zebra fish. 12. Write one biosafety issue in animal research. 13. What is the significance of transgenic animals in medical research? 14. Brain uses large amount of oxygen as compare to other organs. Write true or false with proper justification. 15. Write one example of neurodegenerative disease.	15	CO1, CO2, CO3, CO4, CO5, CO6	BT1, BT2, BT3, BT4
Q.2	**Short answers. (3M x 5Q = 15M)** 1. Explain 6 points in details that ethical committee consider during project review. 2. Differentiate between Normal and Alzheimer's brain. 3. What are three Rs? Explain it. 4. Differentiate between *Mus musculus* and *Rattus norvegicus*. 5. Draw a labelled figure of *Saccharomyces cerevisiae* cell. Draw life cycle of it. 6. Differentiate between CRISPR-Cas9 and gene silencing techniques.	15	CO1, CO2, CO3, CO4, CO5, CO6	BT1, BT3, BT5 BT6
Q.3	**Long answers. (5M x 2Q = 10M)** 1. Explain one gene-one protein experiment. Draw life cycle of *Neurospora crassa*. 2. Design a detailed experiment in a simplest eukaryote to study the successive synthesis steps of X amino acid. 3. Design a detailed experiment to study neuronal development in chicken.	10	CO1, CO2, CO3, CO4, CO5, CO6	BT1, BT3, BT4, BT5, BT6

**********End of Question Paper**********