Enrollment No._____

NAVRACHANA UNIVERSITY
a UGC recognized University

School: School of Science
Program: BMS
Year: 2nd **Semester:** 3rd
Examination: End Semester Examination
Examination year: December - 2021

Course Code: BM207 **Course Name:** Animals in Biomedical Research
Date: 07/12/2021 **Total Marks:** 40
Time: 08:30 am to 10:30 am **Total Pages:** 02

Instructions:

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

Q. No.	Details	Marks	COs*	BTL#
Q.1	**Objective-based questions. (All mandatory; 1M x 16Q = 16M)** 1) Define: Polylinker site. 2) Give three markers for plasmid construction. 3) What do you mean by shuttle vector? 4) Write the full form of YAC. 5) Write the name of media for bacterial cultivation. 6) Differentiate between BSL2 and BSL3 labs. 7) Write the examples of Early Life Adversity. 8) Write the full form of pBR322. 9) What do you mean by burst size? Give example. 10) Give example of bioethics conduct. 11) Write two points of model organism. 12) What is a scientific name of fruit fly? 13) What do you mean by cell redox reaction? 14) Why we use puffer fish as a genomic model organism? 15) Write two points that ethical committee consider during project review. 16) Write two examples of neurodegenerative diseases.	16	CO1, CO2, CO3, CO4, CO5, CO6	BT1, BT2, BT3, BT5
Q.2	**Short answers. (Any Six; 2M x 6Q = 12M)** 1) Draw a labelled diagram of Yeast. Write function of its 3 cell components.	12	CO1, CO2, CO3, CO4, CO5, CO6	BT1, BT2, BT3, BT6

	2) Explain: How actin cytoskeleton plays an important role in yeast cell morphology? 3) Describe: Cellular homeostasis. 4) Explain: Neuron structure and function of its each component. 5) Explain: Life cycle of Neurospora crassa. 6) Explain 2-2 peculiar features of *Danio rerio* and *Caenorhabditis elegans* which outstand them with other model organisms. 7) Explain: Three R strategy in animal research.			
Q.3	**Long answers. (Any Three; 4M x 3Q = 12M)** 1) Differentiate between competent and non-competent cells with its pros and cons. Design and explain an experiment to introduce foreign DNA into single cell efficiently. 2) You transformed 'P' gene in *E. coli*, induced it in lactose containing medium and got positive results. You were not sure whether transformation happened at polylinker site or not. Design and explain an experiment with figure to check these two possibilities. 3) Draw a labelled figure of T4 phage. Explain in detail with figure: Lytic cycle of T4 phage. 4) Differentiate between Therapeutic and Reproductive Cloning. Explain in detail: How transgenic animals can be created?	**12**	CO1, CO2, CO3, CO4, CO5, CO6	BT2, BT3, BT4, BT5

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