

Ph.D. IN BIOCHEMISTRY (PHDBC)

Term-End Examination

00691

June, 2019

**RBC-001 : RESEARCH METHODOLOGY,
BIOETHICS AND IPR**

Time : 3 hours

Maximum Marks : 100

Note : This question paper consists of two sections, Section A and Section B. Both the sections are compulsory.

SECTION A

Attempt all the questions :

1. Give full forms of the following abbreviations : $5 \times 1 = 5$
- (a) GEAC
 - (b) WTO
 - (c) GLP
 - (d) MoEFCC
 - (e) HEPA (Filters)

2. Write short notes on any *three* of the following : $3 \times 5 = 15$

- (a) Contained Field Trials
- (b) Biological Hazards
- (c) Trade Marks
- (d) Bioterrorism
- (e) Significance of Geographical Indications in Patents

SECTION B

Attempt any four questions :

3. (a) With the help of a flow chart illustrate the various steps in studying the effect of mercury on brain in Wistar rats. Which step do you find the most crucial for conducting research and why ? Explain. 12
- (b) Describe various types of Biological Safety Cabinets. 8
4. (a) Randomized Block Design is an improvement over the CR design. Illustrate with a suitable example. 15
- (b) Explain the principle of replication of experimental design. 5
5. Enumerate different methods of collecting data. Examine the merits and limitations of the observation method with suitable examples. 20
6. Differentiate between the following terms : 20
- (a) Restricted and Unrestricted sampling
- (b) Biosafety and Biosecurity
- (c) Breeder's rights and Farmer's rights
- (d) Primary and Secondary barriers for biocontainment

7. (a) Discuss the role of the Institutional Ethics Committee. 10
- (b) List out the essential requirements that are necessary for obtaining patents in India for new inventions. 10
8. (a) Discuss the applications of Genetically Modified Organisms (GMO's) in food and agriculture. 10
- (b) What is Inventive Step ? Explain its significance with reference to Diamond vs. Chakrabarty dispute. 10
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