

**Ph.D. IN CHEMISTRY  
(PHDCHEM)**

**Term-End Examination**

**June, 2018**

00185

**RCH-001 : RESEARCH METHODOLOGY**

*Time : 3 hours*

*Maximum Marks : 100*

**Note :** Answer *all* the questions.

1. (a) How are quantitative research designs developed ? Briefly describe various methods for generating data for the quantitative research work. 15
- (b) Give at least 5 sources of literature review in Chemistry. 5
2. (a) What is meant by Open Educational Resources (OER) ? Give examples of some OER initiatives from India. 5
- (b) What are the applications of the ORIGIN (software) in scientific research ? 5
- (c) Discuss the merits and demerits of online courses. 10
- (d) Differentiate between 'precision' and 'accuracy' giving suitable examples from Chemistry. 10

3. What is meant by FFP in research ethics ?  
Elaborate and illustrate your answer. 20
4. Describe any five considerations in selecting a  
research problem and the steps involved in  
research problem formulation. 20
5. (a) Discuss the main differences in writing  
references in ACS and APA styles. 5
- (b) What are the main features of a research  
paper ? 5
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