

Ph.D. Coursework Examination, July 2023

PHYSICS

Course I: Research Methodology (20PHCW100)

[Time: 3 Hours]

[Max. Marks: 70]

Instructions: 1) Answer all the questions.

2) Part A: Questions 1-8 carries 15 marks each.

3) Part B: Questions 9-12 carries 5 marks each (Apply based questions to be set wherever possible)

Part A

- 1 a) Describe the steps involved in the research process. 9+6
b) List out the general problems encounter by the researcher in India.

OR

- 2 Distinguish library research field research and laboratory research on the basis of research methods and techniques. 15

- 3 Discuss the necessity and techniques involved in defining a research problem. 15

OR

- 4 a) Write in detail the criteria of a good research design. 7+8

b) Discuss in detail the different research design methods.

- 5 a) Discuss the steps taken in precautions during the interpretation of data. 8+7

b) Write the steps involved in writing a research report.

OR

- 6 Point out the possible sources of errors in experimental measurement. Describe the tests of sound measurement. 15

- 7 Discuss in detail the following research funding agencies 15

a) DST b) CSIR c) UGC d) DAE-BRNS.

OR

- 8 a) Explain non-patentable matter. 5+10

b) Discuss in detail the patent filing procedure.

Part B

- 9 Write a note on objectives of research. 5

OR

- 10 Illustrate informal experimental design. 5

- 11 Write a note on documentation in the content of the research report. 5

OR

- 12 Write a note on patent licensing and agreement. 5
