

M.Sc.(Physics) (NEP Pattern) Semester-I  
**NEP-237 / 01MSCPH5 - Paper-V - Research Methodology**

P. Pages : 2

Time : Three Hours



**GUG/W/24/15142**

Max. Marks : 80

**Either:**

- |    |    |   |   |
|----|----|---|---|
| 1. | a) | Explain deductive and inductive theory of research in detail. | 8 |
|    | b) | Explain types of Research in detail.                          | 8 |

**OR**

- |  |    |   |   |
|--|----|---|---|
|  | e) | Explain in detail about meaning objective and motivation of Research. | 8 |
|  | f) | Give details about  | 8 |
|  |    | i) Research process   |   |
|  |    | ii) Scientific research method.                                       |   |

**Either:**

- |    |    |  |   |
|----|----|--|---|
| 2. | a) | What is hypothesis? What are different qualities of good hypothesis? | 8 |
|    | b) | How to identify research problem scientifically explain.             | 8 |

**OR**

- |  |    |  |   |
|--|----|--|---|
|  | e) | Explain importance of research design. What are the characteristics of good research design. | 8 |
|  | f) | Write a note on different online databases for physical science research paper publications. | 8 |

**Either:**

- |    |    |   |   |
|----|----|---|---|
| 3. | a) | Write a note on:  | 8 |
|    |    | i) Impact factor & h-index  |   |
|    |    | ii) Paper formatting software like latex & MS-Office.   |   |
|    | b) | Explain characteristic of good research article. Give difference between original article and review paper. | 8 |

**OR**

- |  |    |   |   |
|--|----|---|---|
|  | e) | Write a note on Reference management software.                              | 8 |
|  | f) | Explain in detail about concept importance of research papers & publishers. | 8 |

**Either:**

4. a) Write a detailed note on: 8  
i) Trademark.  
ii) Copyright.
- b) What are new/recent developments in IPR? Explain process of IPR Licensing and transfer of technology. 8

**OR**

- e) What do you mean by Intellectual property Rights (IPR)? Explain its different types in brief. 8
- f) Explain different provisions about exclusion from patent in India as per patent Act 1970. 8
5. Attempt all of the following.
- a) Write a note on Experimental research. 4
- b) What are different uses of shodhganga and shodhgangotri. 4
- c) Explain plagiarism and its detection by using software. 4
- d) What are different techniques used to write draft of patent. 4

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