

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

P. Pages : 2

Time : Three Hours



**GUG/W/24/15142(S)**

Max. Marks : 80

**Either :**

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|----|----|--|---|
| 1. | a) | Write a detailed note on deductive and inductive theory of research. | 8 |
|    | b) | What is the objective of research.                                   | 4 |
|    | c) | Write a note on applied research.                                    | 4 |

**OR**

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|--|----|--|---|
|  | e) | Describe qualitative research and quantitative research with examples. | 8 |
|  | f) | What do you mean by experimental research.                             | 4 |
|  | g) | What is the meaning of research.                                       | 4 |

**Either :**

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|----|----|--|---|
| 2. | a) | What is importance of research design? Explain in detail characteristics of a good research design.                                  | 8 |
|    | b) | What do you mean by Hypothesis? Explain qualities of a good hypothesis and it's types as null hypothesis and alternative hypothesis. | 8 |

**OR**

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|--|----|---|---|
|  | e) | Write a note on Shodhganga and Shodhgangotri.                         | 8 |
|  | f) | Explain the use of encyclopedias in research.                         | 4 |
|  | g) | Write a note on use of websites for physical science research papers. | 4 |

**Either :**

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|----|----|---|---|
| 3. | a) | Explain the concept, importance and publication of research papers. | 8 |
|    | b) | Discuss in briefly on review paper.                                 | 4 |
|    | c) | Write a note on importance of survey in research paper writing.     | 4 |

**OR**

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|--|----|---|---|
|  | e) | Explain the concept of impact factor and cite index.  | 8 |
|  | f) | Explain the importance of use of latex and MS office software in research paper formatting. | 8 |

**Either :**

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|-----------|----|-------------------------------------|----------|
| <b>4.</b> | a) | Explain the term patent and design. | <b>8</b> |
|           | b) | Write a note on copyright.          | <b>4</b> |
|           | c) | Write a note on Trademark.          | <b>4</b> |

**OR**

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|-----------|----|--|----------|
|           | e) | Write a note on Innovation.                                | <b>4</b> |
|           | f) | What are the different methods of transfer of technology.  | <b>8</b> |
|           | g) | What is mean by new developments in IPR.                   | <b>4</b> |
| <b>5.</b> |    | Attempt all the followings.                                |          |
|           | a) | Write a note on historical research.                       | <b>4</b> |
|           | b) | Discuss the UGC listed and peer-reviewed papers.           | <b>4</b> |
|           | c) | Describe plagiarism and self-plagiarism of research paper. | <b>4</b> |
|           | d) | What are the techniques of writing a patent?               | <b>4</b> |

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