**Faculty of Engineering & Technology**

**Department of Artificial Intelligence and Data Science**

**Question Bank**

**Subject: Research Methodology & Intellectual Property Rights Semester : VI**

**Subject Code: 22HSM610A Academic Year:2024-2025**

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| **Module I: Introduction:** Meaning of Research, Objectives of Engineering Research, and Motivation in Engineering Research, Types of Engineering Research, Finding and Solving a Worthwhile Problem. Ethics in Engineering Research, Ethics in Engineering Research Practice, Types of Research Misconduct, Ethical Issues Related to Authorship. | | | | | | | | | | | | |
| **Q. No.** | **Questions** | | **CO** | | **PO** | | | **RBT**  **Level** | | **Marks** | | |
| 1 | Define the term research, Illustrate the research flow cycle with a relevant diagram | | CO1 | | PO1,PO2,PO4,PO10 | | | L2 | | 8M | | |
| 2 | Explain the categories of developing and accessing knowledge in research, along with diagram | | CO1 | | PO1,PO10 | | | L2 | | 6M | | |
| 3 | What are the key ethical issues related to authorship explain each one. | | CO1 | | PO8 | | | L1 | | 6M | | |
| 4 | Discuss the different types of engineering research, clearly point-out the difference between all of them, with examples. | | CO1 | | PO1,PO2,PO6, PO10 | | | L4 | | 8M | | |
| 5 | List the different types of research misconduct and provide a brief explanation for each. | | CO1 | | PO1,PO2,PO6,PO10 | | | L2 | | 8M | | |
| 6 | Define the term Engineering research, Examine the objectives of Engineering research. | | CO1 | | PO1,PO2,PO6,PO10 | | | L4 | | 7M | | |
| 7 | Discover the factors that motivate you to do Engineering research? | | CO1 | | PO6,PO5,PO10,PO12 | | | L4 | | 7M | | |
| 8 | Discuss in brief, about Finding and solving a Worthwhile problem in research. | | CO1 | | PO2,PO3 | | | L6 | | 8M | | |
| 9 | Summarize the ethics involved in doing Engineering research. | | CO1 | | PO8,PO12 | | | L2 | | 6M | | |
| 10 | Outline the practices to be followed as ethics in Engineering Research. | | CO1 | | PO8 | | | L2 | | 6M | | |
| 11 | Define Engineering research and list, examine the aims/motivations and objectives of Engineering Research. | | CO1 | | PO1,PO2 | | | L4 | | 7M | | |
| 12 | What is the meaning of ethics, elaborate the importance of practicing ethics. | | CO1 | | PO8, PO12 | | | L6 | | 7M | | |
| 13 | Summarize the following research misconduct i)Falsification ii)Fabrication | | CO1 | | PO8 | | | L2 | | 8M | | |
| 14 | Elaborate the different ways to credit the research contribution? Explain. | | CO1 | | PO1,PO2,PO12 | | | L6 | | 6M | | |
| 15 | Illustrate the concept of Plagiarism with example. | | CO1 | | PO2,PO8,PO12 | | | L2 | | 6M | | |
| **Module II:** **Literature Review and Technical Reading**, New and Existing Knowledge, Analysis and Synthesis of Prior Art Bibliographic Databases, Web of Science, Google and Google Scholar.  **Effective Search:** The Way Forward Introduction to Technical Reading Conceptualizing Research, Critical and Creative Reading, Taking Notes While Reading, Reading Mathematics and Algorithms, Reading a Datasheet. **Attributions and Citations:** Giving Credit Wherever Due, Citations: Functions and Attributes, Impact of Title and Keywords on Citations, Knowledge Flow through Citation, Citing Datasets, Styles for Citations, Acknowledgments and Attributions, What Should Be Acknowledged, Acknowledgments in, Books Dissertations, Dedication or Acknowledgments. | | | | | | | | | | | | |
| **Q. No.** | | **Questions** | | **CO** | | PO | | | RBT  Level | | | Marks |
|  | | Outline the primary goals of conducting literature review. List-out the criteria helpful for evaluating the information. | | **CO2** | | PO2,PO4 | | | L2 | | | 7M |
| **2.** | | How does the new and existing knowledge can contribute to the research process? Explain with relevant points. | | **CO2** | | PO2,PO4 | | | L2 | | | 8M |
| 3. | | Elaborate data sheets and write their contents. | | **CO2** | | PO2 | | | L6 | | | 6M |
| 4. | | Examine the various steps involved in the critical and creative reading process. | | **CO2** | | PO10,PO2 | | | L4 | | | 8M |
| 5. | | Define the term citation. Describe the three functions of citation. | | **CO2** | | PO2,PO6, | | | L4 | | | 5M |
| 6. | | Analyze how knowledge flows through a citation network using a flow diagram. | | **CO2** | | PO6, PO9,PO10 | | | L4 | | | 7M |
| 7. | | Demonstrate the key features of bibliographic database of the web of science (WOS), and how is it commonly used in research. | | **CO2** | | PO5,PO10 | | | L2 | | | 8M |
| 8. | | What types of citations failed to achieve their goals and do not benefit the readers explain. | | **CO2** | | PO6, PO8 | | | L2 | | | 8M |
| 9. | | Explain the importance of note -taking while reading research papers, along with reading mathematics and algorithms. | | **CO2** | | PO5,PO10,PO12 | | | L5 | | | 8M |
| 10. | | Illustrate using flow chart ,how collaboration in a co-authorship network can improve the flow of knowledge in the research. | | **CO2** | | PO6,PO9,PO10 | | | L2 | | | 6M |
| 11. | | Discuss with examples, the most common styles for citation used by engineers during research. | | **CO2** | | PO1,PO6,PO12 | | | L6 | | | 6M |
| 12. | | What are the characteristics of conceptualizing research .Explain in detail | | **CO2** | | PO2, PO12 | | | L1 | | | 6M |
| 13. | | What is technical reading explain in brief? | | **CO2** | | PO1,PO5,PO10 | | | L2 | | | 6M |
| 14. | | Explain google and google scholar with respect to research. | | **CO2** | | PO5,PO10.PO12 | | | L2 | | | 6M |
| 15. | | Discuss Prior-Art Search. | | **CO2** | | PO2,PO5,PO12 | | | L6 | | | 8M |
| 16. | | Elaborate effective search with example. | | **CO2** | | PO2,PO5,PO12 | | | L6 | | | 8M |
| 17. | | Explain the importance of Acknowledgement and attributions. | | **CO2** | | PO8,PO9,PO10 | | | L5 | | | 8M |
| Module III:  Introduction To Intellectual Property:  Role of IP in the Economic and Cultural Development of the Society, IP Governance, IP as a Global Indicator of Innovation.  Patents: Conditions for Obtaining a Patent Protection, To Patent or Not to Patent an Invention. Rights Associated with Patents. Enforcement of Patent Rights. Inventions Eligible for Patenting. Non-Patentable Matters. Patent Infringements. Avoid Public Disclosure of an Invention before Patenting. Process of Patenting. Choice of Application to be Filed. Patent Application Forms. Jurisdiction of Filing Patent Application. Publication. Examination. Grant of a Patent. Validity of Patent Protection. Commercialization of a Patent. Need for a Patent Attorney/Agent. Can a Worldwide Patent be  Obtained. Do I Need First to File a Patent in India. Patent Related Forms. Fee Structure. Types of Patent Applications. Commonly Used Terms in Patenting. National Bodies Dealing with Patent Affairs. Utility Models. Process of Patenting. Prior Art Search. Choice of Application to be Filed. Patent Application Forms. Jurisdiction of Filing Patent Application. Publication. Examination. Grant of a Patent. Validity of Patent Protection. | | | | | | | | | | | | |
| **Q. No.** | | **Questions** | | **CO** | | | PO | | RBT  Level | | Marks | |
| 1 | | Discuss Intellectual Property Rights (IPR) | | CO3 | | | PO1.PO6,PO12 | | L6 | | 5M | |
| 2 | | write a note on role of IP in economic & Cultural development of the society | | CO3 | | | PO6 | | L1 | | 8M | |
| 3 | | Outline the inventions eligible for patenting, Explain any 5 matters that are considered non-patentable? | | CO3 | | | PO1,PO6,PO12 | | L2 | | 10M | |
| 4 | | Define the term patent Explain invention and innovation in patent | | CO3 | | | PO5 | | L2 | | 6M | |
| 5 | | what are the conditions that must be met for obtaining patent protection? | | **CO3** | | | PO2,PO6 | | L1 | | 10M | |
| 6 | | Can a worldwide patent be obtained? Do I need First to File a patent in India? | | **CO3** | | | PO2,PO6 | | L4 | | 10M | |
| 7 | | Explain the commercialization of a patent? | | CO3 | | | PO6 | | L2 | | 8M | |
| 8 | | Discuss the commonly used terms in the domain of patenting. | | CO3 | | | PO6 | | L3 | | 5M | |
| 9 | | What is Patent Infringements? Explain two categories of Patent Infringements. | | CO3 | | | PO6 | | L2 | | 8M | |
| 10 | | With a flow chart explain the major steps involved in the grant of a patent | | CO3 | | | PO1,PO3 | | L6 | | 10M | |
| 11 | | Design a flow chart for the process of filling a patent application. | | CO3 | | | PO1,PO3 | | L6 | | 12M | |
| 12 | | Explain the different types of patent applications. | | CO3 | | | PO1,PO6 | | L2 | | 10M | |
| 13 | | List paid and unpaid Patents Databases and Expain the Non-Patent Literature. | | CO3 | | | PO6 | | L4 | | 8M | |
| 14 | | With a neat diagram Explain major steps involved in the grant of a patent. | | CO3 | | | PO1 | | L6 | | 10M | |
| 15 | | Elaborate the process of filing of patent application. | | CO3 | | | PO1,PO3 | | L6 | | 10M | |
| Module IV:  Copyrights and Related Rights:  Classes of Copyrights. Criteria for Copyright. Ownership of Copyright. Copyrights of the Author. Copyright Infringements. Copyright Infringement is a Criminal Offence. Copyright Infringement is a Cognizable Offence. Fair Use Doctrine. Copyrights and Internet. Non-Copyright Work. Copyright Registration. Judicial Powers of the Registrar of Copyrights. Fee Structure. Copyright Symbol. Validity of Copyright. Copyright Profile of India. Copyright and the word ‘Publish’. Transfer of Copyrights to a Publisher. Copyrights and the Word ‘Adaptation’. Copyrights and the Word ‘Indian Work’. Joint Authorship. Copyright Society. Copyright Board. Copyright Enforcement Advisory Council (CEAC). International Copyright Agreements, Conventions and Treaties.  Trademarks: Eligibility Criteria. Who Can Apply for a Trademark. Acts and Laws. Designation of Trademark Symbols. Classification of Trademarks. Registration of a Trademark is Not Compulsory. Validity of Trademark. Types of Trademark Registered in India. Trademark Registry. Process for Trademarks Registration. | | | | | | | | | | | | |
| 1 | | Define the term Copyright and write its classes. | | Co4 | | | PO6 | | L1 | | 10M | |
| 2 | | Design a flowchart for the process of  Trademarks Registration. | | Co4 | | | PO3 | | L6 | | 12M | |
| 3 | | Elaboratecriteria and ownership for copyright. | | Co4 | | | PO12 | | L3 | | 12M | |
| 4 | | Explain briefly the two exclusive rights owned by the copyright of the owner? | | Co4 | | | PO6, PO9 | | L2 | | 10M | |
| 5 | | List and explain the four-part test under ‘the fair use doctrine’ | | Co4 | | | PO10 | | L4 | | 8M | |
| 7 | | Outline non- copyright work. | | Co4 | | | PO7 | | L4 | | 10M | |
| 8 | | Elaborate the judicial Powers of the Registrar of Copyrights. | | Co4 | | | PO6 | | L2 | | 10M | |
| 9 | | With a flowchart, explain the steps involved in the process of Trademarks Registration. | | Co4 | | | PO7 | | L6 | | 12M | |
| 10 | | Discuss the copyright board and the copyright Society. | | Co4 | | | PO7 | | L1 | | 12M | |
| 11 | | Write a note on copyright Infringements. | | Co4 | | | PO3 | | L1 | | 5M | |
| 12 | | List the advantages the proprietor gains through trademark registration | | Co4 | | | PO6 | | L3 | | 8M | |
| 13 | | Design a flow chart for the process  of Copyright Registration. | | Co4 | | | PO7 | | L6 | | 12M | |
| 14 | | Define Trademark Explain its eligibility criteria. | | Co4 | | | PO9 | | L3 | | 8M | |
| 15 | | Mention 2 examples of Classes explain Classification of Trademark. | | Co4 | | | PO6 | | L1 | | 8M | |
| 16 | | Discuss who can apply for a Trademark and also give the designation of trademark symbols. | | Co4 | | | PO7 | | L6 | | 10M | |
| Module V:  Industrial Designs:  Eligibility Criteria. Acts and Laws to Govern Industrial Designs. Design Rights. Enforcement of Design Rights. Non-Protectable Industrial Designs India. Protection Term. Procedur for Registration of Industrial Designs. Prior Art Search. Application for Registration. Duration of the Registration of a Design. Importance of Design Registration. Cancellation of the Registered Design. Application Forms. Classification of Industrial Designs. Designs Registration Trend in India. International Treaties.  Geographical Indications: Acts, Laws and Rules Pertaining to GI. Ownership of GI. Rights Granted to the Holders. Registered GI in India. Identification of Registered GI. Classes of GI. Non-Registerable GI. Protection of GI. Collective or Certification Marks. Enforcement of GI Rights. Procedure for GI Registration Documents Required for GI Registration. GI Ecosystem in India. | | | | | | | | | | | | |
| 01 | | Elaborate the procedure for registration of industrial design | | Co5 | | | PO12 | | L6 | | 10 | |
| 02 | | Design the flow chart for the process of design registration | | Co5 | | | PO3 | | L3 | | 10 | |
| 03 | | Mention the importance of design registration and prerequisites considered for cancellation of registered design | | Co5 | | | PO6 | | L3 | | 8 | |
| 04 | | List the important form related to industrial design | | Co5 | | | PO10 | | L1 | | 8 | |
| 05 | | Define Geographical Indications. what are the possible rights granted for the holder in GI. | | Co5 | | | PO4 | | L2 | | 8 | |
| 06 | | Write a brief note on identification of registered GI | | Co5 | | | PO4 | | L1 | | 5 | |
| 07 | | Discuss the classes & Protection of GI | | Co5 | | | PO7 | | L6 | | 8 | |
| 08 | | List the documents required for GI Registration | | Co5 | | | PO4 | | L4 | | 6 | |
| 09 | | Discuss the procedure for GI registration | | Co5 | | | PO3 | | L3 | | 8 | |
| 10 | | With a neat diagram explain the flow chart for process of GI registration | | Co5 | | | PO7 | | L3 | | 10 | |
| 11 | | Briefly explain how GI will benefit the ecosystem in India | | Co5 | | | PO7 | | L4 | | 5 | |
| 12 | | Short note on Non-Registrable GI | | Co5 | | | PO10 | | L2 | | 8 | |
| 13 | | Illustrate the non-protectable industrial designs in India | | Co5 | | | PO6 | | L3 | | 8 | |
| 14 | | Outline the characteristics of industrial designs and explain some of the famous industrial designs | | Co5 | | | PO10 | | L3 | | 10 | |
| 15 | | Discuss the acts and laws to govern the industrial designs | | Co5 | | | PO6 | | L6 | | 10 | |