Reg.No. \_\_\_\_\_\_\_\_\_\_\_\_



**End Semester Examination – Nov/Dec – 2018**

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| **Code :** | **18MS3104** | **Duration :** | **3hrs** |
| **Sub. Name :** | **RESEARCH METHODOLOGY AND IPR** | **Max. marks :** | **100** |

**ANSWER ANY FIVE QUESTIONS (5 x 16 = 80 Marks)**

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| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. | a. | ZN Hurston said, “Research is formalized curiousity”. Write down the different types of research and the characteristics and requirements of research process. | CO2 | 10 |
| b. | List the criteria and characteristics of a good research problem. | CO2 | 6 |
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| 2. | a. | Define hypothesis. Write a note on the functions, testing and characteristics of hypothesis. | CO5 | 6 |
| b. | Explain the various steps in data processing. | CO5 | 10 |
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| 3. | a. | Electric vehicles, unlike conventional petrol and diesel vehicles, use one or more electric motors  for propulsion. Electric vehicles have a battery that is charged through an electricity supply. With advent of advance technology and dedicated R&D, both cost and maintenance of electric vehicles has gone down. Government is incentivizing the use of Electric Vehicles by providing subsidies and lower motor taxes on EVs. Tesla, BMW, Nissan, Chevrolet, Ford, Volkswagen, Kia are the 7 leading manufacturer of Electric Vehicles.  The Government of India has deputed you to collect data in order to find out ‘IS INDIA READY FOR ELECTRIC VEHICLES’?  What is the method of data collection will you use? Why?  What are the other methods of data collection? Why didn’t you prefer them? | CO6 | 10 |
| b. | Bring out the significance of reliability and validity in research instrumentation. | CO6 | 6 |
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| 4. |  | Review the need and importance of extensive literature survey in approaching a research problem. | CO5 | 16 |
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| 5. | a. | Describe in detail about important steps to be followed while writing a research paper. | CO6 | 8 |
| b. | Illustrate the key points that should be followed while oral presentation before a review committee. | CO6 | 8 |
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| 6. | a. | Outline the nature of intellectual property and present the process of patenting and development. | CO1 | 10 |
| b. | Present an overview of the international scenario of IPR. | CO1 | 6 |
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| 7. | a. | Write a short note on patent rights. | CO3 | 8 |
| b. | Detail on patent information and databases. | CO3 | 8 |
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| **COMPULSORY QUESTION (1 x 20 = 20 Marks)** | | | | |
| 8. | a. | With suitable case studies, brief about traditional knowledge and intellectual property. | CO4 | 10 |
| b. | Discuss in detail about IPR of biological systems. | CO4 | 10 |