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



**End Semester Examination – Nov / Dec – 2019**

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
| **Code :** | **16MA4001** | **Duration :** | **3hrs** |
| **Sub. Name :** | **RESEARCH METHODOLOGY** | **Max. Marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Q. No.** | **Sub Div.** | | **Questions** | **Course Outcome** | **Marks** |
| 1. | a. | | Differentiate between applied research and basic research. Elaborate on the impact of such research on the community/society. | CO1 | 10 |
| b. | | Enumerate the factors to be considered while selecting a research problem. With a neat flowchart explain the procedure to arrive at a research problem statement. | CO1 | 10 |
|  | | **(OR)** | | | |
| 2. | a. | | With respect to your specific area of research, define the research methodology that will be adopted and list down the tools that will be used in your research. Also mention how those tools are effective in solving your problem statement. | CO2 | 15 |
| b. | | In your perspective, what are the criteria for a good research work? | CO2 | 5 |
|  |  | |  |  |  |
| 3. | a. | | Define Research Design. Explain its importance in carrying out research work. Enumerate the various types of research design. | CO3 | 10 |
| b. | | Elaborate the procedures that are followed to articulate a research design for descriptive research studies. | CO3 | 10 |
|  | | **(OR)** | | | |
| 4. | a. | | Differentiate between Research Design and Experiment Design. | CO1 | 10 |
| b. | | Explain the significance and importance of literature review in research. Write down the various components in writing an effective literature review paper. | CO1 | 10 |
|  |  | |  |  |  |
| 5. | a. | | How would a data set affect the quality of research? Justify your statement with case studies in your relevant area of research. | CO2 | 10 |
| b. | | List the various Data collection techniques and explain them in detail with neat flowcharts. | CO2 | 10 |
|  | **(OR)** | | | | |
| 6. |  | | The marks of 10 students in two subjects Mathematics and Physics are given below.   |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | Maths X | 72 | 58 | 49 | 38 | 66 | 81 | 80 | 40 | 62 | 71 | | Physics Y | 86 | 45 | 70 | 48 | 65 | 90 | 92 | 60 | 72 | 76 |   Find   1. the correlation coefficient between them 2. both lines of regression  on  and  on. 3. the mark of Mathematics when the mark in Physics is 85. 4. the mark of Physics when the mark in Mathematics is 75. | CO3 | 20 |
|  |  | |  |  |  |
| 7. | a. | | List a few software tools used for managing the citations. Explain their impact of writing a technical report or research report. | CO1 | 10 |
| b. | | What are the code of ethics to be followed in carrying out a research? Explain each one in detail with relevant examples. | CO1 | 10 |
|  | | **(OR)** | | | |
| 8. | a. | | Mention the precautions that are required while disseminating your research work. Give a check list that should be followed by researchers while submitting a research report in public forum and journals. | CO2 | 10 |
| b. | | Write about your understanding on (i) Impact factor (ii) h-index | CO2 | 10 |
|  | | | **Compulsory:** |  |  |
| 9. |  | | A study of the number of business lunches that executives in the insurance and banking industries claim as deductible expenses per month was based on random samples and yielded the following results:  n1 = 40 x1 = 9.1 s1 = 1.9  n2 = 50 x2 = 8.0 s2 = 2.1  Test the null hypothesis µ1 - µ2 = 0 against the alternative hypothesis µ1 - µ2 ≠ 0 at α = 0.05 significance level. | CO3 | 20 |