Time: 3 Hours
Max. Marks: 100

General Instructions:

IMP: *Verify that you have received the question paper with the correct course, code, branch etc.*

1. This Question paper comprises of three Sections -A, B, & C. It consists of Multiple Choice Questions (MCQ's) & Subjective type questions.

2. Maximum marks for each question are indicated on right -hand side of each question.

3. Illustrate your answers with neat sketches wherever necessary.

4. Assume suitable data if necessary.

5. Preferably, write the answers in sequential order.

6. No sheet should be left blank. Any written material after a blank sheet will not be evaluated/checked.

SECTION-A
20

1. Attempt all parts:-

1-a.   Motivation Research is a type of .... research   (CO1, K1)   1

    (a)   Quantitative

    (b)   Qualitative

    (c)   Pure

    (d)   applied

1-b.   Which of the following does not correspond to characteristics of research? (CO1, K1)   1

    (a)   Research is not passive

    (b)   Research is systematic

    (c)   Research is not a problem-oriented

    (d)   Research is not a process

1-c.   In the research process, identify the step that involves a review of relevant studies? (CO2, K2)   1

    (a)   Review of Literature

    (b)   Data Analysis

    (c)   Problem Identification

    (d)   Designing Research Methodology

1-d.   The purpose of data collection in the research process is to: (CO2, K1)   1

    (a)   Obtain information that addresses the research questions

(b)   Formulate the research hypothesis

(c)   Understand the research problem

(d)   Interpret the research findings

1-e.   The most important advantage of sampling method of data collection is: (CO3, K1)   1

(a)   Increase accuracy

(b)   The only method of data collection

(c)   Save time

(d)   Easy to handle the data

1-f.   Identify the following aspects is a disadvantage of online questionnaires? (CO3, K2)   1

(a)   Low response rate

(b)   Self-selecting bias

(c)   Lack of opportunity to clarify issues

(d)   All of the above

1-g.   Select the levels that must there be in one independent variable for an ANOVA to be used? (CO4, K2)   1

(a)   3

(b)   1

(c)   2

(d)   4

1-h.   Statistical Hypothesis is derived from (CO4, K2)   1

(a)   Frame

(b)   Data

(c)   Sample

(d)   Facts

1-i.   The h index is use to measure (CO5, K1)   1

(a)   The Quality of Journal

(b)   an author's scholarly output and performance

(c)   citation of a paper

(d)   none of these

1-j.   The first page of the research report is (CO5, K1)   1

(a)   Appendix

(b)   Bibliography

(c)   Index

(d)   Title Page

2. Attempt all parts:-

2.a.   Briefly mention the content of methodology section in research. (CO1, K1)   2

2.b.	Discuss any two objectives of a research problem.(CO2, K2)	2
2.c.	Interpret any four methods of collecting primary data. (CO3, K3)	2
2.d.	Sketch short notes on conceptual research with flow diagram. (CO4, K3)	2
2.e.	Demonstrate the usage and importance of Google scholar? (CO5, K3)	2

SECTION-B   30

3. Answer any <u>five</u> of the following:-

3-a.	Discuss in detail the different types and approaches of research. (CO1, K2)	6
3-b.	Classify between conceptual and empirical research with example. (CO1, K2)	6
3-c.	Demonstrate how does formulating a hypothesis fit into the research process. (CO2, K3)	6
3-d.	Explain how does a literature review help in narrowing the research focus. (CO2, K2)	6
3-e.	Indicate the ethical considerations involved in data collection and their justification in conducting a research. (CO3, K2)	6
3.f.	Researchers have conducted a survey of 1600 coffee drinkers asking how much coffee they drink in order to confirm previous studies. Previous studies have indicated that 72% of Americans drink coffee. The results of previous studies (left) and the survey (right) are below. At = 0.05, is there enough evidence to conclude that the distributions are the same? (*Note: Critical value from chi-square table=7.815) (CO4, K4)	6

Response % of Coffee Drinkers
2 cups per week 15%
1 cup per week 13%
1 cup per day 27%
2+ cups per day 45%

Response Frequency
2 cups per week 206
1 cup per week 193
1 cup per day 462
2+ cups per day 739

| 3.g. | Describe copyright and related rights and explain their significance? (CO5,K2) | 6 |

SECTION-C   50

4. Answer any <u>one</u> of the following:-

| 4-a. | Formulate a research objective to address a real-world problem in healthcare. (CO1, K3) | 10 |
| 4-b. | Outline a methodology for conducting a survey on customer satisfaction in retail. (CO1, K3) | 10 |

5. Answer any <u>one</u> of the following:-

| 5-a. | Describe the different sources of literature for research. (CO2, K2) | 10 |

5-b.   Discuss how do you ensure reliability and validity in research methodology. (CO2, K3)   10

6. Answer any <u>one</u> of the following:-

6-a.   Plan and draft a sampling strategy to study voting behavior in a local election. (CO3, K3)   10

6-b.   Analyze ethical implications of using anonymous social media data for market research. (CO3, K4)   10

7. Answer any <u>one</u> of the following:-

7-a.   Apply ANOVA to compare test scores from three different teaching methodologies.(CO4, K3)   10

7-b.   Examine the importance of data visualization in monitoring research progress. (CO4, K2)   10

8. Answer any <u>one</u> of the following:-

8-a.   Outline an IMRAD structure for a research paper on virtual reality in education. (CO5, K3)   10

8-b.   Prepare and organize a conference presentation summarizing findings on AI in supply chain optimization. (CO5, K4)   10

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