

Research Methodology

Surprise Test-1

Scenario 1 – Online Learning Platforms

A college wants to study whether using **online learning platforms (like Coursera, NPTEL, or Udemy)** improves students' academic performance compared to traditional classroom teaching.

Answer the following:

1. Define the **research problem**. (2 marks)
2. Identify a possible **research gap**. (2 marks)
3. Frame a **null and alternative hypothesis**. (2 marks)
4. Suggest an appropriate **research design** and justify it. (2 marks)
5. Mention one possible **source of primary data** and one **source of secondary data**. (2 marks)

Scenario 2 – Social Media & Study Habits

A researcher wants to investigate how **social media usage (Instagram, YouTube, WhatsApp)** affects students' concentration and study time.

Answer the following:

1. State the **objective of this research**. (2 marks)
2. Identify the **type of research** (fundamental, applied, descriptive, experimental). (2 marks)
3. Formulate a suitable **hypothesis**. (2 marks)
4. Suggest a method to **collect primary data** for this study. (2 marks)
5. State one possible **ethical issue** in this study and how to handle it. (2 marks)

Scenario 3 – E-Books vs Printed Books

Your university library wants to analyze whether students **prefer e-books over printed books** and if this preference affects their learning effectiveness.

Answer the following:

1. Frame the **research problem**. (2 marks)
2. Identify whether this is **exploratory, descriptive, or experimental research**. (2 marks)
3. Write one **research question** and one **hypothesis**. (2 marks)
4. Suggest an appropriate **sampling method** to collect student opinions. (2 marks)
5. Mention one **criterion of good research** that applies here. (2 marks)

Scenario 4 – Attendance & Performance

A study is planned to find out whether **regular class attendance** improves students' performance in final exams.

Answer the following:

1. Identify the **research problem**. (2 marks)
2. State the **dependent variable** and **independent variable**. (2 marks)
3. Frame a **hypothesis** for this research. (2 marks)
4. Which **research design** is most appropriate here? Explain. (2 marks)
5. Mention one **limitation** this research might face. (2 marks)

Scenario 5 – Group Projects vs Individual Assignments

A teacher wants to study whether **group projects** help students learn better compared to **individual assignments**.

Answer the following:

1. Identify the **research problem**. (2 marks)
2. State one **research objective**. (2 marks)
3. Frame a **hypothesis** for this study. (2 marks)
4. Suggest a suitable **research design** and justify. (2 marks)
5. Mention one **ethical concern** in group research studies. (2 marks)

Scenario 6 – Use of ChatGPT in Learning

Students are increasingly using **AI tools like ChatGPT** for assignments. A study is proposed to check whether this practice **improves understanding** or just encourages **copy-paste behavior**.

Answer the following:

1. Write the **research problem**. (2 marks)
2. State whether this is **applied or fundamental research**, and why. (2 marks)
3. Frame one **null hypothesis**. (2 marks)
4. Suggest one **method of data collection**. (2 marks)
5. Mention one **criterion of good research** applicable here. (2 marks)

Scenario 7 – Effect of Campus Wi-Fi Speed on Learning

A university wants to explore whether **fast and reliable Wi-Fi** improves students' ability to access online learning resources effectively.

Answer the following:

1. Identify the **research problem**. (2 marks)
2. Mention one possible **research gap**. (2 marks)
3. Frame a suitable **hypothesis**. (2 marks)
4. Suggest the best **research design** and justify. (2 marks)
5. State one **limitation** of this study. (2 marks)