True / False

Research in computing always requires conducting experiments.

A hypothesis is a testable statement about the relationship between variables.

Pure research is conducted primarily to solve immediate practical problems.

Anonymizing data helps protect participant privacy.

Research misconduct includes data fabrication and falsification.

Applied research aims to solve specific, real-world problems.

Descriptive statistics summarize data using measures like mean and standard deviation.

A p-value less than 0.05 typically indicates statistical significance.

A research question must be broad to allow flexibility in findings.

The research process typically begins with identifying a problem.

Literature review is optional in computing research.

A research gap is an area that has been thoroughly studied.

Logistic regression is used when the outcome variable is continuous.

The abstract should include detailed methodology and statistical results.

The introduction should end with research questions or hypotheses.

Reproducibility is not important in computing research.

Peer-reviewed journals are a reliable source of academic information.

An abstract summarizes the entire research paper.

Plagiarism can occur even if you cite the source incorrectly.

Peer review always guarantees a paper is correct.

Conference papers in computing are often peer-reviewed.

A literature review only includes sources that support your hypothesis.

Zotero and Mendeley help manage citations and references.

LaTeX is used for writing technical documents and research papers.

Independent variables are the outcomes being measured.

Dependent variables are influenced by independent variables.

Qualitative research focuses on numerical data.

Quantitative research uses statistical analysis.

Mixed methods combine qualitative and quantitative approaches.

A pilot study is a small-scale version of the main study.

Case studies are only used in qualitative research.

Reproducibility means obtaining the same results using the same data and code.

AI-generated text can be used in research papers without disclosure.

In qualitative research, sample size is determined by data saturation.

Fill-in Questions

_____ improves validity by using multiple data sources or methods.

A formal plan for conducting research is a research _____.

The _____ is a brief summary of the entire research paper.

Copying someone else's work without credit is _____.

The list of all sources cited in a paper is called the _____.

_____ is a version control system often used to track code and collaboration.

A _____ review ensures quality before publication.

Journals that charge fees without proper review are called _____ journals.

A unique identifier for academic papers is a _____.

The _____ section interprets the results and relates them to prior work.

The _____ section describes how data was collected and analyzed.

_____ research aims to explore a topic with little prior knowledge.

_____ research tests specific hypotheses using structured methods.

A _____ is a broad explanation supported by extensive evidence, while a hypothesis is testable.

_____ break down a particular subject or research question into lower and lower levels of detail

The - _____ research process model recognises that research methods) itself evolve and change over time

The _____ measures how spread out the data is from the mean.

The _____ section of a paper summarizes the entire study in 150–300 words.

The _____ section presents the findings without interpretation.

A _____ is a formal document submitted for a degree, such as a PhD.

_____ of a paper is an individual who made a significant intellectual contribution to the work described in the paper

Longest-duration path through a network identifies the tasks in the project that must not be delayed is called _____

In computing research, _____ diagrams represent the order and inter-dependency of tasks where tasks are represented by rectangular nodes, milestones are represented by diamond-shape nodes and arrows indicate the order in which they need to be performed

A work or invention that is the result of creativity, such as a manuscript or a design, to which one has rights and for which one may apply for a patent, copyright, trademark, etc is referred to as _____

_____ is the unethical use of others' ideas or words without credit.

_____ is a tool for managing bibliographic references (e.g., citations).

_____ reasoning proceeds from our knowledge of the world (theories) and predicts 'likely' observations

MCQs

What is a hypothesis in research?
    a. A proven fact
    b. A random guess
    c. A testable statement predicting a relationship
    d. A summary of findings

What is the first step in the research process?
    a. Writing the paper
    b. Collecting data
    c. Identifying a research problem
    d. Analyzing results

Which research approach is most suitable for exploring user interactions with a new software interface?
    a. Qualitative research
    b. Quantitative research
    c. Mixed-methods research
    d. Experimental research

A literature review helps researchers:
    a. Avoid reading previous studies
    b. Identify gaps in existing knowledge
    c. Skip the methodology section
    d. Use only outdated sources

Which of the following is an example of a primary data source in computing research?
    a. Literature review
    b. User survey responses
    c. Published journal articles

d. Online blogs

What does the term "validity" refer to in research methods?
a. The consistency of research results
b. The accuracy of the research in measuring what it intends to measure
c. The sample size of the study
d. The statistical significance of results

What does reliability refer to in research?
a. Whether the study measures what it claims
b. How consistent the measurement is
c. The ethical standards used
d. The number of participants

Which research design is most appropriate for testing the performance of two algorithms under controlled conditions?
a. Case study
b. Experimental design
c. Ethnography
d. Grounded theory

The abstract of a paper is
a. A detailed methodology
b. A full literature review
c. A brief summary of the entire paper
d. A list of references

What is the purpose of a literature review in computing research?
a. To summarize existing knowledge and identify gaps
b. To implement a new algorithm
c. To collect primary data
d. To design a user interface

Which ethical principle ensures that participants in a user study are not harmed?
a. Informed consent
b. Beneficence
c. Confidentiality
d. Anonymity

What is the main advantage of using mixed-methods research in computing?
a. It reduces research time
b. It combines strengths of qualitative and quantitative approaches
c. It eliminates the need for data analysis
d. It avoids ethical considerations

Which of the following is essential in ethical research?
a. Data fabrication
b. Informed consent
c. Hiding results
d. Ignoring literature

Action research is commonly used in:
a. Isolated labs
b. Organizational or educational settings
c. Theoretical physics
d. Non-interactive systems

Which of the following is a common tool for managing references in computing research?
   a. MATLAB
   b. Zotero
   c. Python
   d. TensorFlow

What is the purpose of a null hypothesis in statistical testing?
   a. To prove the research hypothesis
   b. To assume no effect or relationship exists
   c. To collect qualitative data
   d. To design experiments

What is the main purpose of a Gantt chart in research planning?
   a. To analyze data
   b. To collect user feedback
   c. To write research papers
   d. To visualize project timelines and tasks

What is informed consent in computing research?
   a. Permission from participants after explaining the study
   b. A type of software license
   c. Ethical approval from a university
   d. A data encryption method

Which of the following is an ethical issue in AI research?
   a. Bias in datasets
   b. High computational cost
   c. Debugging errors
   d. None of the above

Internal validity refers to:
   a. Generalizability of results
   b. Accuracy of conclusions within the study
   c. Ethical compliance
   d. Data storage methods

Plagiarism in research means:
   a. Using open-source code
   b. Copying others' work without credit
   c. Collaborating with peers
   d. None of the above

Which of the following is a key characteristic of a good research question?
   a. It is broad and vague
   b. It is unrelated to the field
   c. It is based on assumptions
   d. It is specific and answerable

What is the purpose of a research design?
   a. To format research papers
   b. To structure the research process
   c. To write code efficiently
   d. To analyze data

Which design is used to study rare phenomena in cybersecurity?
   a. Case study

b. Survey
c. Experiment
d. Ethnography

A researcher testing a new algorithm's efficiency uses:
    a. Qualitative research
    b. Quantitative research
    c. Action research
    d. Grounded theory

What is a control group used for in experimental research?
    a. To compare results with the experimental group
    b. To debug software
    c. To collect qualitative data
    d. To write research proposals

Which methodology is best for studying user behavior with a new app?
    a. Simulation
    b. Survey
    c. Observational study
    d. All of the above

What is the main purpose of a research methodology section in a paper?
    a. To present results
    b. To summarize the literature
    c. To describe how the research was conducted
    d. To discuss future work

What is the main advantage of using a survey in computing research?
    a. It provides in-depth qualitative data
    b. It allows for large-scale data collection
    c. It eliminates the need for analysis
    d. It ensures experimental control

Which of the following is a common method for ensuring data privacy in computing research?
    a. Data encryption
    b. Increasing sample size
    c. To present raw data
    d. Conducting experiments

What is the primary goal of research in computing?
    a. Developing software
    b. Advancing knowledge systematically
    c. Debugging code
    d. Writing research papers

Which of the following is NOT a characteristic of good research?
    a. Empirical
    b. Subjective
    c. Replicable
    d. Logical

What type of research focuses on solving practical problems in computing?
    a. Basic research
    b. Applied research
    c. Exploratory research

d. Descriptive research

A hypothesis in computing research is:
    a. A proven fact
    b. A tentative explanation
    c. A programming language
    d. A type of algorithm

Which research approach is common in AI studies?
    a. Qualitative
    b. Mixed-methods
    c. Experimental
    d. All of the above

What is the main purpose of a research abstract?
    a. To provide a detailed methodology
    b. To list references
    c. To summarize the entire research paper
    d. To present raw data

Which of the following is a primary source in computing research?
    a. A textbook summarizing machine learning
    b. A research paper on neural networks published in a conference
    c. A blog post about AI
    d. A news article on robotics

What does "peer-reviewed" mean?
    a. Reviewed by friends
    b. Reviewed by students
    c. Reviewed by experts in the field before publication
    d. Automatically accepted

Which of the following is NOT a common computing research domain?
    a. Artificial Intelligenc
    b. Software Engineering
    c. Mechatronics
    d. Cybersecurity

Which paradigm emphasizes objective, measurable data?
    a. Interpretivism
    b. Constructivism
    c. Positivism
    d. Behaviorism

What is the role of theory in research?
    a. To replace experimentation
    b. To provide a framework for understanding phenomena
    c. To make research longer
    d. To confuse readers

Which of the following is a research objective?
    a. "To publish a paper"
    b. "To understand factors affecting software maintainability"
    c. "To become famous"
    d. "To become Nobel Prize winner"

What is the difference between aims and objectives?
   a. Aims are vague, objectives are specific
   b. Aims are specific, objectives are vague
   c. No difference
   d.   Aims are for funding, objectives are for writing

Which of the following is essential for ethical research?
   a. Hiding data
   b. Informed consent
   c. Fabricating results
   d. Plagiarism

What is research design?
   a. The color scheme of a paper
   b. The plan for collecting and analyzing data
   c. The font used in a report
   d.   The number of pages in a thesis

Random assignment is important in experiments to:
   a. Make the study longer
   b. Increase cost
   c. Ensure all participants are similar
   d. Reduce selection bias

Which design is used to explore a phenomenon in depth?
   a. Survey
   b. Case study
   c. Cross-sectional
   d. Experimental

Which design is best for testing a new machine learning model's accuracy?
   a. Case study
   b. Ethnography
   c. Grounded theory
   d. Experimental

Which method is best for gathering in-depth user feedback on a mobile app?
   a. Experiment
   b. Survey
   c. Interview
   d. Observational study

Which tool is commonly used to collect data in usability testing?
   a. Compiler
   b. Database
   c. Web server
   d. Eye-tracking device

What is a prototype in computing research?
   a. A final product
   b.   An early model for testing
   c. A research paper
   d. A survey instrument

What is a questionnaire?
   a. A list of research questions

b. A coding challenge
c. A set of written questions for respondents
d. A software bug report

What is the main characteristic of quantitative research?
a. Uses numerical data and statistical analysis
b. Focuses on subjective experiences
c. Uses only case studies
d. Avoids mathematical models

In computing research, what does "reproducibility" mean?
a. The ability to get the same results when repeating an experiment
b. The ability to publish the same paper twice
c. The ability to use the same methodology in different fields
d. The ability to reproduce hardware components

What is a research hypothesis?
a. A proven fact
b. A testable prediction about the relationship between variables
c. A summary of results
d. A literature review

Which research approach starts with observations and develops theories?
a. Deductive
b. Inductive
c. Abductive
d. Reductive

What is the difference between validity and reliability in research?
a. They are the same concept
b. Validity measures accuracy, reliability measures consistency
c. Validity measures consistency, reliability measures accuracy
d. Neither is important in computing research

What is a research paradigm?
a. A specific programming language
b. A philosophical framework guiding research methodology
c. A type of computer hardware
d. A statistical test

What is grounded theory?
a. A theory tested in experiments
b. A statistical model
c.   A method to develop theory from qualitative data
d. A programming paradigm

Which of the following is a source of secondary data?
a. Which of the following is a source of secondary data?
b. Running experiments
c. Using public datasets such as kaggle
d. Observing users

Which metric is commonly collected in usability testing?
a. Lines of code
b. Task completion time
c. CPU temperature

    d.   Network bandwidth

What is the main advantage of using sensors in data collection?
    a. They replace human participants
    b. They are always accurate
    c. They eliminate the need for analysis
    d. They provide objective, continuous data