

**1. Which of the following is the first step in the research process?**

- a) Data collection
- b) Problem identification
- c) Hypothesis formulation
- d) Literature review

**Answer:** b) Problem identification

---

**2. A hypothesis is:**

- a) A statement of fact
- b) A testable prediction about the relationship between variables
- c) A conclusion drawn from data
- d) A method of data analysis

**Answer:** b) A testable prediction about the relationship between variables

---

**3. In qualitative research, the primary aim is to:**

- a) Establish causation
- b) Explore and understand phenomena
- c) Measure variables
- d) Test hypotheses

**Answer:** b) Explore and understand phenomena

---

**4. Which of the following sampling techniques ensures every member of the population has an equal chance of selection?**

- a) Systematic sampling
- b) Convenience sampling
- c) Random sampling
- d) Quota sampling

**Answer:** c) Random sampling

---

**5. The term “empirical research” refers to research that is based on:**

- a) Theoretical models
- b) Observations and experiments
- c) Previous literature
- d) Personal opinions

**Answer:** b) Observations and experiments

---

**6. The dependent variable in a study is:**

- a) Manipulated by the researcher
- b) Measured as an outcome of the study
- c) Held constant throughout the experiment
- d) Always a categorical variable

**Answer:** b) Measured as an outcome of the study

---

**7. What is the main purpose of a literature review in research?**

- a) To publish previous research
- b) To identify gaps in existing knowledge
- c) To test a hypothesis
- d) To design an experiment

**Answer:** b) To identify gaps in existing knowledge

---

**8. When a researcher uses numerical data to make inferences about a population, they are conducting:**

- a) Quantitative research
- b) Qualitative research
- c) Mixed-methods research
- d) Action research

**Answer:** a) Quantitative research

---

**9. Which of the following scales is the most appropriate for measuring attitudes or opinions?**

- a) Nominal scale
- b) Ordinal scale
- c) Interval scale
- d) Likert scale

**Answer:** d) Likert scale

---

**10. The process of verifying the reliability and validity of research instruments is called:**

- a) Standardization
- b) Testing
- c) Validation
- d) Calibration

**Answer:** c) Validation

---

**11. A longitudinal study is characterized by:**

- a) Studying different groups at the same time
- b) Collecting data at a single point in time
- c) Observing the same group over a long period
- d) Conducting experimental research

**Answer:** c) Observing the same group over a long period

---

**12. The primary aim of applied research is to:**

- a) Develop new theories
- b) Solve practical problems
- c) Test hypotheses
- d) Review existing literature

**Answer:** b) Solve practical problems

---

**13. The term “triangulation” in research refers to:**

- a) Using three data points to analyze results
- b) Combining multiple research methods to study a phenomenon
- c) Conducting three replicates of an experiment
- d) Testing three hypotheses in a single study

**Answer:** b) Combining multiple research methods to study a phenomenon

---

**14. Which of the following methods is most commonly used in exploratory research?**

- a) Surveys
- b) Experiments
- c) Case studies
- d) Observational studies

**Answer:** c) Case studies

---

**15. Ethical considerations in research include all of the following EXCEPT:**

- a) Informed consent
  - b) Plagiarism
  - c) Confidentiality
  - d) Accurate reporting
- Answer:** b) Plagiarism

---

**16. The term “null hypothesis” refers to the hypothesis that:**

- a) There is a significant effect or relationship
  - b) There is no significant effect or relationship
  - c) The independent variable influences the dependent variable
  - d) The research findings are accurate
- Answer:** b) There is no significant effect or relationship

---

**17. A control group in an experiment is:**

- a) Subjected to the experimental treatment
  - b) Used to eliminate alternative explanations
  - c) Excluded from the analysis
  - d) A secondary group of researchers
- Answer:** b) Used to eliminate alternative explanations

---

**18. A variable that mediates the relationship between the independent and dependent variables is called a:**

- a) Moderator variable
  - b) Confounding variable
  - c) Mediator variable
  - d) Extraneous variable
- Answer:** c) Mediator variable
-

**19. A “pilot study” is conducted to:**

- a) Solve a major problem
- b) Test the feasibility of the main study
- c) Compare two experimental groups
- d) Validate data collection tools

**Answer:** b) Test the feasibility of the main study

---

**20. “Data saturation” in qualitative research means:**

- a) Collecting data until no new themes or insights emerge
  - b) Collecting data from the entire population
  - c) Using multiple data collection methods
  - d) Achieving the highest possible response rate
- Answer:** a) Collecting data until no new themes or insights emerge
- 

**21. The independent variable in research is:**

- a) Controlled by the researcher
  - b) The outcome measured in the study
  - c) Dependent on other variables
  - d) Always numerical
- Answer:** a) Controlled by the researcher
- 

**22. Which of the following is NOT a probability sampling method?**

- a) Stratified sampling
  - b) Systematic sampling
  - c) Snowball sampling
  - d) Cluster sampling
- Answer:** c) Snowball sampling
- 

**23. A case study is an example of:**

- a) Descriptive research
  - b) Experimental research
  - c) Quantitative research
  - d) Longitudinal research
- Answer:** a) Descriptive research
-

**24. The term “construct validity” refers to:**

- a) The extent to which a test measures what it claims to measure
- b) The accuracy of the measurement
- c) The generalizability of the findings
- d) The consistency of the results

**Answer:** a) The extent to which a test measures what it claims to measure

---

**25. Which of the following is the best measure of central tendency when the data has outliers?**

- a) Mean
- b) Median
- c) Mode
- d) Range

**Answer:** b) Median

---

**26. Which of the following tools is commonly used in qualitative research?**

- a) Questionnaire
- b) Interview guide
- c) Experiment
- d) Survey form

**Answer:** b) Interview guide

---

**27. Research aimed at finding a solution for an immediate problem is called:**

- a) Fundamental research
- b) Pure research
- c) Basic research
- d) Action research

**Answer:** d) Action research

---

**28. The type of sampling where researchers select participants based on ease of access is called:**

- a) Convenience sampling
- b) Stratified sampling
- c) Purposive sampling
- d) Systematic sampling

**Answer:** a) Convenience sampling

---

**29. When research findings can be applied to settings beyond the study, it is said to have:**

- a) Internal validity
  - b) External validity
  - c) Construct validity
  - d) Predictive validity
- Answer:** b) External validity

---

**30. The graphical representation of a frequency distribution is called a:**

- a) Histogram
  - b) Pie chart
  - c) Scatter plot
  - d) Line graph
- Answer:** a) Histogram

---

**31. Which research design is best suited for studying cause-and-effect relationships?**

- a) Correlational research
  - b) Experimental research
  - c) Descriptive research
  - d) Exploratory research
- Answer:** b) Experimental research

---

**32. A research design that combines both qualitative and quantitative methods is called:**

- a) Mixed-methods research
  - b) Multimodal research
  - c) Integrated research
  - d) Comprehensive research
- Answer:** a) Mixed-methods research
-

**33. In research terminology, the term “operational definition” refers to:**

- a) A universally accepted definition of a concept
- b) Theoretical explanation of a concept
- c) Defining variables in terms of measurement procedures
- d) A complex hypothesis

**Answer:** c) Defining variables in terms of measurement procedures

---

**34. Which statistical test is used to determine the relationship between two variables?**

- a) ANOVA
- b) Correlation analysis
- c) Chi-square test
- d) Regression analysis

**Answer:** b) Correlation analysis

---

**35. The purpose of a pilot study is to:**

- a) Validate the research hypothesis
- b) Conduct a mini version of the main study
- c) Perform a detailed literature review
- d) Analyze the data in advance

**Answer:** b) Conduct a mini version of the main study

---

**36. What is the main characteristic of descriptive research?**

- a) It involves hypothesis testing
- b) It describes characteristics of a population or phenomenon
- c) It predicts future trends
- d) It determines cause-and-effect relationships

**Answer:** b) It describes characteristics of a population or phenomenon

---



**37. Informed consent in research ensures that participants:**

- a) Are compensated for their time
- b) Participate voluntarily after understanding the study details
- c) Provide data anonymously
- d) Agree to publish the results

**Answer:** b) Participate voluntarily after understanding the study details

---

**38. The type of research that seeks to answer “what” questions is:**

- a) Explanatory research
- b) Descriptive research
- c) Exploratory research
- d) Experimental research

**Answer:** b) Descriptive research

---

**39. Which of the following is an example of primary data?**

- a) Data collected from previous studies
- b) Data collected through surveys
- c) Data obtained from books
- d) Data derived from government reports

**Answer:** b) Data collected through surveys

---

**40. In hypothesis testing, a p-value less than 0.05 indicates:**

- a) The null hypothesis is true
- b) Strong evidence against the null hypothesis
- c) No significant difference
- d) Insufficient sample size

**Answer:** b) Strong evidence against the null hypothesis

**41. Research is considered reliable if:**

- a) It is conducted by a famous researcher
- b) It is free from bias
- c) It produces consistent results over time
- d) It has a large sample size

**Answer:** c) It produces consistent results over time

---

**42. An example of secondary data is:**

- a) Data collected from a survey
- b) Data obtained from government publications
- c) Data collected during an experiment
- d) Data obtained from direct interviews

**Answer:** b) Data obtained from government publications

---

**43. The Hawthorne Effect refers to:**

- a) A change in participants' behavior due to their awareness of being observed
- b) A bias introduced by the researcher
- c) The impact of sample size on results
- d) A specific statistical error

**Answer:** a) A change in participants' behavior due to their awareness of being observed

---

**44. When data is collected at a single point in time, the study is called:**

- a) Longitudinal
- b) Experimental
- c) Cross-sectional
- d) Comparative

**Answer:** c) Cross-sectional

---

**45. Which of the following is a feature of qualitative research?**

- a) It is objective and numerical
- b) It focuses on meaning and context
- c) It relies on structured questionnaires
- d) It uses statistical analysis extensively

**Answer:** b) It focuses on meaning and context

---

**46. The purpose of using a control group in an experiment is to:**

- a) Increase the sample size
- b) Serve as a basis for comparison
- c) Eliminate the independent variable
- d) Randomize the sample

**Answer:** b) Serve as a basis for comparison

---

**47. Which of the following is an example of non-probability sampling?**

- a) Simple random sampling
- b) Stratified sampling
- c) Purposive sampling
- d) Systematic sampling

**Answer:** c) Purposive sampling

---

**48. Which of the following is a graphical representation of data distribution?**

- a) Frequency table
- b) Histogram
- c) Sampling frame
- d) Literature review

**Answer:** b) Histogram

---

**49. What is the primary aim of basic research?**

- a) Solve immediate problems
- b) Advance theoretical knowledge
- c) Test specific applications
- d) Develop commercial products

**Answer:** b) Advance theoretical knowledge

---

**50. Which type of validity is concerned with whether the findings can be generalized to other settings?**

- a) Construct validity
- b) Internal validity
- c) External validity
- d) Predictive validity

**Answer:** c) External validity

---

**51. A hypothesis is rejected when:**

- a) The p-value is greater than 0.05
- b) The results do not support the null hypothesis
- c) The independent variable is constant
- d) The data collection method is flawed

**Answer:** b) The results do not support the null hypothesis

---

**52. A Likert scale is commonly used to measure:**

- a) Physical attributes
- b) Attitudes or opinions
- c) Statistical variance
- d) Experimental outcomes

**Answer:** b) Attitudes or opinions

---

**53. Which of the following methods is used to determine the sample size in research?**

- a) Convenience sampling
- b) Statistical formulae
- c) Randomization
- d) Hypothesis testing

**Answer:** b) Statistical formulae

---

**54. The process of systematically organizing and summarizing research findings is called:**

- a) Analysis
- b) Interpretation
- c) Coding
- d) Data tabulation

**Answer:** d) Data tabulation

---

**55. In research, a confounding variable is:**

- a) A variable unrelated to the study
- b) A variable that affects both the independent and dependent variables
- c) The main focus of the study
- d) A variable used to validate results

**Answer:** b) A variable that affects both the independent and dependent variables

---

**56. Research bias can be minimized by:**

- a) Increasing sample size
- b) Using standardized data collection methods
- c) Selecting a convenient sample
- d) Conducting experiments repeatedly

**Answer:** b) Using standardized data collection methods

---

**57. The Delphi technique is used for:**

- a) Collecting quantitative data
- b) Developing a consensus among experts
- c) Analyzing historical trends
- d) Conducting field experiments

**Answer:** b) Developing a consensus among experts

---

**58. In experimental research, randomization ensures:**

- a) Equal treatment of all variables
- b) Elimination of all confounding variables
- c) Equal chances of selection for participants
- d) The validity of the null hypothesis

**Answer:** c) Equal chances of selection for participants

---

**59. In the context of research ethics, “debriefing” refers to:**

- a) Obtaining informed consent
- b) Explaining the purpose of the study to participants after completion
- c) Ensuring data anonymity
- d) Avoiding plagiarism

**Answer:** b) Explaining the purpose of the study to participants after completion

---

**60. A population in research refers to:**

- a) A large group of participants in an experiment
- b) The entire set of individuals or objects of interest
- c) A randomly selected group for a study
- d) A group that receives experimental treatment

**Answer:** b) The entire set of individuals or objects of interest

**61. What does a high standard deviation in a dataset indicate?**

- a) Data points are very close to the mean
- b) Data points are spread out over a wider range of values
- c) There is no variability in the data
- d) The data is not normally distributed

**Answer:** b) Data points are spread out over a wider range of values

---

**62. A double-blind study is designed to:**

- a) Eliminate bias from both the researcher and the participant
- b) Ensure random sampling
- c) Increase sample size
- d) Test two hypotheses simultaneously

**Answer:** a) Eliminate bias from both the researcher and the participant

---

**63. Which of the following is an example of qualitative data?**

- a) Test scores
- b) Annual income
- c) Gender
- d) Number of books read

**Answer:** c) Gender

---

**64. Which is NOT a step in the research process?**

- a) Defining the problem
- b) Data collection
- c) Guessing outcomes
- d) Analyzing data

**Answer:** c) Guessing outcomes

---

**65. A measure of how well a test predicts an outcome is known as:**

- a) Construct validity
  - b) Predictive validity
  - c) Internal consistency
  - d) External validity
- Answer:** b) Predictive validity
-

**66. What is the main purpose of exploratory research?**

- a) To test hypotheses
- b) To find solutions to problems
- c) To gain insights and familiarity with the subject
- d) To validate research instruments

**Answer:** c) To gain insights and familiarity with the subject

---

**67. In research, the term “population” refers to:**

- a) A subset of participants
- b) The group receiving experimental treatment
- c) The total set of subjects of interest
- d) The group providing informed consent

**Answer:** c) The total set of subjects of interest

---

**68. What type of error occurs when a null hypothesis is incorrectly rejected?**

- a) Type I error
- b) Type II error
- c) Sampling error
- d) Measurement error

**Answer:** a) Type I error

---

**69. Research that combines elements of quantitative and qualitative approaches is called:**

- a) Correlational research
- b) Mixed-methods research
- c) Descriptive research
- d) Experimental research

**Answer:** b) Mixed-methods research

---

**70. Which of the following tools is often used in ethnographic research?**

- a) Surveys
- b) Participant observation
- c) Laboratory experiments
- d) Statistical analysis

**Answer:** b) Participant observation

---

**71. A null hypothesis is considered true until:**

- a) It is disproved through statistical analysis
- b) The research data confirms the alternative hypothesis
- c) A p-value greater than 0.05 is found
- d) Peer review is complete

**Answer:** a) It is disproved through statistical analysis

---

**72. In research, the operational definition of a variable refers to:**

- a) Its dictionary meaning
- b) A theoretical explanation
- c) The way it is measured or manipulated in the study
- d) The standardized units used for measurement

**Answer:** c) The way it is measured or manipulated in the study

---

**73. The term “sampling error” refers to:**

- a) Errors made during data analysis
- b) The difference between sample results and the true population value
- c) Errors in data collection instruments
- d) Mistakes in hypothesis formulation

**Answer:** b) The difference between sample results and the true population value

---

**74. In an experimental study, the placebo group is:**

- a) The group receiving the independent variable
- b) The group that receives no treatment or a fake treatment
- c) The group that determines the sample size
- d) The group used for pilot testing

**Answer:** b) The group that receives no treatment or a fake treatment

---

**75. A literature review is essential in research because:**

- a) It helps to avoid duplication of effort
- b) It provides historical data for comparison
- c) It ensures ethical compliance
- d) It guarantees statistically significant results

**Answer:** a) It helps to avoid duplication of effort



---

**76. A t-test is used to:**

- a) Measure variability in a dataset
- b) Compare the means of two groups
- c) Analyze categorical data
- d) Establish correlations between variables

**Answer:** b) Compare the means of two groups

---

**77. What does it mean when research findings are statistically significant?**

- a) The findings are practically important
- b) The findings are likely due to chance
- c) The findings are unlikely due to chance
- d) The findings have been validated externally

**Answer:** c) The findings are unlikely due to chance

---

**78. The independent variable in a study is:**

- a) The outcome being measured
- b) The variable manipulated by the researcher
- c) The constant across all experiments
- d) The variable that confounds the results

**Answer:** b) The variable manipulated by the researcher

---

**79. A scatter plot is used to:**

- a) Display frequencies of data
- b) Show the relationship between two variables
- c) Represent measures of central tendency
- d) Illustrate experimental designs

**Answer:** b) Show the relationship between two variables

---

**80. What is the purpose of randomization in experimental research?**

- a) To increase the sample size
- b) To control for confounding variables
- c) To focus on a specific population
- d) To ensure external validity

**Answer:** b) To control for confounding variables

**81. What is the primary characteristic of experimental research?**

- a) It explores cause-and-effect relationships
- b) It involves data collection through observation
- c) It uses historical data for analysis
- d) It focuses on numerical data only

**Answer:** a) It explores cause-and-effect relationships

---

**82. A structured interview is:**

- a) An open-ended discussion
- b) A predefined set of questions asked in the same way
- c) A flexible conversation guided by the researcher
- d) A method used only in qualitative research

**Answer:** b) A predefined set of questions asked in the same way

---

**83. What does “triangulation” in research refer to?**

- a) Using three hypotheses in a study
- b) Employing multiple methods to study the same phenomenon
- c) Dividing data into three equal parts
- d) Using statistical tools for three variables

**Answer:** b) Employing multiple methods to study the same phenomenon

---

**84. A hypothesis that states there is no relationship between two variables is called:**

- a) Directional hypothesis
- b) Alternative hypothesis
- c) Null hypothesis
- d) Research hypothesis

**Answer:** c) Null hypothesis

---

**85. What is the purpose of a research proposal?**

- a) To present the findings of a study
- b) To obtain funding or approval for a study
- c) To summarize existing literature
- d) To analyze research data

**Answer:** b) To obtain funding or approval for a study

---

**86. Snowball sampling is most useful when:**

- a) The population is large and well-defined
- b) The population is hard to access or identify
- c) The research focuses on numerical data
- d) A random sample is required

**Answer:** b) The population is hard to access or identify

---

**87. The term “validity” in research refers to:**

- a) The accuracy of the research findings
- b) The consistency of the research results
- c) The ethical compliance of the study
- d) The size of the sample used

**Answer:** a) The accuracy of the research findings

---

**88. Which of the following is NOT a type of quantitative research?**

- a) Experimental research
- b) Survey research
- c) Phenomenological research
- d) Correlational research

**Answer:** c) Phenomenological research

---

**89. What is the primary aim of longitudinal research?**

- a) To explore relationships between variables at one point in time
- b) To study changes over an extended period
- c) To identify cause-and-effect relationships
- d) To validate research tools

**Answer:** b) To study changes over an extended period

---

**90. In research, a pilot study is conducted to:**

- a) Test the main hypothesis
- b) Refine the research methodology
- c) Publish preliminary results
- d) Compare findings with other studies

**Answer:** b) Refine the research methodology

---

**91. Which of the following measures dispersion in a dataset?**

- a) Mean
- b) Median
- c) Standard deviation
- d) Mode

**Answer:** c) Standard deviation

---

**92. Ethical research involves all the following EXCEPT:**

- a) Informed consent
- b) Ensuring confidentiality
- c) Deceiving participants for better results
- d) Avoiding plagiarism

**Answer:** c) Deceiving participants for better results

---

**93. What does the term “sampling frame” refer to?**

- a) The total population
- b) The list of all individuals in the population
- c) The subset of individuals selected for the study
- d) The method used to select participants

**Answer:** b) The list of all individuals in the population

---

**94. Which test is used to examine the association between categorical variables?**

- a) T-test
- b) Chi-square test
- c) ANOVA
- d) Correlation analysis

**Answer:** b) Chi-square test

---

**95. Which of the following is an attribute of qualitative research?**

- a) It tests hypotheses
- b) It uses numerical data
- c) It emphasizes participant perspectives
- d) It is always conducted in laboratories

**Answer:** c) It emphasizes participant perspectives

---

**96. What is the primary purpose of peer review in research?**

- a) To ensure the research meets ethical standards
- b) To verify the findings of the study
- c) To evaluate the quality and validity of the research
- d) To increase the sample size

**Answer:** c) To evaluate the quality and validity of the research

---

**97. The dependent variable in an experiment is:**

- a) The variable manipulated by the researcher
- b) The outcome measured in response to the independent variable
- c) Always numerical
- d) Always qualitative

**Answer:** b) The outcome measured in response to the independent variable

---

**98. The term “open-ended question” refers to:**

- a) Questions with predefined response options
- b) Questions allowing participants to answer freely in their own words
- c) Questions used in quantitative research
- d) Questions designed for quick analysis

**Answer:** b) Questions allowing participants to answer freely in their own words

---

**99. The main disadvantage of convenience sampling is:**

- a) It is time-consuming
- b) It requires complex statistical tools
- c) It may not represent the population accurately
- d) It is unethical

**Answer:** c) It may not represent the population accurately

---

**100. In research, an “anomaly” refers to:**

- a) A standard observation in the data
- b) A deviation from expected patterns or results
- c) The main focus of the study
- d) An error in statistical calculations

**Answer:** b) A deviation from expected patterns or results

**1. What is the primary purpose of a firewall?**

- a) To enhance system speed
- b) To monitor and control incoming and outgoing network traffic
- c) To encrypt sensitive data
- d) To perform antivirus scans

**Answer:** b) To monitor and control incoming and outgoing network traffic

---

**2. Which of the following is NOT an example of a cyberattack?**

- a) Phishing
- b) Denial of Service (DoS)
- c) Data Encryption
- d) Man-in-the-Middle attack

**Answer:** c) Data Encryption

---

**3. The process of scrambling data to make it unreadable without a decryption key is called:**

- a) Encoding
- b) Encrypting
- c) Compressing
- d) Hashing

**Answer:** b) Encrypting

---

**4. A strong password typically contains:**

- a) Only uppercase letters
- b) A combination of letters, numbers, and special characters
- c) Only numbers
- d) Your name or date of birth

**Answer:** b) A combination of letters, numbers, and special characters

---

**5. Which of the following protocols is used to securely transfer files over the internet?**

- a) FTP
- b) HTTP
- c) SFTP
- d) SMTP

**Answer:** c) SFTP

---

**6. What does the acronym “VPN” stand for?**

- a) Virtual Private Network
- b) Virtual Public Node
- c) Verified Private Network
- d) Virtual Personal Node

**Answer:** a) Virtual Private Network

---

**7. A botnet is:**

- a) A collection of interconnected devices controlled by malware
- b) A secure database for sensitive information
- c) A type of phishing attack
- d) A vulnerability in firewalls

**Answer:** a) A collection of interconnected devices controlled by malware

---

**8. What is the purpose of a digital certificate?**

- a) To authenticate the identity of a user or website
- b) To encrypt data on hard drives
- c) To block spam emails
- d) To scan for malware on a network

**Answer:** a) To authenticate the identity of a user or website

---

**9. Which of the following is a form of social engineering?**

- a) SQL injection
- b) Phishing
- c) Brute force attack
- d) Buffer overflow

**Answer:** b) Phishing

---

**10. The term "zero-day vulnerability" refers to:**

- a) A vulnerability discovered after a system update
- b) A vulnerability that has not been patched or exploited yet
- c) A vulnerability that cannot be fixed
- d) A vulnerability in open-source software

**Answer:** b) A vulnerability that has not been patched or exploited yet



---

**11. Which of the following is a symmetric encryption algorithm?**

- a) RSA
- b) DES
- c) DSA
- d) ECC

**Answer:** b) DES

---

**12. In a Denial of Service (DoS) attack, the attacker's goal is to:**

- a) Steal sensitive information
- b) Overload a system to disrupt its functionality
- c) Inject malicious code into a database
- d) Encrypt user data for ransom

**Answer:** b) Overload a system to disrupt its functionality

---

**13. What is a common indicator of a phishing email?**

- a) An email from a known contact
- b) Typos and grammatical errors
- c) A generic greeting like "Dear Customer"
- d) Both b and c

**Answer:** d) Both b and c

---

**14. Which of the following tools is commonly used for network security monitoring?**

- a) Wireshark
- b) Blender
- c) Adobe Acrobat
- d) Google Drive

**Answer:** a) Wireshark

---

**15. A Public Key Infrastructure (PKI) is used for:**

- a) Antivirus updates
- b) Creating and managing digital certificates
- c) Compressing large files
- d) Securing hardware devices

**Answer:** b) Creating and managing digital certificates

---

**16. Malware that locks users out of their system until a ransom is paid is called:**

- a) Trojan
- b) Ransomware
- c) Spyware
- d) Worm

**Answer:** b) Ransomware

---

**17. Which of the following is NOT a type of authentication factor?**

- a) Something you know (password)
- b) Something you have (smart card)
- c) Something you are (biometric)
- d) Something you think

**Answer:** d) Something you think

---

**18. What does the term “brute force attack” mean?**

- a) Physically breaking into a server room
- b) Repeatedly attempting every possible password combination to gain access
- c) Sending malware to a target computer
- d) Overloading a network with traffic

**Answer:** b) Repeatedly attempting every possible password combination to gain access

---

**19. Which layer of the OSI model does HTTPS operate on?**

- a) Transport layer
- b) Network layer
- c) Application layer
- d) Physical layer

**Answer:** c) Application layer

---

## 20. What is a honeypot in cybersecurity?

- a) A secure password storage tool
- b) A decoy system set up to trap attackers
- c) A protocol for secure data transfer
- d) A vulnerability scanner

**Answer:** b) A decoy system set up to trap attackers

Let's delve into **specific subtopics** of cybersecurity for focused MCQs. Here's the breakdown:

1. **Encryption**
  2. **Network Security**
  3. **Ethical Hacking**
- 

## Encryption MCQs

---

### 1. Which algorithm is widely used for public-key encryption?

- a) AES
- b) RSA
- c) SHA-256
- d) DES

**Answer:** b) RSA

---

### 2. What is the size of the key used in the AES-256 encryption algorithm?

- a) 128 bits
- b) 192 bits
- c) 256 bits
- d) 512 bits

**Answer:** c) 256 bits

---

**3. The main difference between symmetric and asymmetric encryption is:**

- a) Symmetric uses a single key, while asymmetric uses a pair of keys
- b) Symmetric is slower than asymmetric encryption
- c) Asymmetric does not use keys
- d) Symmetric encryption is used only for email security

**Answer:** a) Symmetric uses a single key, while asymmetric uses a pair of keys

---

**4. What does hashing primarily ensure in data security?**

- a) Confidentiality
- b) Integrity
- c) Availability
- d) Authentication

**Answer:** b) Integrity

---

**5. Which of the following algorithms is NOT used for hashing?**

- a) MD5
- b) SHA-256
- c) Blowfish
- d) SHA-1

**Answer:** c) Blowfish

---

**6. What is the primary role of the Diffie-Hellman algorithm?**

- a) Symmetric key generation
- b) Public key exchange
- c) Data encryption
- d) Hash generation

**Answer:** b) Public key exchange

---

**7. The process of converting plaintext into ciphertext is called:**

- a) Decryption
- b) Hashing
- c) Encryption
- d) Key generation

**Answer:** c) Encryption

---

**8. Which type of encryption is commonly used in secure email communication?**

- a) Symmetric encryption
- b) Asymmetric encryption
- c) Hashing
- d) Base64 encoding

**Answer:** b) Asymmetric encryption

---

**9. What is the output length of the SHA-256 hashing algorithm?**

- a) 128 bits
- b) 192 bits
- c) 256 bits
- d) 512 bits

**Answer:** c) 256 bits

---

**10. What does the term “salting” in cryptography mean?**

- a) Adding random data to a password before hashing
- b) Encrypting data with two keys
- c) Compressing ciphertext to save space
- d) Using a secondary hash function for security

**Answer:** a) Adding random data to a password before hashing

---

**11. Which of the following is a stream cipher?**

- a) AES
- b) RC4
- c) RSA
- d) SHA-512

**Answer:** b) RC4

---

**12. Which encryption standard replaced DES due to its vulnerabilities?**

- a) Blowfish
- b) Twofish
- c) AES
- d) RSA

**Answer:** c) AES

---

**13. What does a digital signature ensure?**

- a) Data confidentiality
- b) Data authenticity and integrity
- c) Data encryption
- d) Key exchange

**Answer:** b) Data authenticity and integrity

---

**14. In asymmetric encryption, which key is used to encrypt data?**

- a) Public key
- b) Private key
- c) Both public and private keys
- d) Session key

**Answer:** a) Public key

---

**15. The main weakness of MD5 hashing is:**

- a) Its large hash size
- b) Its speed
- c) Vulnerability to collision attacks
- d) Incompatibility with encryption algorithms

**Answer:** c) Vulnerability to collision attacks

## Ethical Hacking MCQs

---

### 1. What is the primary goal of ethical hacking?

- a) To disrupt network operations
- b) To identify vulnerabilities before malicious hackers can exploit them
- c) To cause damage to a target system
- d) To steal data for analysis

**Answer:** b) To identify vulnerabilities before malicious hackers can exploit them

---

### 2. Which of the following is NOT a common ethical hacking tool?

- a) Metasploit
- b) Wireshark
- c) Nmap
- d) Microsoft Word

**Answer:** d) Microsoft Word

---

### 3. What is a "white-hat" hacker?

- a) A hacker who works for malicious purposes
- b) A hacker who helps organizations secure their systems
- c) A hacker who works alone and never discloses findings
- d) A hacker who uses viruses to test systems

**Answer:** b) A hacker who helps organizations secure their systems

---

### 4. Which of the following is NOT part of the information-gathering phase of ethical hacking?

- a) Scanning for open ports
- b) Exploiting vulnerabilities
- c) Social engineering
- d) Reconnaissance

**Answer:** b) Exploiting vulnerabilities

---

**5. What is the purpose of a penetration test in ethical hacking?**

- a) To steal sensitive data
- b) To test and evaluate the security of a system by simulating an attack
- c) To monitor system traffic for abnormal behavior
- d) To create backups of sensitive data

**Answer:** b) To test and evaluate the security of a system by simulating an attack

---

**6. The term "phishing" refers to:**

- a) Sending malicious links via email to steal user credentials
- b) Bypassing a firewall
- c) Injecting malicious code into a website
- d) Scanning a network for vulnerabilities

**Answer:** a) Sending malicious links via email to steal user credentials

---

**7. Which of the following is NOT a step in the ethical hacking process?**

- a) Reconnaissance
- b) Scanning
- c) Exploiting vulnerabilities
- d) Performing illegal actions

**Answer:** d) Performing illegal actions

---

**8. A "backdoor" in a system is used to:**

- a) Speed up system performance
- b) Provide unauthorized access to an attacker
- c) Encrypt system data
- d) Clean up system vulnerabilities

**Answer:** b) Provide unauthorized access to an attacker

---

**9. What is the role of "social engineering" in ethical hacking?**

- a) Gaining unauthorized access to networks using technical methods
- b) Manipulating people to divulge confidential information or perform actions
- c) Developing malware for testing purposes
- d) Encrypting data to prevent theft

**Answer:** b) Manipulating people to divulge confidential information or perform actions

---



**10. What is a "DoS" attack in the context of ethical hacking?**

- a) A method for stealing data from a website
- b) A type of attack that attempts to disrupt the availability of a service or system
- c) An encryption-based attack on communication systems
- d) A physical break-in to an organization's network infrastructure

**Answer:** b) A type of attack that attempts to disrupt the availability of a service or system

## Network Security MCQs

---

**11. Which of the following is the main purpose of a Virtual Private Network (VPN)?**

- a) To provide unrestricted access to all websites
- b) To secure communications over public networks
- c) To store encrypted data securely
- d) To block DDoS attacks

**Answer:** b) To secure communications over public networks

---

**12. Which of the following is a form of malware that disguises itself as legitimate software?**

- a) Worm
- b) Trojan Horse
- c) Ransomware
- d) Rootkit

**Answer:** b) Trojan Horse

---

**13. Which security measure is often used to protect the perimeter of a network?**

- a) Proxy server
- b) Network firewall
- c) IDS/IPS
- d) Antivirus software

**Answer:** b) Network firewall

---

**14. In the context of network security, what does the term "Pharming" refer to?**

- a) Disguising malware as legitimate software
- b) Redirecting a website's traffic to a fraudulent site
- c) Monitoring network traffic for sensitive information
- d) Overloading a system with excessive data

**Answer:** b) Redirecting a website's traffic to a fraudulent site

---

**15. A honeypot is used in network security primarily to:**

- a) Encrypt data
- b) Protect a network from viruses
- c) Distract and deceive attackers by mimicking real systems
- d) Improve system performance

**Answer:** c) Distract and deceive attackers by mimicking real systems

---

**16. Which of the following is NOT a type of network firewall?**

- a) Packet-filtering firewall
- b) Stateful inspection firewall
- c) Proxy firewall
- d) Data integrity firewall

**Answer:** d) Data integrity firewall

---

**17. Which of the following technologies is used to implement Virtual Local Area Networks (VLANs)?**

- a) DNS
- b) VPN
- c) Router
- d) Switch

**Answer:** d) Switch

---

**18. The purpose of a Demilitarized Zone (DMZ) is to:**

- a) Ensure unauthorized traffic is always allowed
- b) Isolate and secure internal systems from external threats
- c) Allow attackers easy access to internal resources
- d) Encrypt all incoming and outgoing data

**Answer:** b) Isolate and secure internal systems from external threats

---

**19. Which of the following is an advantage of SSL/TLS encryption?**

- a) It is free and open-source
- b) It helps secure communications over the internet
- c) It eliminates the need for firewalls
- d) It completely prevents all forms of cyberattacks

**Answer:** b) It helps secure communications over the internet

---

**20. The concept of "network segmentation" involves:**

- a) Encrypting all network data
- b) Dividing a network into smaller, isolated subnets to improve security
- c) Allowing free traffic flow between all devices in a network
- d) Installing one central firewall for the entire network

**Answer:** b) Dividing a network into smaller, isolated subnets to improve security

---

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## Ethical Hacking MCQs

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### 21. The "penetration testing" phase involves:

- a) Exploiting vulnerabilities for malicious purposes
- b) Identifying weaknesses in a system without exploiting them
- c) Performing a real-world cyberattack
- d) Installing malware on the network

**Answer:** b) Identifying weaknesses in a system without exploiting them

---

### 22. The term "ethical hacking" refers to:

- a) Hacking systems with malicious intent
- b) Testing systems without permission for profit
- c) Hacking for personal gain
- d) Conducting authorized testing to find and fix security vulnerabilities

**Answer:** d) Conducting authorized testing to find and fix security vulnerabilities

---

### 23. In ethical hacking, the process of "footprinting" involves:

- a) Developing a detailed attack plan
- b) Gathering information about the target system through publicly available sources
- c) Gaining access to a system's sensitive data
- d) Installing backdoors in the target system

**Answer:** b) Gathering information about the target system through publicly available sources

---

### 24. The first step in an ethical hacking engagement is usually:

- a) Gaining unauthorized access to the target system
- b) Scanning the system for open ports
- c) Identifying potential vulnerabilities
- d) Getting written authorization from the system owner

**Answer:** d) Getting written authorization from the system owner

---

**25. Which of the following is an example of a reconnaissance technique used in ethical hacking?**

- a) SQL Injection
  - b) Social Engineering
  - c) Port Scanning
  - d) Rootkit installation
- Answer:** c) Port Scanning
- 

**26. In an ethical hacking assessment, a "black-box" test refers to:**

- a) Testing without prior knowledge of the target system
  - b) Using pre-disclosed system information
  - c) Testing the physical security of an organization
  - d) Testing a network from within a secured environment
- Answer:** a) Testing without prior knowledge of the target system
- 

**27. Which of the following tools is primarily used for network sniffing during ethical hacking?**

- a) Metasploit
  - b) Wireshark
  - c) Nessus
  - d) John the Ripper
- Answer:** b) Wireshark
- 

**28. In ethical hacking, "privilege escalation" refers to:**

- a) Moving from one network to another
  - b) Elevating the hacker's access rights to gain more control over the system
  - c) Performing a denial-of-service attack
  - d) Disabling a firewall
- Answer:** b) Elevating the hacker's access rights to gain more control over the system
- 

**29. Which of the following is an example of a social engineering attack?**

- a) SQL Injection
  - b) Spear Phishing
  - c) DDoS attack
  - d) Man-in-the-Middle attack
- Answer:** b) Spear Phishing

---

**30. Which of the following ethical hacking techniques is used to gain access to a target system?**

- a) Reconnaissance
  - b) Exploitation
  - c) Hashing
  - d) Steganography
- Answer:** b) Exploitation

---

**31. Which of the following vulnerabilities is commonly tested during penetration testing?**

- a) SQL Injection
  - b) Physical security vulnerabilities
  - c) Social media exploits
  - d) User password strength
- Answer:** a) SQL Injection