**1.** What challenge is faced when integrating AI into an established CI toolchain?

1 / 1 point

- ○ Data privacy and security
- ○ None of the above
- ◉ Achieving seamless integration
- ○ Difficulty in transitioning from traditional CI to AI-driven CI

> ✓ **Correct**
> Correct! To achieve seamless integration, organizations need to ensure that the AI capabilities can seamlessly work alongside the existing CI components and workflows.

**2.** Which company utilizes machine learning for autonomous adjustments in various services?

1 / 1 point

- ○ Juniper Networks
- ○ Balbix Security Cloud
- ◉ Gmail
- ○ IBM

> ✓ **Correct**
> Correct! Gmail utilizes machine learning for autonomous adjustments in various services.

**3.** Which tool utilizes GPT to analyze HTTP requests and responses for detecting vulnerabilities?

1 / 1 point

- ○ Sophos Intercept X
- ◉ BurpGPT
- ○ Splunk User Behavior Analytics
- ○ Symantec Endpoint Security

> ✓ **Correct**
> Correct! BurpGPT is a tool that utilizes GPT (Generative Pre-trained Transformer) to analyze HTTP requests and responses to detect vulnerabilities.

**4.** What is one major challenge associated with using generative AI in software development?

1 / 1 point

- ○ The absence of ethical implications.
- ○ The lack of creativity and exploration opportunities.
- ○ The guarantee of privacy and security.
- ◉ The potential for bias and inaccuracy in generated outputs.

> ✓ **Correct**
> Correct! One major challenge associated with generative AI in software development is the potential for bias and inaccuracy in the generated outputs.

**5.** Which of these are examples of successful AI-driven apps?                    `1 / 1 point`

○ Netflix and Hulu

○ Facebook and Twitter

○ TikTok and Instagram

◉ Siri and Alexa

> ⊘ **Correct**
> Correct! Both Siri and Alexa utilize artificial intelligence technologies to understand and respond to user queries, making them examples of successful AI-driven apps.

**6.** What is one concern associated with generative AI models in software development?                    `1 / 1 point`

○ The need for extensive training data

◉ The potential for spreading false information

○ The requirement to obtain informed consent from users

○ The ability to create synthetic vocal recordings

> ⊘ **Correct**
> Correct! Generative AI models can be programmed to generate text or content that resembles human-generated content.

**7.** Which of the following is a technique AI-powered code review tools used to analyze source code without executing it and identify potential issues such as coding style violations, unused variables, or memory leaks?                    `1 / 1 point`

○ Bug detection

○ Automated log analysis

○ Predictive debugging

◉ Static analysis

> ⊘ **Correct**
> Correct! Static analysis is a technique AI-powered code review tools used to analyze source code without executing it.

**8.** What is one of the key capabilities of Large Language Models (LLMs) in software development?                    `1 / 1 point`

○ Image recognition

○ Hardware optimization

○ Social media analysis

◉ Code generation and auto-completion

> ⊘ **Correct**
> Correct! LLMs assist programmers by generating code, analyzing existing codebases, and suggesting code completions, reducing manual effort in coding.

9. Which of the following AI-driven approaches involves applying AI techniques for code refactoring?  **1 / 1 point**

○ Code analysis

○ Anomaly detection

○ Code automation

◉ Design pattern analysis

> ✓ **Correct**
> Correct! This approach involves various AI-driven techniques, including code refactoring, design pattern analysis, architectural trade-off insights, code completion, and bug detection.

10. What feature of AI web builders helps in swiftly creating professional logos.  **1 / 1 point**

○ A text generator

○ AI website generator

○ Additional SEO measures

◉ AI logo maker

> ✓ **Correct**
> Correct! The AI logo maker is a feature of AI web builders that helps swiftly craft professional logos.

11. How does AI contribute to email security, particularly in filtering spam?  **1 / 1 point**

○ Avoiding the use of spam filters

○ Manually reviewing each email

○ ignoring potentially harmful content

◉ Machine learning and AI algorithms

> ✓ **Correct**
> Correct! Through machine learning algorithms, AI helps recognize email patterns and filter out potentially harmful or unwanted content.

12. How can ethical concerns related to NLP technology be addressed?  **1 / 1 point**

○ By avoiding transparency in algorithms

○ By ignoring privacy concerns

◉ By ensuring diversity in training data

○ By introducing bias intentionally

> ✓ **Correct**
> Correct! Ensuring diversity in training data is one of the ways to address ethical concerns related to NLP technology.

**13.** Which of the following statements about the use of AI in software testing is true?    1 / 1 point

○ AI algorithms only improve test data generation.

◉ AI-based techniques enable intelligent test generation and execution of test cases along with other capabilities.

○ AI techniques are limited to automating test case generation.

○ AI analysis cannot help prioritize test cases based on software quality.

> ⊘ **Correct**
> Correct! AI-based techniques can generate and execute intelligent test cases, which can greatly enhance the efficiency and effectiveness of software testing.

**14.** Which of the following is a technique used by AI-powered code review tools?    1 / 1 point

○ Code pattern analysis

◉ Static analysis

○ Social media analysis

○ Automated log analysis

> ⊘ **Correct**
> Correct! Static analysis is used as a technique to review AI-powered code.

**15.** Which of the following is a role played by AI in CI/CD?    1 / 1 point

○ Bias detection

○ Manual Code Review

◉ Automated Testing and Quality Assurance

○ Predictive debugging

> ⊘ **Correct**
> Correct! Generative AI is used for automated testing and quality assurance in CI/CD.

**16.** What are some challenges associated with using generative AI in software development?    1 / 1 point

○ Low computational power required for training generative AI models

◉ Potential for bias and inaccuracy in generated outputs

○ Lack of intellectual property protection

○ Limited creativity and exploration options

> ⊘ **Correct**
> Correct! Using generative AI in software development has the potential for bias and inaccuracy in the generated outputs.

**17.** Which of the following is mentioned as an ethical consideration for using generative AI in software development?

1 / 1 point

- ○ Code automation
- ⦿ Bias and Discrimination
- ○ Speed and efficiency
- ○ Test case generation

> ⊘ **Correct**
> Correct! Bias and discrimination are considered as ethical considerations for generative AI in software development.

**18.** Which of the following is an example of a generative AI model that excels in language translation tasks?

1 / 1 point

- ○ Reinforcement learning algorithms
- ⦿ Transformers
- ○ Generative adversarial networks (GANs)
- ○ Variational autoencoders (VAEs)

> ⊘ **Correct**
> Correct! Transformers are an example of a generative AI model that excels in language translation tasks.

**19.** What is one of the challenges associated with the ethical usage of Large Language Models in software development

1 / 1 point

- ○ Hardware limitations
- ⦿ Bias detection
- ○ Speed of code generation
- ○ Code optimization

> ⊘ **Correct**
> Correct! LLMs inherit training data biases, and detecting and mitigating these biases is crucial to prevent unfair outcomes in software development.

**20.** How does AI assists in implementing design patterns in software systems?

1 / 1 point

- ○ Generating high-level architecture
- ○ Automating client chat services
- ○ Analyzing code for architectural patterns
- ⦿ Analyzing code for design patterns

> ⊘ **Correct**
> Correct! Machine learning algorithms can analyze the code and pick patterns that match specific design patterns, ensuring consistency and high quality in software systems.