MCQ UNIT 5 (20)

Easy Level (1–7)

1. Which of the following is a key component of IBM Cloud Continuous Delivery?
A. Jenkins
B. Toolchains
C. Kubernetes
D. Terraform
✅ **Answer:** B. Toolchains

---

2. IBM Cloud Toolchains help developers to:
A. Build mobile-only apps
B. Automate software development and deployment
C. Secure databases
D. Create virtual machines manually
✅ **Answer:** B. Automate software development and deployment

---

3. What does CI/CD stand for in DevOps?
A. Continuous Integration / Continuous Deployment
B. Central Integration / Central Development
C. Continuous Improvement / Continuous Design
D. Code Integration / Code Debugging
✅ **Answer:** A. Continuous Integration / Continuous Deployment

---

4. GitOps mainly uses which tool as the single source of truth?
A. Docker
B. Jenkins
C. Git repository
D. Kubernetes Dashboard
✅ **Answer:** C. Git repository

---

5. The main goal of DevSecOps is to:
A. Speed up the release cycle only
B. Add security at every stage of the DevOps pipeline
C. Replace developers with security tools

D. Focus on post-deployment testing only

✅ **Answer:** B. Add security at every stage of the DevOps pipeline

---

6. IBM Cloud Continuous Delivery integrates which of the following for version control?
A. Apache Subversion (SVN)
B. GitHub or GitLab
C. CVS
D. BitTorrent

✅ **Answer:** B. GitHub or GitLab

---

7. What is the primary benefit of using IBM Cloud Toolchains?
A. Manual deployment
B. Automatic scaling of infrastructure
C. Faster and more reliable application delivery
D. Database optimization

✅ **Answer:** C. Faster and more reliable application delivery

---

Medium Level (8–14)

8. In GitOps, the deployment process is triggered by:
A. Manual server login
B. Changes in the Git repository
C. Application restarts
D. Kubernetes pod failures

✅ **Answer:** B. Changes in the Git repository

---

9. Which IBM Cloud feature enables team collaboration, issue tracking, and delivery automation?
A. IBM Watson Studio
B. IBM Cloud Toolchain
C. IBM Cloud Object Storage
D. IBM Cloud Monitoring

✅ **Answer:** B. IBM Cloud Toolchain

---

10. DevSecOps differs from traditional DevOps primarily by:
A. Eliminating automation
B. Incorporating security practices early in the lifecycle
C. Focusing only on testing
D. Removing developers from the pipeline
✅ **Answer:** B. Incorporating security practices early in the lifecycle

---

11. Which of the following tools can be integrated into IBM Cloud Toolchains for CI/CD?
A. Slack
B. UrbanCode Deploy
C. Jenkins
D. All of the above
✅ **Answer:** D. All of the above

---

12. What principle does GitOps extend from DevOps?
A. Infrastructure as Code (IaC)
B. Agile Manifesto
C. Cloud Governance
D. Manual Configuration
✅ **Answer:** A. Infrastructure as Code (IaC)

---

13. In a DevSecOps pipeline, static code analysis is usually performed during:
A. Post-deployment phase
B. Build phase
C. Production monitoring
D. Incident response
✅ **Answer:** B. Build phase

---

14. IBM Cloud Continuous Delivery supports which deployment models?
A. Only on-premises
B. Only hybrid
C. Continuous Integration and Continuous Deployment
D. Manual deployment only
✅ **Answer:** C. Continuous Integration and Continuous Deployment

---

Hard Level (15–20)

15. In GitOps, reconciliation loops are primarily managed by:
A. Jenkins pipeline
B. Git agents
C. Kubernetes controllers or operators
D. Manual admin approval
✅ **Answer:** C. Kubernetes controllers or operators

---

16. Which statement best describes the relationship between GitOps and DevSecOps?
A. GitOps automates configuration; DevSecOps secures it
B. GitOps replaces DevSecOps
C. DevSecOps is a subset of GitOps
D. They are unrelated concepts
✅ **Answer:** A. GitOps automates configuration; DevSecOps secures it

---

17. What is a key benefit of implementing GitOps in a cloud environment?
A. Increased manual effort
B. Reduced observability
C. Consistent and auditable infrastructure changes
D. Slower deployment cycles
✅ **Answer:** C. Consistent and auditable infrastructure changes

---

18. In IBM Cloud Toolchains, the "Delivery Pipeline" component mainly handles:
A. Security scanning only
B. Infrastructure provisioning
C. Automated build, test, and deployment
D. Documentation generation
✅ **Answer:** C. Automated build, test, and deployment

---

19. During a DevSecOps implementation, which IBM Cloud service can be used for security vulnerability scanning?
A. IBM Cloud Security Advisor
B. IBM Watson Assistant
C. IBM Cloud Code Engine
D. IBM Cloud Functions
✅ **Answer:** A. IBM Cloud Security Advisor

---

20. When implementing GitOps principles using IBM Cloud, the deployment automation can be achieved by:
A. IBM Cloud Continuous Delivery pipelines triggered by Git commits
B. Manual SSH to cloud servers
C. Downloading deployment scripts locally
D. Kubernetes dashboard editing
✅ **Answer:** A. IBM Cloud Continuous Delivery pipelines triggered by Git commits

UNIT 4 MCQ (20)

Easy Level (1–7)

1. What is Ansible primarily used for?
A. Web application development
B. Configuration management and automation
C. Database management
D. Network monitoring
✅ **Answer:** B. Configuration management and automation

---

2. Which command is used to check the Ansible version?
A. `ansible --check`
B. `ansible --version`
C. `ansible-playbook --v`
D. `ansible info`
✅ **Answer:** B. `ansible --version`

---

3. What is the default inventory file location in Ansible?
A. `/etc/ansible/inventory`
B. `/usr/local/ansible/hosts`
C. `/etc/ansible/hosts`
D. `/var/ansible/inventory`
✅ **Answer:** C. `/etc/ansible/hosts`

---

4. In Ansible, a **playbook** is written in which format?
A. JSON
B. XML
C. YAML

D. INI
✅ **Answer:** C. YAML

---

5. Which Ansible module is used to install packages on Debian-based systems?
A. `yum`
B. `apt`
C. `dnf`
D. `pkg`
✅ **Answer:** B. `apt`

---

6. What is the purpose of a **role** in Ansible?
A. To execute commands directly
B. To structure reusable automation tasks
C. To manage SSH keys
D. To monitor logs
✅ **Answer:** B. To structure reusable automation tasks

---

7. Which file extension do Terraform configuration files use?
A. `.yaml`
B. `.json`
C. `.tf`
D. `.conf`
✅ **Answer:** C. `.tf`

Medium Level (8–14)

8. Which Ansible command is used to run a playbook?
A. `ansible`
B. `ansible-inventory`
C. `ansible-playbook`
D. `ansible-run`
✅ **Answer:** C. `ansible-playbook`

---

9. In Ansible, variables can be defined in which of the following?
A. Playbooks only

B. Inventory files only
C. Roles, Playbooks, and Inventory
D. Templates only
✅ **Answer:** C. Roles, Playbooks, and Inventory

---

10. What is the function of a **template** in Ansible?
A. To execute a script
B. To dynamically generate configuration files using Jinja2
C. To install Ansible roles
D. To validate syntax
✅ **Answer:** B. To dynamically generate configuration files using Jinja2

---

11. Which Terraform command initializes a working directory containing configuration files?
A. `terraform plan`
B. `terraform apply`
C. `terraform init`
D. `terraform start`
✅ **Answer:** C. `terraform init`

---

12. In Terraform, what does `terraform plan` do?
A. Deploys infrastructure
B. Shows the execution plan before applying changes
C. Destroys existing infrastructure
D. Initializes provider plugins
✅ **Answer:** B. Shows the execution plan before applying changes

---

13. Which file stores Terraform state information by default?
A. `main.tf`
B. `terraform.tfstate`
C. `provider.tf`
D. `backend.tf`
✅ **Answer:** B. `terraform.tfstate`

---

14. In Ansible, what is an **inventory file** used for?
A. To define the list of managed hosts

B. To store module outputs
C. To configure Ansible itself
D. To schedule cron jobs
✅ **Answer:** A. To define the list of managed hosts

Hard Level (15–20)

15. Which section of an Ansible playbook specifies the remote hosts on which tasks should run?
A. `vars:`
B. `hosts:`
C. `roles:`
D. `tasks:`
✅ **Answer:** B. `hosts:`

---

16. In Ansible, `with_items` or loops are used to:
A. Repeat tasks with multiple values
B. Stop execution of a playbook
C. Install multiple versions of Ansible
D. Delete temporary files
✅ **Answer:** A. Repeat tasks with multiple values

---

17. In Terraform, which block defines the provider used (e.g., AWS, Azure, GCP)?
A. `resource`
B. `variable`
C. `provider`
D. `output`
✅ **Answer:** C. `provider`

---

18. When using Ansible roles, the `tasks/main.yml` file contains:
A. Default variable definitions
B. List of tasks to execute
C. Inventory details
D. Role dependencies
✅ **Answer:** B. List of tasks to execute

---

19. In Terraform, the `terraform apply` command will:
A. Only display planned actions
B. Execute and create the defined infrastructure resources
C. Initialize a project
D. Destroy infrastructure
✅ **Answer:** B. Execute and create the defined infrastructure resources

---

20. When automating a cloud deployment, combining Ansible and Terraform helps because:
A. Terraform provisions infrastructure, and Ansible configures it
B. Both tools do exactly the same job
C. Ansible provisions and Terraform configures
D. They cannot work together
✅ **Answer:** A. Terraform provisions infrastructure, and Ansible configures it

UNIT 3 MCQ (20)

Easy Level (1–7)

1. What is the main goal of DevOps?
A. Separate development and operations teams
B. Automate and integrate software development and IT operations
C. Replace developers with automation tools
D. Focus only on testing
✅ **Answer:** B. Automate and integrate software development and IT operations

---

2. DevOps emphasizes which of the following?
A. Manual deployment
B. Collaboration between development and operations teams
C. Working in silos
D. Ignoring feedback loops
✅ **Answer:** B. Collaboration between development and operations teams

---

3. Which of the following best differentiates DevOps from Traditional IT?
A. DevOps uses manual deployments
B. DevOps promotes automation and continuous delivery
C. DevOps relies only on documentation
D. DevOps avoids testing
✅ **Answer:** B. DevOps promotes automation and continuous delivery

---

4. What is the purpose of Continuous Integration (CI)?
A. To deploy code directly to production
B. To automatically merge and test code changes frequently
C. To stop frequent code changes
D. To compile the project manually
✅ **Answer:** B. To automatically merge and test code changes frequently

---

5. Jenkins is primarily used for:
A. Writing source code
B. Continuous Integration and Continuous Delivery (CI/CD)
C. Managing databases
D. Container orchestration
✅ **Answer:** B. Continuous Integration and Continuous Delivery (CI/CD)

---

6. Which DevOps tool is used for **version control**?
A. Jenkins
B. Maven
C. Git
D. Docker
✅ **Answer:** C. Git

---

7. Which tool is used to build and manage **Java-based** projects in DevOps pipelines?
A. Jenkins
B. Maven
C. GitHub
D. Docker
✅ **Answer:** B. Maven

Medium Level (8–14)

8. In the DevOps lifecycle, which phase focuses on continuous testing and integration?
A. Plan
B. Build
C. Test and Integrate

D. Monitor

✅ **Answer:** C. Test and Integrate

---

9. What is the primary function of Docker in a CI/CD pipeline?
A. Version control
B. Continuous monitoring
C. Containerization of applications for consistent environments
D. Source code compilation

✅ **Answer:** C. Containerization of applications for consistent environments

---

10. What does Kubernetes (or MiniKube) help DevOps teams achieve?
A. Manage and orchestrate containers automatically
B. Build code faster
C. Perform security audits
D. Run tests manually

✅ **Answer:** A. Manage and orchestrate containers automatically

---

11. Agile focuses on **iteration** and **customer feedback**, while DevOps adds:
A. Testing tools
B. Automation and continuous delivery
C. Project management frameworks
D. Documentation management

✅ **Answer:** B. Automation and continuous delivery

---

12. Which command is used to initialize a Git repository?
A. `git commit`
B. `git init`
C. `git start`
D. `git config`

✅ **Answer:** B. `git init`

---

13. Which of the following tools are often used together to create a CI/CD pipeline?
A. Git, Jenkins, Docker, Kubernetes
B. Python, HTML, CSS, JS
C. Word, Excel, PowerPoint, Outlook

D. MySQL, MongoDB, Cassandra, Oracle
✅ **Answer:** A. Git, Jenkins, Docker, Kubernetes

---

14. The "Continuous Delivery" phase ensures that:
A. Code is manually deployed
B. Software is always ready for release
C. Testing is skipped
D. Developers stop writing code
✅ **Answer:** B. Software is always ready for release

Hard Level (15–20)

15. Which principle of DevOps ensures fast feedback from production environments?
A. Infrastructure as Code
B. Continuous Monitoring
C. Continuous Integration
D. Code Review
✅ **Answer:** B. Continuous Monitoring

---

16. What differentiates Continuous Deployment from Continuous Delivery?
A. Continuous Deployment includes automated production releases
B. Continuous Delivery includes manual production releases
C. Both A and B
D. Neither A nor B
✅ **Answer:** C. Both A and B

---

17. In Jenkins, a **Pipeline** is best described as:
A. A static HTML page
B. A sequence of automated steps for build, test, and deploy
C. A list of Docker images
D. A plugin manager
✅ **Answer:** B. A sequence of automated steps for build, test, and deploy

---

18. MiniKube is used to:
A. Run a local Kubernetes cluster for testing and learning

B. Build Java code
C. Manage Git repositories
D. Run Jenkins agents
✅ **Answer:** A. Run a local Kubernetes cluster for testing and learning

---

19. What is one key business benefit of DevOps adoption?
A. Slower release cycles
B. Increased collaboration and faster time to market
C. Reduced testing efforts
D. Manual deployment management
✅ **Answer:** B. Increased collaboration and faster time to market

---

20. When setting up a CI/CD pipeline using Jenkins and Docker, the general workflow is:
A. Build → Test → Package → Deploy
B. Test → Plan → Code → Deploy
C. Deploy → Monitor → Design
D. Code → Debug → Test → Delete
Answer: A. Build → Test → Package → Deploy

UNIT 2 MCQ (20)

Easy Level (1–7)

1. What is the primary focus of Agile methodology?
A. Following strict processes
B. Delivering working software quickly and iteratively
C. Extensive documentation
D. Sequential development phases
Answer: B. Delivering working software quickly and iteratively

---

2. The **Agile Manifesto** values:
A. Processes over people
B. Individuals and interactions over processes and tools
C. Contracts over collaboration
D. Documentation over working software
Answer: B. Individuals and interactions over processes and tools

---

3. Which of the following best differentiates Agile from Waterfall?
A. Agile is linear; Waterfall is iterative
B. Waterfall is iterative; Agile is sequential
C. Agile is iterative and adaptive; Waterfall is sequential and rigid
D. Both follow the same lifecycle
Answer: C. Agile is iterative and adaptive; Waterfall is sequential and rigid

---

4. Which of the following is **not** an Agile framework?
A. Scrum
B. Kanban
C. Lean
D. Six Sigma
Answer: D. Six Sigma

---

5. In Scrum, who is responsible for maximizing the product's value?
A. Scrum Master
B. Product Owner
C. Development Team
D. Stakeholder
Answer: B. Product Owner

---

6. The three pillars of Scrum are:
A. Plan, Execute, Deliver
B. Transparency, Inspection, Adaptation
C. Design, Build, Test
D. Communication, Documentation, Review
Answer: B. Transparency, Inspection, Adaptation

---

7. The **Daily Scrum** meeting typically lasts for:
A. 15 minutes
B. 30 minutes
C. 1 hour
D. 2 hours
Answer: A. 15 minutes

Medium Level (8–14)

8. Which Agile framework uses a **visual board** to manage work-in-progress (WIP)?
A. Scrum
B. Kanban
C. Lean
D. XP (Extreme Programming)
Answer: B. Kanban

---

9. Which of the following artifacts represents a list of all desired features and requirements in Scrum?
A. Sprint Backlog
B. Product Backlog
C. Burndown Chart
D. Definition of Done
Answer: B. Product Backlog

---

10. In Scrum, who facilitates the Scrum ceremonies and removes impediments?
A. Product Owner
B. Scrum Master
C. Development Team
D. Project Manager
Answer: B. Scrum Master

---

11. The **Sprint Retrospective** focuses on:
A. Reviewing the product backlog
B. Planning new features
C. Improving the process for the next sprint
D. Estimating story points
Answer: C. Improving the process for the next sprint

---

12. What is the primary advantage of Agile over Waterfall?
A. Predictable project scope
B. Flexibility to adapt to change during development
C. Stronger documentation standards
D. Easier long-term planning
Answer: B. Flexibility to adapt to change during development

---

13. The **Burndown Chart** in Scrum shows:
A. The total number of bugs
B. The remaining work in the sprint over time
C. The list of completed features
D. The sprint duration
Answer: B. The remaining work in the sprint over time

---

14. Extreme Programming (XP) emphasizes which key practice?
A. Pair programming and continuous feedback
B. Documentation-heavy design
C. Big upfront design
D. Minimal testing
Answer: A. Pair programming and continuous feedback

Hard Level (15–20)

15. In the **Scaling Agile** framework SAFe (Scaled Agile Framework), teams are organized into:
A. Agile Release Trains (ARTs)
B. Product Backlogs
C. Scrum Boards
D. Sprint Teams
Answer: A. Agile Release Trains (ARTs)

---

16. The **Scrum@Scale** framework was created by:
A. Kent Beck
B. Ken Schwaber
C. Jeff Sutherland
D. Mike Cohn
Answer: C. Jeff Sutherland

---

17. In a **LeSS (Large-Scale Scrum)** environment, multiple teams share:
A. Separate Product Backlogs
B. One common Product Backlog
C. No backlog at all
D. Different Scrum Masters
Answer: B. One common Product Backlog

---

18. A disadvantage of Agile methodology is:
A. Limited flexibility
B. Less predictability in large projects with fixed scope
C. Lack of collaboration
D. Delayed customer feedback
Answer: B. Less predictability in large projects with fixed scope

---

19. During **Sprint Planning**, the Scrum team decides:
A. What can be delivered in the upcoming sprint and how it will be achieved
B. The budget for the entire project
C. Which stakeholders will approve the sprint
D. The performance metrics for the next quarter
Answer: A. What can be delivered in the upcoming sprint and how it will be achieved

---

20. In Agile project management, a **user story** is best defined as:
A. A detailed technical document
B. A high-level description of a feature from the user's perspective
C. A sprint summary report
D. A list of testing scripts
Answer: B. A high-level description of a feature from the user's perspective

UNIT 1 MCQ (20)

Easy Level (1–7)

1. What is the main goal of **Design Thinking**?
A. To create more technical solutions
B. To focus on user-centered problem-solving
C. To increase documentation
D. To eliminate creativity
Answer: B. To focus on user-centered problem-solving

---

2. Which of the following best defines **Design Thinking**?
A. A scientific method for coding
B. A linear approach to design
C. A human-centered approach to innovation and problem-solving

D. A financial planning process
Answer: C. A human-centered approach to innovation and problem-solving

---

3. Design Thinking originated from practices in:
A. Architecture and engineering
B. Psychology and business
C. Product design and creative industries
D. Mathematics and statistics
Answer: C. Product design and creative industries

---

4. Why is **Design Thinking important** in problem-solving?
A. It focuses only on technology
B. It helps generate ideas based on assumptions
C. It keeps the user's needs and experiences at the center
D. It avoids collaboration
Answer: C. It keeps the user's needs and experiences at the center

---

5. IBM Design Thinking emphasizes:
A. Strict processes and tools
B. User outcomes and iterative learning
C. Cost reduction only
D. Rapid production without feedback
Answer: B. User outcomes and iterative learning

---

6. Which of the following is **not** a core principle of IBM Design Thinking?
A. Focus on user outcomes
B. Restless reinvention
C. Diverse empowered teams
D. Centralized decision-making
Answer: D. Centralized decision-making

---

7. In IBM Design Thinking, **personas** are used to:
A. Represent typical users and their goals
B. Document technical requirements
C. Replace team members

D. Write software code
Answer: A. Represent typical users and their goals

Medium Level (8–14)

8. The **IBM Loop** consists of which three stages?
A. Plan, Build, Test
B. Observe, Reflect, Make
C. Define, Design, Deliver
D. Think, Implement, Review
Answer: B. Observe, Reflect, Make

---

9. The "**Observe**" phase in the IBM Loop focuses on:
A. Testing the final product
B. Understanding user needs and experiences
C. Writing business requirements
D. Reviewing budget
Answer: B. Understanding user needs and experiences

---

10. The "**Reflect**" phase in the IBM Loop involves:
A. Implementing the final design
B. Analyzing insights and generating ideas
C. Building prototypes
D. Recruiting new users
Answer: B. Analyzing insights and generating ideas

---

11. In IBM Design Thinking, "**Restless reinvention**" means:
A. Accepting one-time success
B. Continuously improving solutions through iteration
C. Avoiding changes to prevent confusion
D. Focusing on perfect design only once
Answer: B. Continuously improving solutions through iteration

---

12. What is a key characteristic of **Diverse Empowered Teams** in IBM Design Thinking?
A. Members come from identical backgrounds
B. Teams have autonomy to make design decisions collaboratively

C. Teams avoid user interaction
D. Teams focus only on management approval
Answer: B. Teams have autonomy to make design decisions collaboratively

---

13. Personas in Design Thinking help teams:
A. Predict market trends
B. Empathize with users and design for real needs
C. Estimate project cost
D. Replace product testing
Answer: B. Empathize with users and design for real needs

---

14. Which of the following is **an output** of applying the IBM Loop effectively?
A. A more user-focused and continuously improved product
B. Reduced team collaboration
C. One-time product launch without feedback
D. Fixed design that never changes
Answer: A. A more user-focused and continuously improved product

---

Hard Level (15–20)

15. The **history of Design Thinking** can be traced back to early work by:
A. Steve Jobs
B. David Kelley and IDEO
C. Jeff Bezos
D. Elon Musk
Answer: B. David Kelley and IDEO

---

16. In the context of IBM Design Thinking, what does "Focus on user outcomes" mean?
A. Designing features that satisfy internal business goals
B. Measuring success by user satisfaction and impact
C. Prioritizing technology over user feedback
D. Minimizing user interaction
Answer: B. Measuring success by user satisfaction and impact

---

17. Which of the following statements best explains **how the IBM Loop supports iterative design**?

A. It enforces a linear design approach
B. It encourages constant observation, feedback, and improvement
C. It eliminates reflection and redesign
D. It stops after one cycle of design
Answer: B. It encourages constant observation, feedback, and improvement

---

18. In the **"Make"** phase of the IBM Loop, teams primarily:
A. Develop prototypes and test possible solutions
B. Document final project reports
C. Perform market analysis
D. Close the project
Answer: A. Develop prototypes and test possible solutions

---

19. When creating **personas**, what information is most relevant?
A. User demographics, behaviors, goals, and pain points
B. Project budget and timeline
C. Team hierarchy
D. System architecture
Answer: A. User demographics, behaviors, goals, and pain points

---

20. Applying the IBM Loop to solve a design problem helps teams:
A. Work without user input
B. Build empathy, iterate quickly, and refine ideas
C. Avoid iteration and focus on final design
D. Skip reflection stages for speed
Answer: B. Build empathy, iterate quickly, and refine ideas