**1. History of Cloud Computing – 30 MCQs**

1. Who is considered the father of cloud computing?  
   A. Steve Jobs  
   B. Larry Ellison  
   C. John McCarthy  
   D. Bill Gates  
   **Ans:** C
2. In which decade did the concept of cloud computing originate?  
   A. 1950s  
   B. 1960s  
   C. 1980s  
   D. 2000s  
   **Ans:** B
3. What invention laid the groundwork for cloud computing in the 1960s?  
   A. The Internet  
   B. Time-sharing  
   C. Email  
   D. Local networks  
   **Ans:** B
4. Amazon launched AWS in which year?  
   A. 2000  
   B. 2003  
   C. 2006  
   D. 2010  
   **Ans:** C
5. Which company introduced Elastic Compute Cloud (EC2)?  
   A. Microsoft  
   B. Amazon  
   C. Google  
   D. IBM  
   **Ans:** B
6. The term "cloud computing" became popular in which year?  
   A. 1995  
   B. 1999  
   C. 2006  
   D. 2012  
   **Ans:** C
7. Who first proposed computing as a public utility?  
   A. Alan Turing  
   B. John McCarthy  
   C. Tim Berners-Lee  
   D. Dennis Ritchie  
   **Ans:** B
8. Which company was a pioneer in providing SaaS?  
   A. Amazon  
   B. IBM  
   C. Salesforce  
   D. Microsoft  
   **Ans:** C
9. What was the first known use of the term “cloud computing” in a commercial context?  
   A. IBM mainframes  
   B. Google Docs  
   C. Compaq business plan  
   D. Salesforce CRM  
   **Ans:** C
10. What major innovation enabled cloud computing to grow?  
    A. Floppy Disks  
    B. Virtualization  
    C. Printed Circuit Boards  
    D. Dot Matrix Printers  
    **Ans:** B
11. Who launched Google App Engine in 2008?  
    A. Microsoft  
    B. Oracle  
    C. Google  
    D. IBM  
    **Ans:** C
12. Which cloud model became popular first?  
    A. PaaS  
    B. SaaS  
    C. IaaS  
    D. XaaS  
    **Ans:** B
13. Dropbox was founded in:  
    A. 2004  
    B. 2007  
    C. 2009  
    D. 2011  
    **Ans:** B
14. Which protocol laid a strong foundation for cloud services?  
    A. SMTP  
    B. HTTP  
    C. FTP  
    D. TCP/IP  
    **Ans:** D
15. Which of the following is NOT a milestone in cloud history?  
    A. Salesforce CRM  
    B. AWS launch  
    C. IBM Watson  
    D. YouTube  
    **Ans:** D
16. Microsoft Azure was launched in:  
    A. 2008  
    B. 2010  
    C. 2012  
    D. 2014  
    **Ans:** B
17. What was the early purpose of time-sharing systems?  
    A. Multimedia  
    B. Parallel computing  
    C. Shared computing resources  
    D. Cryptography  
    **Ans:** C
18. Who developed the concept of utility computing?  
    A. IBM  
    B. HP  
    C. McCarthy  
    D. Oracle  
    **Ans:** C
19. Cloud computing evolved from:  
    A. Mainframe computing  
    B. Web development  
    C. Gaming servers  
    D. Data mining  
    **Ans:** A
20. Cloud technology enables:  
    A. Manual file sharing  
    B. Distributed computing  
    C. CPU cooling  
    D. Fixed capacity  
    **Ans:** B
21. Early cloud-like services included:  
    A. Gmail  
    B. Hotmail  
    C. FTP servers  
    D. Yahoo Chat  
    **Ans:** B
22. Early software over the Internet was known as:  
    A. Downloadables  
    B. Shareware  
    C. ASPs  
    D. Crippleware  
    **Ans:** C
23. Grid computing influenced cloud computing by:  
    A. Adding CPUs  
    B. Virtual desktops  
    C. Pooling resources  
    D. Isolating memory  
    **Ans:** C
24. Which organization first published cloud definitions in 2009?  
    A. NIST  
    B. IEEE  
    C. ACM  
    D. IETF  
    **Ans:** A
25. Which company popularized the term "cloud"?  
    A. AT&T  
    B. Apple  
    C. Salesforce  
    D. Google  
    **Ans:** C
26. Cloud computing emerged prominently due to:  
    A. Hardware scarcity  
    B. Internet proliferation  
    C. Disk upgrades  
    D. GPU enhancements  
    **Ans:** B
27. First cloud-based email system was from:  
    A. Google  
    B. Yahoo  
    C. Microsoft  
    D. AOL  
    **Ans:** D
28. The idea of “pay-per-use” came from:  
    A. Internet Cafes  
    B. Grid computing  
    C. Utility services  
    D. ERP software  
    **Ans:** C
29. What is a major shift enabled by cloud?  
    A. On-premise to remote hosting  
    B. Floppy to SSD  
    C. Client-server model  
    D. GUI to CLI  
    **Ans:** A
30. In the 2000s, the primary cloud shift was:  
    A. Mobile apps  
    B. Remote storage  
    C. Email clients  
    D. Printer sharing  
    **Ans:** B

**2. Characteristics of Cloud Computing – 30 MCQs**

1. Which of the following is a key characteristic of cloud computing?  
   A. Fixed infrastructure  
   B. Manual scaling  
   C. On-demand self-service  
   D. Limited access  
   **Ans:** C
2. Cloud computing enables resource pooling. This means:  
   A. Separate resources for each user  
   B. Dedicated servers per task  
   C. Shared resources among multiple users  
   D. Static storage  
   **Ans:** C
3. Measured service in cloud computing refers to:  
   A. Manual billing  
   B. Resource tracking for billing  
   C. Service reviews  
   D. User feedback  
   **Ans:** B
4. Cloud computing provides:  
   A. Slow provisioning  
   B. Limited access  
   C. Broad network access  
   D. Non-scalable solutions  
   **Ans:** C
5. Rapid elasticity refers to:  
   A. Fixed bandwidth  
   B. Rapid increase/decrease in resources  
   C. Physical hardware flexibility  
   D. Network latency control  
   **Ans:** B
6. The ability to automatically scale resources is called:  
   A. Virtualization  
   B. Elasticity  
   C. Load testing  
   D. Redundancy  
   **Ans:** B
7. Which is NOT a characteristic of cloud computing?  
   A. On-demand  
   B. Resource pooling  
   C. Limited access  
   D. Measured service  
   **Ans:** C
8. Which of these allows cloud computing to work efficiently?  
   A. Manual configuration  
   B. Virtualization  
   C. Static IPs  
   D. Proprietary protocols  
   **Ans:** B
9. Resource pooling in cloud allows:  
   A. Isolated user access  
   B. Shared hardware use  
   C. Vendor lock-in  
   D. Fixed prices  
   **Ans:** B
10. What ensures pay-as-you-go billing in cloud computing?  
    A. Flat fees  
    B. Subscription  
    C. Measured services  
    D. Trial versions  
    **Ans:** C
11. Broad network access refers to:  
    A. Limited to LAN only  
    B. Access from anywhere  
    C. Only internal access  
    D. Admin-only access  
    **Ans:** B
12. Which is NOT a delivery model of cloud computing?  
    A. IaaS  
    B. SaaS  
    C. PaaS  
    D. DaaT  
    **Ans:** D
13. Elasticity allows:  
    A. Reduced security  
    B. Poor scalability  
    C. Efficient resource usage  
    D. Manual expansion  
    **Ans:** C
14. Which of the following best supports dynamic resource allocation?  
    A. Multithreading  
    B. Virtualization  
    C. Firmware  
    D. Static routing  
    **Ans:** B
15. Scalability in cloud computing means:  
    A. Fixed system limits  
    B. Expansion with demand  
    C. System isolation  
    D. Physical upgrade  
    **Ans:** B
16. What defines the availability of cloud services to clients?  
    A. VPN  
    B. Network access  
    C. Hardware  
    D. Bandwidth  
    **Ans:** B
17. On-demand self-service allows users to:  
    A. Wait for admins  
    B. Schedule tasks manually  
    C. Provision services instantly  
    D. Request approval  
    **Ans:** C
18. Multi-tenancy is enabled by:  
    A. Virtualization  
    B. Hard drives  
    C. RAM upgrade  
    D. Switches  
    **Ans:** A
19. Measured services help in:  
    A. Free usage  
    B. Static billing  
    C. Usage monitoring  
    D. Performance tuning only  
    **Ans:** C
20. Which of these models offers highest user control?  
    A. SaaS  
    B. PaaS  
    C. IaaS  
    D. DaaS  
    **Ans:** C
21. Which feature ensures cloud users only pay for what they use?  
    A. Resource pooling  
    B. Pay-per-use  
    C. Flat-rate pricing  
    D. Volume licensing  
    **Ans:** B
22. Elasticity helps in:  
    A. Predictable billing  
    B. Usage optimization  
    C. Fixed performance  
    D. Increasing latency  
    **Ans:** B
23. Shared infrastructure leads to:  
    A. Lower costs  
    B. Higher ownership  
    C. Poor security  
    D. Less flexibility  
    **Ans:** A
24. Which is NOT part of NIST cloud characteristics?  
    A. Broad access  
    B. Rapid elasticity  
    C. Limited transparency  
    D. On-demand service  
    **Ans:** C
25. Pay-as-you-go model benefits:  
    A. Only large firms  
    B. Admins  
    C. End-users  
    D. Hardware providers  
    **Ans:** C
26. The term "multi-tenant" means:  
    A. Single-user servers  
    B. Multiple clients using same server  
    C. Multiple tasks on same CPU  
    D. Multiple IPs  
    **Ans:** B
27. What is NOT true about cloud resources?  
    A. Shared  
    B. Dynamic  
    C. Rigid  
    D. Scalable  
    **Ans:** C
28. Which of the following is most suitable for rapid development?  
    A. IaaS  
    B. SaaS  
    C. PaaS  
    D. DaaS  
    **Ans:** C
29. Which ensures computing capacity as needed?  
    A. Fixed resources  
    B. Resource scheduling  
    C. Elasticity  
    D. Time-based billing  
    **Ans:** C
30. What makes cloud computing flexible?  
    A. Vendor lock-in  
    B. Measured resources  
    C. Shared local storage  
    D. Dedicated static IP  
    **Ans:** B

**3. Need for Cloud Computing – 30 MCQs**

1. Why was cloud computing introduced?  
   A. To increase manual control  
   B. To reduce the use of internet  
   C. To provide scalable and efficient computing  
   D. To encourage hardware dependency  
   **Ans:** C
2. A major reason for adopting cloud computing is:  
   A. Hardware expansion  
   B. Cost reduction  
   C. Complex deployment  
   D. High upfront investment  
   **Ans:** B
3. What is one main driver for cloud computing adoption?  
   A. Decreased internet speed  
   B. High software licensing cost  
   C. Demand for real-time collaboration  
   D. Need for localized data centers  
   **Ans:** C
4. Cloud computing supports business agility by:  
   A. Limiting access  
   B. Fixing hardware specs  
   C. Rapid deployment of applications  
   D. Reducing automation  
   **Ans:** C
5. Which of the following justifies the need for cloud computing?  
   A. Overhead cost increases  
   B. Data redundancy  
   C. Resource overprovisioning  
   D. Scalability requirements  
   **Ans:** D
6. Cloud computing helps organizations by:  
   A. Encouraging hardware purchases  
   B. Reducing software reuse  
   C. Minimizing IT maintenance  
   D. Eliminating virtualization  
   **Ans:** C
7. The demand for which of the following helped grow cloud computing?  
   A. Paper records  
   B. Physical servers  
   C. Big data processing  
   D. Offline access  
   **Ans:** C
8. The need for ubiquitous access to resources is solved by:  
   A. LAN  
   B. WAN  
   C. Cloud computing  
   D. Client-server model  
   **Ans:** C
9. Cloud computing is necessary for:  
   A. Manual scalability  
   B. Physical data isolation  
   C. Dynamic resource allocation  
   D. Fixed storage allocation  
   **Ans:** C
10. What need does SaaS fulfill?  
    A. Software licensing for offline access  
    B. Installing all software locally  
    C. Ready-to-use applications over the internet  
    D. Developer-only tools  
    **Ans:** C
11. Cloud computing addresses which business concern?  
    A. Long deployment times  
    B. Fixed resource availability  
    C. High hardware dependency  
    D. All of the above  
    **Ans:** D
12. Which industry need contributed to cloud growth?  
    A. Manual operations  
    B. Increased data analytics  
    C. Limited user access  
    D. Local backups  
    **Ans:** B
13. Remote working relies heavily on:  
    A. Cloud computing  
    B. Intranet  
    C. LAN  
    D. CDNs  
    **Ans:** A
14. Cloud computing supports innovation by:  
    A. Reducing experiments  
    B. Quick provisioning of services  
    C. Limiting changes  
    D. Fixing architecture  
    **Ans:** B
15. Cloud helps in disaster recovery by:  
    A. Slowing data replication  
    B. Providing manual backups  
    C. Offering reliable data recovery services  
    D. Local backup dependency  
    **Ans:** C
16. The need for which of the following led to cloud computing?  
    A. Manual computing  
    B. Decentralized development  
    C. Centralized data access  
    D. Redundant systems  
    **Ans:** C
17. A common business requirement fulfilled by cloud is:  
    A. Data loss  
    B. Business continuity  
    C. Server downtimes  
    D. Delayed operations  
    **Ans:** B
18. Which of the following needs are fulfilled by cloud computing?  
    A. Vendor lock-in  
    B. Limited availability  
    C. Global access  
    D. Hardware expansion  
    **Ans:** C
19. Startups need cloud computing for:  
    A. Heavy upfront investment  
    B. Static infrastructure  
    C. Cost-effective scalability  
    D. Unused resources  
    **Ans:** C
20. IT teams benefit from cloud due to:  
    A. Increased maintenance  
    B. Complex upgrades  
    C. Simplified infrastructure  
    D. Hardware dependency  
    **Ans:** C
21. Which use-case justifies cloud adoption?  
    A. Local development  
    B. Fixed hardware  
    C. Variable workloads  
    D. Offline systems  
    **Ans:** C
22. Why is cloud computing ideal for mobile apps?  
    A. Manual updates  
    B. Offline access  
    C. Centralized backend services  
    D. Device restrictions  
    **Ans:** C
23. Real-time collaboration tools rely on:  
    A. LAN  
    B. VPN  
    C. Cloud services  
    D. Internal servers  
    **Ans:** C
24. Which technical need is addressed by cloud computing?  
    A. Limited connectivity  
    B. Rapid hardware replacement  
    C. Fast provisioning  
    D. Isolated networks  
    **Ans:** C
25. Cloud adoption is driven by:  
    A. Higher CapEx  
    B. Flexible OpEx models  
    C. Rigid infrastructure  
    D. Manual scaling  
    **Ans:** B
26. Why do educational institutions prefer cloud?  
    A. Offline classes  
    B. Centralized learning platforms  
    C. Hardware labs  
    D. Intranet-based models  
    **Ans:** B
27. Developers benefit from cloud computing because of:  
    A. Expensive tools  
    B. Manual deployment  
    C. Easy sandbox environments  
    D. Slow feedback  
    **Ans:** C
28. What drives cloud adoption in e-commerce?  
    A. Static demand  
    B. Peak load handling  
    C. Manual billing  
    D. Flat file systems  
    **Ans:** B
29. What allows flexible testing environments?  
    A. Local hosts  
    B. Cloud test beds  
    C. Physical labs  
    D. Hard-coded platforms  
    **Ans:** B
30. Businesses migrating to cloud aim to achieve:  
    A. Increased latency  
    B. Higher costs  
    C. Operational efficiency  
    D. Hardware lock-in  
    **Ans:** C

**4. Advantages and Disadvantages of Cloud Computing – 30 MCQs**

1. Which is an advantage of cloud computing?  
   A. Requires physical infrastructure  
   B. High capital cost  
   C. On-demand resource availability  
   D. Fixed scalability  
   **Ans:** C
2. A key benefit of cloud computing is:  
   A. Increased hardware maintenance  
   B. Reduced uptime  
   C. Pay-as-you-go pricing  
   D. Software piracy  
   **Ans:** C
3. One major disadvantage of cloud computing is:  
   A. Easy upgrades  
   B. Vendor lock-in  
   C. Resource elasticity  
   D. Rapid deployment  
   **Ans:** B
4. Cloud computing helps reduce:  
   A. Internet dependency  
   B. Operational costs  
   C. Automation  
   D. Collaboration  
   **Ans:** B
5. Which of the following is a disadvantage?  
   A. Remote data access  
   B. Hardware independence  
   C. Dependency on network connection  
   D. Resource pooling  
   **Ans:** C
6. Cloud computing ensures high:  
   A. Manual configuration  
   B. Availability  
   C. Energy consumption  
   D. Static data  
   **Ans:** B
7. Cloud allows businesses to:  
   A. Avoid software upgrades  
   B. Build their own data centers  
   C. Focus on core activities  
   D. Install hardware manually  
   **Ans:** C
8. One of the disadvantages is:  
   A. Real-time access  
   B. Scalability  
   C. Data privacy risks  
   D. Cost reduction  
   **Ans:** C
9. Which factor reduces total cost of ownership?  
   A. Dedicated servers  
   B. Cloud hosting  
   C. Manual backups  
   D. In-house IT staff  
   **Ans:** B
10. A cloud-related risk is:  
    A. Data availability  
    B. Security breaches  
    C. Server virtualization  
    D. Lower costs  
    **Ans:** B
11. Cloud computing eliminates the need for:  
    A. Storage  
    B. Internet  
    C. Physical hardware investments  
    D. RAM  
    **Ans:** C
12. Which of the following is not an advantage?  
    A. Flexibility  
    B. Accessibility  
    C. Reduced latency due to long distances  
    D. Cost-efficiency  
    **Ans:** C
13. What aspect makes cloud computing attractive to startups?  
    A. High initial investment  
    B. Low scalability  
    C. No upfront hardware cost  
    D. Need for IT staff  
    **Ans:** C
14. Cloud services support environmental sustainability by:  
    A. Increasing energy use  
    B. Encouraging hardware duplication  
    C. Optimizing resource usage  
    D. Promoting paper use  
    **Ans:** C
15. What’s a major concern in cloud adoption?  
    A. Rapid updates  
    B. Energy efficiency  
    C. Data security  
    D. Elasticity  
    **Ans:** C
16. Cloud computing increases business:  
    A. Risk  
    B. Time-to-market  
    C. Downtime  
    D. Maintenance  
    **Ans:** B
17. Which is a technical disadvantage of cloud computing?  
    A. Resource sharing  
    B. Software automation  
    C. Internet dependency  
    D. Dynamic scaling  
    **Ans:** C
18. The risk of data being managed by third parties leads to concerns over:  
    A. Bandwidth  
    B. Security  
    C. Performance  
    D. Cost  
    **Ans:** B
19. Cloud improves resource utilization by:  
    A. Fixing usage  
    B. Over-provisioning  
    C. Sharing among multiple users  
    D. Using isolated machines  
    **Ans:** C
20. One disadvantage for mission-critical apps:  
    A. Cost  
    B. Performance issues due to shared resources  
    C. Manual updates  
    D. Lack of automation  
    **Ans:** B
21. Cloud computing is not suitable when:  
    A. Offline access is essential  
    B. Scalability is needed  
    C. Costs need to be reduced  
    D. Global accessibility is important  
    **Ans:** A
22. What can reduce performance in cloud environments?  
    A. Shared hardware  
    B. Virtualization  
    C. Bandwidth issues  
    D. All of the above  
    **Ans:** D
23. Advantage of cloud for software updates:  
    A. Manual process  
    B. Instant updates  
    C. Monthly delays  
    D. Client-side installations  
    **Ans:** B
24. What’s an advantage in terms of disaster recovery?  
    A. Manual backups  
    B. No recovery mechanism  
    C. Automated backup solutions  
    D. Offline-only access  
    **Ans:** C
25. Cloud platforms reduce need for:  
    A. Application support  
    B. Hardware purchases  
    C. Internet  
    D. Collaboration  
    **Ans:** B
26. A challenge in cloud is:  
    A. Customizability  
    B. Compatibility  
    C. Data migration  
    D. Availability  
    **Ans:** C
27. Which advantage allows global teams to work together?  
    A. Physical infrastructure  
    B. Real-time collaboration  
    C. Local file systems  
    D. LAN access  
    **Ans:** B
28. Which cost is lowered with cloud computing?  
    A. Maintenance  
    B. Energy  
    C. Labor  
    D. All of the above  
    **Ans:** D
29. Disadvantage related to cloud service providers:  
    A. 24/7 support  
    B. Dependency on external party  
    C. Reduced server cost  
    D. Application monitoring  
    **Ans:** B
30. Advantage of multi-tenancy in cloud:  
    A. Isolated resources  
    B. Shared cost and efficiency  
    C. Increased expenses  
    D. Manual control  
    **Ans:** B

**5. Cloud Computing Architecture – 30 MCQs**

1. Cloud architecture consists of:  
   A. Hardware only  
   B. Software only  
   C. Front-end and back-end  
   D. Database only  
   **Ans:** C
2. What is the interface between the user and cloud?  
   A. Middleware  
   B. Back-end  
   C. Front-end  
   D. Router  
   **Ans:** C
3. The component responsible for data storage in cloud architecture is:  
   A. Load balancer  
   B. Server  
   C. Database  
   D. Hypervisor  
   **Ans:** C
4. Which component ensures optimal distribution of workloads?  
   A. Firewall  
   B. Load balancer  
   C. Virtual machine  
   D. Storage  
   **Ans:** B
5. What is responsible for managing virtualized resources?  
   A. Firewall  
   B. Load balancer  
   C. Hypervisor  
   D. DNS  
   **Ans:** C
6. Backend in cloud architecture includes:  
   A. Browser  
   B. Mobile app  
   C. Servers, databases, storage  
   D. GUI  
   **Ans:** C
7. Which architecture component enforces security?  
   A. DNS  
   B. Firewall  
   C. Cloud broker  
   D. Interface  
   **Ans:** B
8. Cloud storage is part of which component?  
   A. Front-end  
   B. Client-side  
   C. Back-end  
   D. User interface  
   **Ans:** C
9. What is used to control and monitor the cloud system?  
   A. Management software  
   B. Load balancer  
   C. VM  
   D. Client  
   **Ans:** A
10. What connects client to cloud in architecture?  
    A. Switch  
    B. Front-end  
    C. Database  
    D. Storage  
    **Ans:** B
11. The software layer that provides platform services is:  
    A. SaaS  
    B. PaaS  
    C. IaaS  
    D. DaaS  
    **Ans:** B
12. The hardware-based service layer in architecture is:  
    A. SaaS  
    B. IaaS  
    C. PaaS  
    D. NaaS  
    **Ans:** B
13. What provides software over the internet?  
    A. SaaS  
    B. PaaS  
    C. IaaS  
    D. OSaaS  
    **Ans:** A
14. What mediates between users and cloud providers?  
    A. DNS  
    B. Cloud broker  
    C. Front-end  
    D. Router  
    **Ans:** B
15. Which manages networking in cloud backend?  
    A. Interface  
    B. Hypervisor  
    C. Router and switches  
    D. UI  
    **Ans:** C
16. What ensures data redundancy in cloud?  
    A. Virtualization  
    B. Replication  
    C. Encryption  
    D. Load balancing  
    **Ans:** B
17. APIs in cloud architecture help:  
    A. Manage energy  
    B. Connect apps and services  
    C. Create UI  
    D. Encrypt data  
    **Ans:** B
18. Which layer enables running apps without managing infrastructure?  
    A. SaaS  
    B. PaaS  
    C. IaaS  
    D. DaaS  
    **Ans:** B
19. Which component is not part of back-end?  
    A. Servers  
    B. Databases  
    C. Load balancer  
    D. Browser  
    **Ans:** D
20. What allows multiple virtual machines on a single hardware?  
    A. Firewall  
    B. Hypervisor  
    C. DNS  
    D. Router  
    **Ans:** B
21. Cloud controller handles:  
    A. DNS resolution  
    B. Resource allocation  
    C. Interface design  
    D. User creation  
    **Ans:** B
22. What part is responsible for cloud resource usage policies?  
    A. Monitoring tools  
    B. Scheduler  
    C. Resource manager  
    D. Client interface  
    **Ans:** C
23. Virtualization is primarily handled by:  
    A. Cloud broker  
    B. Load balancer  
    C. Hypervisor  
    D. Firewall  
    **Ans:** C
24. What provides the middleware in cloud?  
    A. API  
    B. SaaS  
    C. Interface  
    D. Hypervisor  
    **Ans:** A
25. Data integrity in cloud is ensured by:  
    A. Encryption  
    B. Replication  
    C. Access controls  
    D. All of the above  
    **Ans:** D
26. Which protocol helps in data transmission in the cloud?  
    A. FTP  
    B. HTTP  
    C. HTTPS  
    D. All of the above  
    **Ans:** D
27. The OS in cloud systems is part of:  
    A. Front-end  
    B. Middleware  
    C. Back-end  
    D. Router  
    **Ans:** C
28. Which of the following manages service deployment?  
    A. Load balancer  
    B. Orchestration  
    C. DNS  
    D. Client  
    **Ans:** B
29. PaaS provides access to:  
    A. Cloud-based servers  
    B. Operating systems  
    C. Development tools  
    D. Finished software  
    **Ans:** C
30. IaaS stands for:  
    A. Internet as a Service  
    B. Infrastructure as a Software  
    C. Infrastructure as a Service  
    D. Input as a Service

**Ans:** C

**6. Real-World Applications of Cloud Computing – 30 MCQs**

1. Which company provides AWS cloud services?  
   A. Google  
   B. Microsoft  
   C. Amazon  
   D. Apple  
   **Ans:** C
2. Which of the following is a cloud-based email service?  
   A. Gmail  
   B. Outlook  
   C. Yahoo Mail  
   D. All of the above  
   **Ans:** D
3. Google Docs is an example of:  
   A. IaaS  
   B. PaaS  
   C. SaaS  
   D. DaaS  
   **Ans:** C
4. Cloud is widely used in:  
   A. Gaming  
   B. Video streaming  
   C. Data storage  
   D. All of the above  
   **Ans:** D
5. Which of the following cloud services does Dropbox offer?  
   A. SaaS  
   B. IaaS  
   C. DaaS  
   D. PaaS  
   **Ans:** A
6. Which industry commonly uses cloud for medical records?  
   A. Education  
   B. Healthcare  
   C. Banking  
   D. Retail  
   **Ans:** B
7. Netflix uses cloud computing for:  
   A. Accounting  
   B. Movie streaming  
   C. Inventory  
   D. Hardware production  
   **Ans:** B
8. What is a benefit of cloud in education?  
   A. Collaborative learning  
   B. Expensive hardware  
   C. Offline access  
   D. None  
   **Ans:** A
9. Microsoft Azure is an example of:  
   A. Cloud platform  
   B. Cloud hardware  
   C. Cloud storage  
   D. Cloud browser  
   **Ans:** A
10. Cloud helps startups by offering:  
    A. Free physical servers  
    B. Scalable IT resources  
    C. On-premise services  
    D. Static services  
    **Ans:** B
11. What does CRM stand for in cloud-based business tools?  
    A. Client Return Management  
    B. Customer Resource Management  
    C. Customer Relationship Management  
    D. Corporate Resource Mapping  
    **Ans:** C
12. Salesforce is best known for:  
    A. Virtualization  
    B. Cloud gaming  
    C. CRM services  
    D. Operating systems  
    **Ans:** C
13. Real-time collaboration is a key feature of:  
    A. Static websites  
    B. Local storage  
    C. Cloud apps like Google Docs  
    D. Email services  
    **Ans:** C
14. Zoom and Microsoft Teams are examples of:  
    A. On-premise software  
    B. Hardware tools  
    C. Cloud-based communication tools  
    D. Virtual OS  
    **Ans:** C
15. Which of the following uses cloud for e-commerce?  
    A. Flipkart  
    B. Amazon  
    C. Shopify  
    D. All of the above  
    **Ans:** D
16. Which cloud application supports AI and ML?  
    A. Google Cloud AI  
    B. Facebook  
    C. Dropbox  
    D. Outlook  
    **Ans:** A
17. A popular cloud-based storage system is:  
    A. MS Word  
    B. PowerPoint  
    C. Google Drive  
    D. Paint  
    **Ans:** C
18. Cloud computing is useful in disaster recovery because:  
    A. Data is stored offsite  
    B. Data is destroyed locally  
    C. It is slow  
    D. It doesn’t store data  
    **Ans:** A
19. Spotify uses cloud for:  
    A. Selling CDs  
    B. Distributing music online  
    C. Local downloads only  
    D. Hardware streaming  
    **Ans:** B
20. In the financial sector, cloud helps with:  
    A. Hardware building  
    B. Secure online transactions  
    C. File printing  
    D. Manual record keeping  
    **Ans:** B
21. A common use of cloud in the software industry is:  
    A. Hosting development environments  
    B. Making paper charts  
    C. Selling hardware  
    D. Replacing the internet  
    **Ans:** A
22. Which of the following uses cloud to store and analyze large datasets?  
    A. Data mining software  
    B. Hadoop on cloud  
    C. MS Paint  
    D. Bluetooth tools  
    **Ans:** B
23. Which service is used for cloud gaming?  
    A. Stadia  
    B. YouTube  
    C. VLC  
    D. WinRAR  
    **Ans:** A
24. Which of these businesses benefit most from cloud scalability?  
    A. Seasonal retailers  
    B. Static shops  
    C. Small libraries  
    D. Single PCs  
    **Ans:** A
25. The most commonly used cloud for academic research is:  
    A. Google Scholar  
    B. Amazon EC2  
    C. OneDrive  
    D. None  
    **Ans:** B
26. Government uses of cloud include:  
    A. E-governance  
    B. Voting machines  
    C. Electricity lines  
    D. Bridges  
    **Ans:** A
27. What is a risk in cloud applications?  
    A. Unlimited storage  
    B. Data loss due to mismanagement  
    C. Free power  
    D. Fast internet  
    **Ans:** B
28. What enables video calling in cloud apps?  
    A. Cloud processing and storage  
    B. Floppy disk  
    C. BIOS  
    D. Hard disk  
    **Ans:** A
29. Which of these is a cloud-based office suite?  
    A. Google Workspace  
    B. Notepad  
    C. WinZip  
    D. Tally  
    **Ans:** A
30. Cloud adoption in businesses improves:  
    A. Cost-efficiency  
    B. Manual work  
    C. Offline activities  
    D. None  
    **Ans:** A

**7. VirtualBox / VMware Player – 30 MCQs**

1. What is VirtualBox?  
   A. A programming language  
   B. A hypervisor  
   C. A database  
   D. A compiler  
   **Ans:** B
2. VMware Player is used to:  
   A. Run virtual machines  
   B. Compile code  
   C. Design graphics  
   D. Encrypt files  
   **Ans:** A
3. Which of the following is a type-2 hypervisor?  
   A. VirtualBox  
   B. VMware Workstation  
   C. Both A and B  
   D. None  
   **Ans:** C
4. VirtualBox is developed by:  
   A. Microsoft  
   B. Google  
   C. Oracle  
   D. IBM  
   **Ans:** C
5. What does a hypervisor do?  
   A. Manages databases  
   B. Runs virtual machines  
   C. Compiles programs  
   D. Renders graphics  
   **Ans:** B
6. VMware Player runs on which OS?  
   A. Windows  
   B. Linux  
   C. Both A and B  
   D. Mac only  
   **Ans:** C
7. Virtual machines can run:  
   A. Operating systems  
   B. Web browsers  
   C. Only scripts  
   D. Only Windows  
   **Ans:** A
8. A virtual machine requires:  
   A. A host OS  
   B. RAM  
   C. Disk space  
   D. All of the above  
   **Ans:** D
9. Snapshot in VirtualBox is used for:  
   A. Taking pictures  
   B. Saving VM state  
   C. Deleting data  
   D. Encrypting the OS  
   **Ans:** B
10. Which is better for commercial use?  
    A. VMware Workstation Pro  
    B. VirtualBox  
    C. Notepad  
    D. Paint  
    **Ans:** A
11. Guest Additions in VirtualBox are used to:  
    A. Add photos  
    B. Improve VM performance  
    C. Run antivirus  
    D. Print files  
    **Ans:** B
12. VirtualBox Extension Pack enables:  
    A. USB 2.0/3.0 support  
    B. Remote Desktop  
    C. PXE boot  
    D. All of the above  
    **Ans:** D
13. What is a guest OS?  
    A. Host OS  
    B. OS inside VM  
    C. Browser software  
    D. Antivirus  
    **Ans:** B
14. What is NAT in VM networking?  
    A. Native Access Tool  
    B. Network Address Translation  
    C. Node Authentication Tool  
    D. None  
    **Ans:** B
15. Bridged networking allows VMs to:  
    A. Use their own IP on LAN  
    B. Stay offline  
    C. Encrypt traffic  
    D. Disable network  
    **Ans:** A
16. Shared folders in VM are used to:  
    A. Share files between host and guest  
    B. Encrypt files  
    C. Remove storage  
    D. Duplicate VMs  
    **Ans:** A
17. VMware Tools are similar to:  
    A. VirtualBox Guest Additions  
    B. Photoshop tools  
    C. Excel add-ins  
    D. Antivirus tools  
    **Ans:** A
18. What is the file extension of a VirtualBox VM?  
    A. .vdi  
    B. .exe  
    C. .jpg  
    D. .iso  
    **Ans:** A
19. Which feature allows creating multiple OS instances?  
    A. Cloning  
    B. Burning  
    C. Debugging  
    D. Refactoring  
    **Ans:** A
20. To install Linux on a VM, you need:  
    A. ISO file  
    B. CD-ROM  
    C. USB  
    D. None  
    **Ans:** A
21. Which virtual disk format is used by VMware?  
    A. .vmdk  
    B. .vdi  
    C. .img  
    D. .exe  
    **Ans:** A
22. VMware Player is also known as:  
    A. VMware Workstation Player  
    B. VMware Designer  
    C. VMware Editor  
    D. VMware Composer  
    **Ans:** A
23. What is the purpose of virtualization?  
    A. Run multiple OS on one machine  
    B. Increase power usage  
    C. Remove internet  
    D. Print reports  
    **Ans:** A
24. Which hypervisor supports 3D acceleration?  
    A. VMware  
    B. VirtualBox  
    C. Both A and B  
    D. None  
    **Ans:** C
25. USB device support in VMs requires:  
    A. Extension Pack or Tools  
    B. Printer  
    C. Scanner  
    D. Webcam  
    **Ans:** A
26. A virtual machine can be paused to:  
    A. Freeze current state  
    B. Shut down instantly  
    C. Encrypt data  
    D. Install BIOS  
    **Ans:** A
27. Host-only networking allows:  
    A. VMs to communicate only with host  
    B. Public internet access  
    C. Blocking all devices  
    D. Bluetooth only  
    **Ans:** A
28. Disk space for VM can be:  
    A. Fixed  
    B. Dynamically allocated  
    C. Both  
    D. None  
    **Ans:** C
29. Hardware virtualization is enabled in:  
    A. BIOS  
    B. Task Manager  
    C. File Explorer  
    D. CMD  
    **Ans:** A
30. VirtualBox can run:  
    A. Windows  
    B. Linux  
    C. Mac (with constraints)  
    D. All of the above  
    **Ans:** D

**Introduction to Cloud Deployment Models & Types**

1. What is a Public Cloud?  
   A. Cloud owned by a single organization  
   B. Cloud available to the general public  
   C. Cloud used only for government  
   D. Cloud used for internal testing  
   **Ans:** B
2. Which cloud deployment model offers maximum control and security?  
   A. Public Cloud  
   B. Private Cloud  
   C. Hybrid Cloud  
   D. Community Cloud  
   **Ans:** B
3. What defines a Hybrid Cloud?  
   A. Only public cloud  
   B. Combination of public and private cloud  
   C. Cloud shared by several organizations  
   D. Cloud only for educational institutions  
   **Ans:** B
4. Community Cloud is mainly used by:  
   A. Government agencies with common concerns  
   B. Private corporations  
   C. Any public user  
   D. Only hospitals  
   **Ans:** A
5. Which cloud model is best for organizations needing to share infrastructure?  
   A. Public Cloud  
   B. Private Cloud  
   C. Hybrid Cloud  
   D. Community Cloud  
   **Ans:** D
6. A disadvantage of Public Cloud is:  
   A. Limited scalability  
   B. Lower security risks  
   C. Possible lack of privacy  
   D. Difficult to access  
   **Ans:** C
7. Which cloud model offers on-premise infrastructure?  
   A. Public Cloud  
   B. Private Cloud  
   C. Hybrid Cloud  
   D. Community Cloud  
   **Ans:** B
8. Hybrid Cloud is often used for:  
   A. Disaster recovery and backup  
   B. Hosting only websites  
   C. Running legacy software only  
   D. None of the above  
   **Ans:** A
9. What is the primary benefit of Community Cloud?  
   A. Cost-sharing among similar users  
   B. Unlimited storage  
   C. Public accessibility  
   D. No internet needed  
   **Ans:** A
10. In which model does the cloud provider own and manage all hardware?  
    A. Private Cloud  
    B. Public Cloud  
    C. Hybrid Cloud  
    D. Community Cloud  
    **Ans:** B
11. Which model provides resources over the internet but isolates customers?  
    A. Public Cloud  
    B. Private Cloud  
    C. Hybrid Cloud  
    D. Community Cloud  
    **Ans:** B
12. The Hybrid Cloud model can help optimize:  
    A. Costs and security  
    B. Data encryption only  
    C. Only storage space  
    D. None of the above  
    **Ans:** A
13. Public Cloud is most suitable for:  
    A. Highly sensitive data  
    B. Scalable applications and services  
    C. Proprietary research  
    D. None  
    **Ans:** B
14. Private Cloud infrastructure is:  
    A. Shared among many users  
    B. Exclusively used by one organization  
    C. Publicly accessible  
    D. Owned by a third party only  
    **Ans:** B
15. Community Cloud deployments are generally:  
    A. Cheaper than public cloud  
    B. More expensive than private cloud  
    C. Shared by organizations with common concerns  
    D. Only for military use  
    **Ans:** C

**Cloud Service Models – IaaS, PaaS, SaaS**

1. What does IaaS stand for?  
   A. Internet as a Service  
   B. Infrastructure as a Service  
   C. Integration as a Service  
   D. Information as a Service  
   **Ans:** B
2. Which cloud service model provides virtualized computing resources over the internet?  
   A. IaaS  
   B. PaaS  
   C. SaaS  
   D. DaaS  
   **Ans:** A
3. PaaS stands for:  
   A. Platform as a Service  
   B. Process as a Service  
   C. Program as a Service  
   D. Performance as a Service  
   **Ans:** A
4. Which model allows developers to build, test, and deploy applications without managing the underlying infrastructure?  
   A. IaaS  
   B. PaaS  
   C. SaaS  
   D. None  
   **Ans:** B
5. SaaS means:  
   A. Software as a Service  
   B. Storage as a Service  
   C. Security as a Service  
   D. System as a Service  
   **Ans:** A
6. Which cloud model delivers software applications over the internet?  
   A. IaaS  
   B. PaaS  
   C. SaaS  
   D. CaaS  
   **Ans:** C
7. Which service model provides the least control to the user over the underlying hardware?  
   A. IaaS  
   B. PaaS  
   C. SaaS  
   D. None  
   **Ans:** C
8. An example of IaaS is:  
   A. Amazon EC2  
   B. Google App Engine  
   C. Gmail  
   D. Dropbox  
   **Ans:** A
9. Which model typically includes middleware, development tools, and database management?  
   A. IaaS  
   B. PaaS  
   C. SaaS  
   D. IaaS and SaaS  
   **Ans:** B
10. What is the main difference between PaaS and SaaS?  
    A. PaaS offers software apps, SaaS offers platform  
    B. PaaS is for developers, SaaS is for end users  
    C. Both are same  
    D. SaaS is cheaper  
    **Ans:** B
11. Which cloud service model allows users to rent virtual machines?  
    A. SaaS  
    B. PaaS  
    C. IaaS  
    D. DaaS  
    **Ans:** C
12. Which cloud service model typically charges based on usage?  
    A. IaaS  
    B. PaaS  
    C. SaaS  
    D. All of the above  
    **Ans:** D
13. Which cloud model provides a complete software application managed by a service provider?  
    A. IaaS  
    B. PaaS  
    C. SaaS  
    D. None  
    **Ans:** C
14. Developers focus mainly on application development in which cloud model?  
    A. IaaS  
    B. PaaS  
    C. SaaS  
    D. IaaS and SaaS  
    **Ans:** B
15. Which of the following is NOT a cloud service model?  
    A. IaaS  
    B. SaaS  
    C. PaaS  
    D. DaaS (Data as a Service)  
    **Ans:** D

**Cloud Data Lifecycle Phases**

1. What is the first phase in the cloud data lifecycle?  
   A. Data Deletion  
   B. Data Collection  
   C. Data Archiving  
   D. Data Analysis  
   **Ans:** B
2. In which phase is data stored for future use?  
   A. Data Collection  
   B. Data Storage  
   C. Data Usage  
   D. Data Deletion  
   **Ans:** B
3. Data Processing usually occurs during which lifecycle phase?  
   A. Data Storage  
   B. Data Usage  
   C. Data Deletion  
   D. Data Collection  
   **Ans:** B
4. What happens during the Data Sharing phase?  
   A. Data is deleted permanently  
   B. Data is moved to a backup system  
   C. Data is shared with authorized users or applications  
   D. Data is encrypted  
   **Ans:** C
5. Which phase ensures data is no longer needed and is safely removed?  
   A. Data Archiving  
   B. Data Deletion  
   C. Data Sharing  
   D. Data Collection  
   **Ans:** B
6. Why is Data Archiving important?  
   A. To permanently delete data  
   B. To keep data for long-term retention and compliance  
   C. To share data with third parties  
   D. To create backups only  
   **Ans:** B
7. Which phase typically involves encrypting data for security?  
   A. Data Usage  
   B. Data Sharing  
   C. Data Storage  
   D. Data Collection  
   **Ans:** C
8. During which phase is data validated and cleansed?  
   A. Data Processing  
   B. Data Archiving  
   C. Data Deletion  
   D. Data Sharing  
   **Ans:** A
9. What is a key concern in the Data Sharing phase?  
   A. Data duplication  
   B. Unauthorized access  
   C. Data compression  
   D. Data backup  
   **Ans:** B
10. The data lifecycle phase responsible for ensuring compliance with regulations is:  
    A. Data Collection  
    B. Data Archiving  
    C. Data Usage  
    D. Data Deletion  
    **Ans:** B
11. Which phase deals with data backup and recovery?  
    A. Data Storage  
    B. Data Sharing  
    C. Data Processing  
    D. Data Archiving  
    **Ans:** D
12. In which phase can data transformation occur?  
    A. Data Usage  
    B. Data Processing  
    C. Data Collection  
    D. Data Archiving  
    **Ans:** B
13. What is the main goal of the Data Usage phase?  
    A. To analyze and extract insights  
    B. To delete obsolete data  
    C. To move data to cold storage  
    D. To encrypt data  
    **Ans:** A
14. What phase follows Data Archiving in the lifecycle?  
    A. Data Collection  
    B. Data Processing  
    C. Data Deletion  
    D. Data Sharing  
    **Ans:** C
15. What is a typical risk if Data Deletion is not handled properly?  
    A. Data loss  
    B. Data breach or unauthorized recovery  
    C. Slow data access  
    D. Increased storage costs  
    **Ans:** B

**Cloud Service Providers – Overview of AWS, EC2, Instances**

1. Who is the founder of Amazon Web Services (AWS)?  
   A. Bill Gates  
   B. Jeff Bezos  
   C. Elon Musk  
   D. Sundar Pichai  
   **Ans:** B
2. What does EC2 stand for in AWS?  
   A. Elastic Compute Cloud  
   B. Elastic Container Cloud  
   C. Elastic Content Cloud  
   D. Electronic Compute Cloud  
   **Ans:** A
3. Which AWS service is used for scalable computing capacity?  
   A. S3  
   B. EC2  
   C. RDS  
   D. Lambda  
   **Ans:** B
4. Which of these is NOT an EC2 instance type?  
   A. T2  
   B. M5  
   C. C5  
   D. B2  
   **Ans:** D
5. What feature of EC2 automatically adjusts the number of instances based on demand?  
   A. Elastic Load Balancing  
   B. Auto Scaling  
   C. CloudFront  
   D. Route 53  
   **Ans:** B
6. What is an Amazon Machine Image (AMI)?  
   A. A virtual server template  
   B. A data backup system  
   C. A database service  
   D. A content delivery network  
   **Ans:** A
7. Which of the following is a key component of an AMI?  
   A. OS configuration  
   B. Application code  
   C. Launch permissions  
   D. All of the above  
   **Ans:** D
8. Elastic IP addresses are:  
   A. Static IP addresses that can be reassigned  
   B. Dynamic IP addresses  
   C. Private IP addresses  
   D. IP addresses for CDN only  
   **Ans:** A
9. Which AWS service distributes incoming traffic across multiple EC2 instances?  
   A. Auto Scaling  
   B. Elastic Load Balancing  
   C. CloudFront  
   D. VPC  
   **Ans:** B
10. How can you create an EC2 instance?  
    A. Using an AMI  
    B. Using a database snapshot  
    C. Using S3 bucket  
    D. Using Lambda functions  
    **Ans:** A
11. Which of the following is NOT a benefit of Auto Scaling?  
    A. Handling traffic spikes  
    B. Reducing costs  
    C. Increasing manual intervention  
    D. Improving application availability  
    **Ans:** C
12. EC2 instances can be stopped and restarted without losing data on:  
    A. Instance store volumes  
    B. EBS-backed storage  
    C. S3 buckets  
    D. DynamoDB  
    **Ans:** B
13. What is the default virtual network used by EC2 instances?  
    A. VPN  
    B. VPC  
    C. Route 53  
    D. CloudFront  
    **Ans:** B
14. Which AWS service provides Domain Name System (DNS) service?  
    A. Route 53  
    B. CloudFront  
    C. VPC  
    D. IAM  
    **Ans:** A
15. Which of these is NOT true about AWS?  
    A. It provides pay-as-you-go pricing  
    B. It offers global data centers  
    C. It requires upfront hardware purchases  
    D. It supports multiple instance types  
    **Ans:** C

**Cloud Storage & AWS Database Services**

1. What does S3 stand for in AWS?  
   A. Simple Storage Service  
   B. Secure Storage Service  
   C. Scalable Storage Service  
   D. Shared Storage Service  
   **Ans:** A
2. In Amazon S3, data is stored in:  
   A. Buckets  
   B. Containers  
   C. Volumes  
   D. Instances  
   **Ans:** A
3. What is the smallest unit of data stored in an S3 bucket?  
   A. Folder  
   B. Object  
   C. Block  
   D. File system  
   **Ans:** B
4. Which S3 storage class is designed for data that is accessed frequently?  
   A. S3 Standard  
   B. S3 Glacier  
   C. S3 One Zone-Infrequent Access  
   D. S3 Glacier Deep Archive  
   **Ans:** A
5. Amazon EBS stands for:  
   A. Elastic Block Store  
   B. Elastic Blob Storage  
   C. Elastic Backup Service  
   D. Elastic Bucket Storage  
   **Ans:** A
6. Amazon EBS volumes are used primarily for:  
   A. Object storage  
   B. Block storage  
   C. File storage  
   D. CDN caching  
   **Ans:** B
7. Which AWS storage service is optimized for long-term archival and backup?  
   A. Amazon EBS  
   B. Amazon S3  
   C. Amazon Glacier  
   D. Amazon RDS  
   **Ans:** C
8. Amazon RDS is a:  
   A. Relational Database Service  
   B. Remote Data Storage  
   C. Real-time Data Stream  
   D. Replicated Data System  
   **Ans:** A
9. Which of the following is a NoSQL database service offered by AWS?  
   A. Amazon RDS  
   B. Amazon DynamoDB  
   C. Amazon Redshift  
   D. Amazon Aurora  
   **Ans:** B
10. Amazon Redshift is used primarily for:  
    A. Transactional databases  
    B. Data warehousing and analytics  
    C. Key-value storage  
    D. Object storage  
    **Ans:** B
11. Which AWS database is designed for time series data?  
    A. Amazon Aurora  
    B. Amazon Timestream  
    C. Amazon DynamoDB  
    D. Amazon RDS  
    **Ans:** B
12. Amazon Aurora is:  
    A. A NoSQL database  
    B. A MySQL and PostgreSQL-compatible relational database  
    C. A data lake service  
    D. A file storage system  
    **Ans:** B
13. Which storage service allows you to manage voluminous data with block storage?  
    A. Amazon Glacier  
    B. Amazon EBS  
    C. Amazon S3  
    D. Amazon DynamoDB  
    **Ans:** B
14. Which of these AWS services is best for high throughput and low latency?  
    A. Amazon S3  
    B. Amazon EBS  
    C. Amazon Glacier  
    D. Amazon Redshift  
    **Ans:** B
15. Amazon S3 is an example of:  
    A. Block storage  
    B. Object storage  
    C. File storage  
    D. Database storage  
    **Ans:** B

**AWS Networking Services**

1. What does VPC stand for in AWS?  
   A. Virtual Private Cloud  
   B. Virtual Public Cloud  
   C. Virtual Protected Cloud  
   D. Verified Private Cloud  
   **Ans:** A
2. What is the purpose of a Virtual Private Cloud (VPC)?  
   A. To provide a private network for AWS resources  
   B. To manage user identities  
   C. To host websites only  
   D. To store data objects  
   **Ans:** A
3. Which AWS service provides a secure connection between on-premises data centers and AWS?  
   A. Route 53  
   B. AWS Direct Connect  
   C. Elastic Load Balancer  
   D. CloudFront  
   **Ans:** B
4. What does AWS VPN provide?  
   A. Private networking over the internet  
   B. Domain name resolution  
   C. Content delivery caching  
   D. Auto scaling  
   **Ans:** A
5. Route 53 is a service used for:  
   A. Domain Name System (DNS) management  
   B. Load balancing  
   C. Virtual networking  
   D. Content delivery  
   **Ans:** A
6. Which of these is NOT a typical VPC subnet type?  
   A. Public subnet  
   B. Private subnet  
   C. Isolated subnet  
   D. External subnet  
   **Ans:** D
7. What is the function of an Internet Gateway in a VPC?  
   A. Connects VPC to the internet  
   B. Connects VPC to VPN only  
   C. Connects AWS regions  
   D. Connects EC2 instances internally  
   **Ans:** A
8. What does AWS CloudFront provide?  
   A. Virtual machines  
   B. Content delivery network (CDN)  
   C. Relational databases  
   D. Object storage  
   **Ans:** B
9. Transit Gateway is used to:  
   A. Connect multiple VPCs and on-premises networks  
   B. Manage DNS records  
   C. Provide firewall services  
   D. Load balance EC2 instances  
   **Ans:** A
10. Which AWS service helps to distribute incoming application traffic across multiple targets?  
    A. Route 53  
    B. Elastic Load Balancer (ELB)  
    C. VPC  
    D. AWS Direct Connect  
    **Ans:** B
11. In a VPC with both public and private subnets, where are the database servers typically placed?  
    A. Public subnet  
    B. Private subnet  
    C. Internet Gateway  
    D. Elastic Load Balancer  
    **Ans:** B
12. What is the function of a NAT Gateway in AWS?  
    A. Allows instances in a private subnet to access the internet  
    B. Blocks internet access for instances  
    C. Provides DNS resolution  
    D. Balances load among EC2 instances  
    **Ans:** A
13. Which of the following is true about AWS Direct Connect?  
    A. It provides a dedicated network connection to AWS  
    B. It is an internet-based VPN service  
    C. It is used for DNS management  
    D. It provides content caching  
    **Ans:** A
14. What does Route 53 use to route traffic to different endpoints?  
    A. IP addresses only  
    B. DNS records  
    C. AMI images  
    D. S3 buckets  
    **Ans:** B
15. What is the maximum size of a VPC CIDR block?  
    A. /16 (65,536 IP addresses)  
    B. /24 (256 IP addresses)  
    C. /12 (1,048,576 IP addresses)  
    D. /28 (16 IP addresses)  
    **Ans:** A
16. Which AWS service offers edge locations worldwide for faster content delivery?  
    A. CloudFront  
    B. Route 53  
    C. VPC  
    D. Elastic Load Balancer  
    **Ans:** A
17. Which security configuration is used to control inbound and outbound traffic in a VPC?  
    A. Security Groups and Network ACLs  
    B. IAM roles  
    C. AMI permissions  
    D. EC2 Instance profiles  
    **Ans:** A