**Docker Introduction**

1. What is Docker primarily used for?  
   a) Virtualizing operating systems  
   b) Creating and managing containers  
   c) Developing frontend applications  
   d) Running only database applications
   * **Answer:** b) Creating and managing containers
2. Which of the following is **not** an advantage of Docker?  
   a) Lightweight and portable  
   b) Faster startup than VMs  
   c) Securely isolates applications  
   d) Requires a different OS for each container
   * **Answer:** d) Requires a different OS for each container
3. Which of the following is used to create and manage containers in Docker?  
   a) Docker Engine  
   b) Docker Swarm  
   c) Docker Image  
   d) Kubernetes
   * **Answer:** a) Docker Engine

**Dockerfile Creation**

1. What is the primary purpose of a Dockerfile?  
   a) To define the configuration of a virtual machine  
   b) To automate the creation of Docker images  
   c) To deploy applications to Kubernetes  
   d) To run Docker containers in production
   * **Answer:** b) To automate the creation of Docker images
2. Which keyword in a Dockerfile is used to specify the base image?  
   a) START  
   b) FROM  
   c) BASE  
   d) IMAGE
   * **Answer:** b) FROM
3. What does the CMD instruction in a Dockerfile do?  
   a) Specifies the default command to run inside the container  
   b) Copies files into the container  
   c) Builds the Docker image  
   d) Exposes ports for networking
   * **Answer:** a) Specifies the default command to run inside the container
4. What is the difference between CMD and ENTRYPOINT in a Dockerfile?  
   a) CMD overrides the base image, but ENTRYPOINT does not  
   b) CMD sets a default command, while ENTRYPOINT makes the command non-overridable  
   c) CMD is used for networking, while ENTRYPOINT is for security  
   d) CMD is used in build time, and ENTRYPOINT is for runtime
   * **Answer:** b) CMD sets a default command, while ENTRYPOINT makes the command non-overridable
5. Which instruction is used to copy files from the host machine to the container?  
   a) ADD  
   b) COPY  
   c) MOVE  
   d) IMPORT
   * **Answer:** b) COPY
6. Which of the following is NOT a Docker network driver?  
   a) Bridge  
   b) Overlay  
   c) VirtualBox  
   d) None
   * **Answer:** c) VirtualBox

**VPC (Virtual Private Cloud)**

1. What is a Virtual Private Cloud (VPC)?  
   a) A private cloud server  
   b) A logically isolated network in the cloud  
   c) A database hosting service  
   d) A security tool for cloud computing
   * **Answer:** b) A logically isolated network in the cloud
2. Which AWS component is required for creating a VPC?  
   a) Internet Gateway  
   b) Subnet  
   c) Route Table  
   d) None of the above
   * **Answer:** d) None of the above
3. How many VPCs can an AWS account create per region by default?  
   a) 1  
   b) 5  
   c) 10  
   d) Unlimited
   * **Answer:** b) 5

**NAT Gateway**

1. What is the purpose of a NAT Gateway?  
   a) To enable inbound internet traffic for private instances  
   b) To allow private instances to access the internet  
   c) To replace the Internet Gateway  
   d) To encrypt internet traffic
   * **Answer:** b) To allow private instances to access the internet
2. Where must a NAT Gateway be placed?  
   a) In a private subnet  
   b) In a public subnet  
   c) In a VPC Peering connection  
   d) Outside the VPC
   * **Answer:** b) In a public subnet

**Internet Gateway**

1. What is an Internet Gateway used for in AWS?  
   a) To connect a VPC to the internet  
   b) To route traffic within a VPC  
   c) To encrypt traffic within subnets  
   d) To provide a firewall for VPC security
   * **Answer:** a) To connect a VPC to the internet
2. Can a VPC have multiple Internet Gateways?  
   a) Yes  
   b) No
   * **Answer:** b) No

**Subnets**

1. What is the purpose of subnets in a VPC?  
   a) To divide a VPC into smaller network sections  
   b) To provide direct internet access to instances  
   c) To store data in the cloud  
   d) To manage security groups
   * **Answer:** a) To divide a VPC into smaller network sections
2. What is the main difference between a public and private subnet?  
   a) Public subnets allow direct internet access, private subnets do not  
   b) Private subnets are more expensive  
   c) Public subnets require NAT gateways  
   d) Private subnets do not use routing tables
   * **Answer:** a) Public subnets allow direct internet access, private subnets do not

**Routes**

1. What is a route table used for in AWS?  
   a) To define how network traffic is directed  
   b) To store logs of network traffic  
   c) To encrypt network traffic  
   d) To allocate IP addresses to instances
   * **Answer:** a) To define how network traffic is directed
2. What type of destination route must be added for an instance in a private subnet to reach the internet using a NAT Gateway?  
   a) 0.0.0.0/0 to the NAT Gateway  
   b) 10.0.0.0/16 to the Internet Gateway  
   c) 172.31.0.0/16 to the local route  
   d) 192.168.1.0/24 to a VPN
   * **Answer:** a) 0.0.0.0/0 to the NAT Gateway