Quiz: Elastic Container Service (ECS)

1. EC2 Container Service (ECS) task definition consists of three containers.
   There are multiple EC2 instances in the ECS cluster.
   Number of tasks to run is set to 1. How are containers placed?
   A. Three containers are placed across different EC2 instances
   B. Three containers are placed together in a single EC2 instance
   C. It is up-to scheduler to decide whether to place all containers in one instance or across instances
   D. Single Task maps to a Single Container. You cannot define multiple containers in a single task

2. An order processing application is made up of three tasks definitions. Each task requires specific IAM privileges to access other AWS services. What option would you use for granting permissions?
   A. Use Container instance IAM role to define the permissions needed for the application
   B. Use task role to define the permissions needed for specific task
   C. Use container role to define the permissions needed at container

3. There are several benefits of Containers. Which one of these statements is incorrect?
   A. Container is an immutable image with all dependencies
   B. Container can use any supported programming language
   C. Container is a versioned artifact
   D. Container placement and monitoring can get very complex
   E. Container generally are not deployable at scale

4. You have a containerized application that needs to dynamically adjust capacity based on workload. What type of scaling is supported in ECS and Autoscaling?
   A. You can dynamically adjust number of tasks
   B. You can dynamically adjust number of instances in a cluster
   C. You have flexibility to adjust number of tasks as well as number of instances in a cluster

5. You are using Dynamic Host port mapping for a container in your ECS task definition. What does this mean?
   A. Container listens on a specific port; however, Host instance port is automatically assigned
   B. Container listens on a dynamic port; however, Host instance port is statically assigned

6. You need to have your tasks running 24x7. What type of launch option is suitable for this?
    A. Service
    B. RunTask

7. You want to opt for a serverless container model with flexibility to scale on-demand. What container deployment model is suitable in this case?
    A. ECS Cluster
    B. Lambda
    C. ECS Fargate

Answers:

1. B – Task Definition can contain one or more containers. Each task created from the task definition runs in an EC2 instance. All containers that are part of the task run in the same machine. Second instance of the task may run in a different machine.
2. B – You can grant permissions needed for a task using Task Role. ECS container instance IAM role would grant same privileges to all tasks running in the instance. This may not be desirable as you would end up granting same permissions to tasks belonging to different tasks definitions.
3. E – Containers are optimal for micro services based architecture where you can decompose a large application into smaller independent services. Containers are versioned, immutable images that can built using different languages and applications. You would need a container management solution like ECS to monitor and place containers in a cluster of instances. Because of these benefits, containers can be deployed at scale.
4. C – ECS working with Autoscaling provides you with tools to scale your tasks as well as the instances in your cluster
5. A – Container listens on a specific port; however, Host port is dynamically assigned. Services like Application Load Balancer automatically tracks the mapping between host port and container port.
6. A – Service tasks are suitable for long running tasks. It can also automatically replace failed tasks to maintain required capacity. RunTask is suitable for processes such as batch jobs that perform work and then stop. You can also schedule tasks using CloudWatch Events for running your tasks at specified intervals.
7. C – Fargate is preferred option as AWS takes care of provisioning required resources, management and orchestration. You pay only when your containers are running. Lambda is used for event driven processing workloads.