Quiz: CloudFormation

1. Following are some of the benefits of CloudFormation. Which one of these is incorrect?
    A. You can easily duplicate your infrastructure with CloudFormation
    B. If there is an error during stack creation, CloudFormation automatically removes the resources it created
    C. CloudFormation allows you to reuse templates using nested templates
    D. CloudFormation allows you to refer to existing resources using Cross Stack references
    E. CloudFormation automatically verifies quota for all resource types
2. You have created a RDS database "MyDatabase" using cloudformation script and would like to output address of the database endpoint that was created.

    How can you query the endpoint from the database resource?

    A. { "Fn::GetAtt" : ["MyDatabase", "Endpoint.Address"] }
    B. { "Ref" : ["MyDatabase", "Endpoint.Address"] }
    C. { "Parameter" : ["MyDatabase", "Endpoint.Address"] }
    D. { "FindInMap" : ["MyDatabase", "Endpoint.Address"] }

3. How are permissions required for resource creation managed in CloudFormation?
    A. CloudFormation uses IAM user credentials to create resources
    B. CloudFormation uses privileges granted through configure IAM Role to create resources
    C. CloudFormation can be configured to either use user credentials or IAM Role credentials to create resources
4. What does this statement do in CloudFormation?
    "ImageId" : { "Fn::FindInMap" : ["RegionMap", { "Ref" : "AWS::Region" }, "64"]}
    A. In the mapping 'RegionMap', first do a lookup based on the region where the script is running. Finally, filter based based on key '64'.
    B. In the mapping 'RegionMap', do a lookup based on key '64' and then perform a lookup based on on the region where the script is running
    C. In the mapping 'AWS::Region', do a lookup based on key '64' and then perform a lookup on the map 'RegionMap'
    D. First dereference user specified value for 'AWS::Region' parameter. Next do a lookup on 'RegionMap' for that region and finally, filter based on key '64'.
5. When creating a stack, you would like CloudFormation stack to prompt you to select an existing EC2 Key pair associated with your account.
    What mechanism does CloudFormation provide to refer to existing keypairs?
    A. In Parameters section, specify parameter type as 'AWS::EC2::KeyPair::KeyName'

B. Under Input section, specify input type as 'AWS::EC2::KeyPair::KeyName'

6. You have created a security group named "WebServerSG" in the CloudFormation script. You would like to use this group when creating the EC2 instances as part of a CloudFormation Stack.
   How would you specify this in the scripts?
   A. "SecurityGroups" : {"Ref" : "WebServerSG"}
   B. "SecurityGroups" : ["WebServerSG"]
   C. "SecurityGroups" : { "Query" : "WebServerSG"}
   D. "SecurityGroups" : "WebServerSG"

7. You need to output address of the application load balancer endpoint that was created by the CloudFormation script. Logical Name of the Load Balancer is RegistryServiceELB.

   How can you query the value?

   A. { "Fn::GetAtt":["RegistryServiceELB", "Endpoint.Address"] }
   B. { "Fn::GetAtt":["RegistryServiceELB", "LoadBalancerFullName"] }
   C. { "Fn::GetAtt":["RegistryServiceELB", "LoadBalancerArns"] }
   D. { "Fn::GetAtt":["RegistryServiceELB", "DNSName"] }

8. CloudFormation script has a mapping of AMI ID by region and architecture.
   AMI Architecture (32 bit or 64 bit) is specified using AMIArch input parameter.

   What command would you use to find the AMI ID for currently executing region?

```
"Mappings" : {
  "RegionMap" : {
    "us-east-1" : { "32" : "ami-6411e20d", "64" : "ami-7a11e213" },
    "us-west-1" : { "32" : "ami-c9c7978c", "64" : "ami-cfc7978a" },
    "eu-west-1" : { "32" : "ami-37c2f643", "64" : "ami-31c2f645" },
    "ap-southeast-1" : { "32" : "ami-66f28c34", "64" : "ami-60f28c32" },
    "ap-northeast-1" : { "32" : "ami-9c03a89d", "64" : "ami-a003a8a1" }
  }
 }
```

   A. {"Fn::FindInMap" : [{"Ref": "RegionMap"}, { "Ref" : "AWS::Region" }, { "Ref" : "AMIArch" }]
   B. { "Fn::FindInMap" : ["RegionMap", { "Ref" : "AWS::Region" }, { "Ref" : "AMIArch" }]}
   C. { "Fn::FindInMap" : ["RegionMap", { "Ref" : "AWS::Region" }, "AMIArch"]}

D. { "Fn::FindInMap" : ["AMIArch", { "Ref" : "AWS::Region" }, { "Ref" : "RegionMap" }]}

Answers:

1. E– CloudFormation does not check for quota limits. You would need to ensure all resources can be created without hitting account limits
2. A - You can query the value of an attribute using GetAtt function. https://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/intrinsic-function-reference-getatt.html
3. C – CloudFormation allows you to either use user credentials or IAM roles to create resources. With user credentials, user needs to have necessary privileges to those resources. With IAM role, resource permissions are defined in the role that CloudFormation can assume. In this case, user simply needs permission for CloudFormation stack specific actions like: view templates, view stacks, create stacks or delete stacks and so forth.
4. A - FindInMap Function Reference: http://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/intrinsic-function-reference-findinmap.html
5. A – You can use supported AWS Parameter types. CloudFormation automatically verifies values of AWS specific Parameter Types to minimize errors during stack creation
6. A – You can refer to existing resources using their logical ID with **Ref** function. https://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/intrinsic-function-reference-ref.html
7. D – You can query the value of an attribute using GetAtt function. DNSName would return the address of the load balancer https://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/intrinsic-function-reference-getatt.html
8. B - FindInMap Function Reference: http://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/intrinsic-function-reference-findinmap.html