**AWS Assignment 5**

1. Describe the Amazon C4 instance.

**Answer:** C4 instance is a latest generation Amazon EC2 computing optimized instance. C4 instances are designed for compute-intensive workloads. Traffic-heavy front-end fleets, MMO games, media processing, transcoding, and high-performance computing (HPC) applications. C4 instances come in 5 sizes and provide up to 36 vCPUs. The C4 instance is based on the Intel Xeon E52666 v3 processor, which operates at a fundamental frequency of 2.9GHz and can use Intel Turbo Boost to provide clock speeds up to 3.5GHz. All C4 instance types are EBS optimized by default at no additional cost. This feature provides EBS with a dedicated throughput of 500 Mbps to 4,000 Mbps, which exceeds the overall network throughput provisioned for the instance. C4 instances also provide enhanced networks for higher PPS (packet / sec) performance, lower network jitter, and lower network delay.

1. What is ElastiCache?

**Answer:** Amazon ElastiCache is a fully managed in-memory caching service that supports real-time and flexible use cases. ElastiCache can be used for caching to accelerate application and database performance. It can also be used as the primary data store for use cases that do not require persistence, such as session storage, game leader boards, streaming, and analytics. ElastiCache is compatible with Redis and Memcached. ElastiCache accelerates application performance, facilitates back-end database loads, and creates low-latency data stores.

1. Explain SimpleDB.

**Answer:** Amazon SimpleDB is a highly available NoSQL data store that removes workloads from database management. Developers simply store and query data items via web service requests, and Amazon SimpleDB does the rest. Without being bound by the stringent requirements of relational databases, Amazon SimpleDB is optimized to provide high availability and flexibility with little or no administrative overhead. Behind the scenes, Amazon SimpleDB automatically creates and maintains multiple geographically dispersed replicas of your data for high availability and data durability. This service only charges for the resources used to store the data and process the request. You can change the data model on the fly and the data will be automatically indexed. With Amazon SimpleDB, you can focus on application development without worrying about infrastructure provisioning, high availability, software maintenance, schema and index management, or performance tuning.

1. Mention the benefits of WAF.

**Answer: Benefits of Web Application Firewall:**

1. Prevents attacks such as SQL injection, cross-site scripting (XSS) attacks, and distributed denial of service (DDoS) attacks.
2. Prevent your customer data from being compromised and maintain trust.
3. Check compliance with regulations such as HIPAA and PCI.
4. Free up team resources by automatically running security tests and monitoring traffic.
5. Explain Elastic Block is a store that sells elastic blocks.

**Answer:** Amazon Elastic Block Store (Amazon EBS) provides block-level storage volumes for use with EC2 instances. EBS volumes behave like raw, unformatted block devices. You can mount these volumes as devices on your instance. EBS volumes attached to an instance are exposed as storage volumes that last for the life of the instance. You can create a file system on these volumes or use them as you would with a block device (such as a hard drive). You can dynamically change the configuration of the volumes attached to your instance. Amazon EBS is recommended for data that needs quick access and long-term persistence. EBS volumes are particularly well-suited as primary storage for applications that require fine-grained updates and block-level access to file systems, databases, or raw storage. Amazon EBS is suitable for both database-like applications that rely on random reads and writes, and throughput-intensive applications that perform long, continuous reads and writes.