Week 12 Graded Questions with Solutions

1] Which of the following would be characteristics of a good CDN ___ . [MCQ: 2 points]

1. multiple servers in different geographical locations
2. multiple servers concentrated in one high efficiency data center
3. good connectivity to Jio even if connection to Airtel and other networks is poor
4. None of the above

Answer: Option 1.

Solution: Multiple servers in same data center leads to risk of single point of failure. Connecting to only one provider is not useful in a CDN as it has to be well connected to as many providers as possible

2] Possible problems with continuous deployment are: [MSQ: 3 points]

1. presence of bugs that were not caught by tests.
2. users will see up to date versions of the application.
3. users may be forced to change to a new interface when they don't want to.
4. increased load on servers

Answer: Option 1 and 3.

Solution: No specific reason to increase load on the servers, and seeing up to date applications is usually desirable.

3] Consider the following statements and choose the correct option. [MCQ: 2 points]

Statement 1: When multiple backend servers are used, database replication techniques must be used to make sure that the data is the same in all cases.
Statement 2: It is possible to run multiple frontend servers on a single physical server using concepts from parallelism

1. Both, statement 1 and 2 are correct.
2. Both, statement 1 and 2 are incorrect.
3. Statement 1 is correct but, statement 2 is incorrect.
4. Statement 2 is correct but, statement 1 is incorrect.

Answer: Option 1.

Solution: Frontends need not be physically separate and can be separate processes on different CPUs of the same server.

4] Which of the following statements is true for 'Continuous integration'? [MCQ: 3 points]

1. Continuous Integration can only be implemented using web-based interfaces like github.
2. Continuous integration requires powerful servers that can run all tests on a repository every time a change is pushed to the server.
3. Continuous integration is only needed on projects with multiple developers.

4. Using continuous integration is sufficient to guarantee that an application will be completely tested and remain defect free.

Answer: Option 2.

Solution: Continuous integration is more a concept than something specific about github, and can be implemented in other ways. Since CI can trigger multiple compilation or build steps, it can lead to lot of load on the servers. It can be useful even if only a single developer is working on a project, as it takes care of automating repetitive tasks.

5] Which of the following is/are true for Continuous deployment? [MSQ: 1 point]

1. Continuous Deployment refers to the procedures that must be followed after code has been integrated in order for app updates to be sent to users.
2. Continuous Deployment keeps an application safe from becoming obsolete.
3. Continuous Deployment can be helpful to create a feedback loop with the end user with the app.
4. All of the above

Answer: Option 1 and 3.

Solution: Continuous Deployment does not guarantee as that depends on updating functionality of the application

6] Consider the following statements and choose the correct option. [MCQ: 1 point]

Statement 1: Google App Engine is an example of platform as a service.
Statement 2: Google docs is an example of platform as a service.

1. Both, statement 1 and 2 are correct.
2. Both, statement 1 and 2 are incorrect.
3. Statement 1 is correct but, statement 2 is incorrect.
4. Statement 2 is correct but, statement 1 is incorrect.

Answer: Option 3.

Solution: On a fully managed serverless platform, Google App Engine allows app developers to create scalable web and mobile backends in any programming language. However for google docs, there isn't really much "development" that can happen on top of Google docs (apps scripts are not really developing new applications) so it is not appropriate to consider it a platform.

7] Which of the following statements is/are true for PaaS? [MCQ: 2 points]

1. In PaaS, the platform provider writes and maintains the code required to implement the application.
2. With PaaS, developers do not have control over how their applications can scale to large numbers of users.
3. While using Paas, developers have to write and maintain the code
4. All of the above

Answer: Option 3.

Solution: While using Paas, developers have to write and maintain the code. There is some control available to the user, but they have to work with the provider.