

BSCCS2003: Graded Questions with Solutions
Week 6

1. REST APIs are 'stateless', with keeping that in mind, which of the following statements is/are true? [MSQ : 2 Points]

- ✓ Every request from the client is independent of one another, i.e., the request runs independently of other requests from the same client.
- ✓ The client cannot assume state of the server.
- ✓ The server need not maintain the client's previous interaction.
- ☐ Sometimes, the server can take advantage of any previously stored context information on the server.

Solution: Option 4) The server cannot take advantage of any previously stored information on the server, as in REST API, statelessness means that every HTTP request happens in complete isolation. They should not keep a client state on the server and vice versa.

2. Which of the following is/are true regarding POST HTTP method? [MSQ : 3 points]

- ☐ It should be safe in context of REST.
- ☐ It should be idempotent in context of REST.
- ✓ It is allowed in HTML forms.
- ✓ POST Request has a body.

Solution: An HTTP method is safe if it does not change the state of the server. POST request is used to create a resource. It changes the state of the server, so it is not safe. It is not idempotent because multiple identical POST request can create multiple resources. It is allowed in the HTML forms. And POST request has a body.

3. For an API, which of the following can be an output? [MCQ: 2 points]

- ✓ JSON
- ✓ XML
- ✓ YAML
- ✓ CSV

Solution: The most common outputs of an API are JSON, XML and YAML. JSON is most popular as most APIs give JSON as output. APIs can produce CSV as the output, but a CSV file is not a standard output, and they might lack in structure.

4. Which of the following come(s) under authenticated APIs in the context of the CoWin website? [MSQ : 2 Points]

- ☐ state-wise search of positive cases.
- ☐ district-wise search for medicine.
- ☒ booking appointment for vaccination.
- ☒ download vaccination certificate.

Solution: The authentication APIs enable us to manage and control all the aspects of user identity. Booking an appointment or downloading a certificate on CoWin website requires mobile OTP to authenticate the user. Retrieving general information will come under unauthenticated APIs.

5. Consider the following YAML file.

```
openapi: 3.1.0
info:
  title: A minimal OpenAPI document
  version: 0.0.1
paths: {}
```

How many endpoints are defined in the given YAML file?

[MCQ: 1 points]

- ☒ 0
- ☐ 1
- ☐ 2
- ☐ 3

Solution: Empty curly braces corresponding to 'paths' denote null array and state that no endpoint has been defined for given OpenAPI.

6. In the context of REST, a DELETE request that deletes a random resource in the database will be _____. [MCQ: 3 points]

- ☐ idempotent
- ✓ ☒ not idempotent
- ☐ safe
- ☐ All of the above

Solution: A DELETE request of a random resource from the database is a violation of REST principles.

7. Which of the following is an invalid JSON object? [MCQ : 1 Points]

- ☐ {
 "Year" : "2020",
 "Month" : 4,
 "Date" : 19
}
- ☐ {
 "Year" : 2016,
 "Month" : "7",
 "Date" : 28
}
- ✓ ☒ {
 "Year" : "2007",
 "Month" : 2,
 "Date" : NULL
}
- ☐ None of the above

Solution: A JSON object is a collection of key : value pairs, where a key must be a string and value can be a number, string, object, array, true, false, array or null. NULL is not a valid value, but null is a valid JSON value.