Programme: B.Sc (Computer Science) - (CBCGS)
Year: III/Semester V(Exam Year: 2023-2024)

Subject: WEB SERVICES
Date: 19 Oct 2023   **Time: 10:30 am to 01:00 pm (02:30 Hrs.)**
Max. Marks: 75

FINAL EXAMINATION (Acad. Year:**2023-2024)**

Instructions:
1. This question paper contains 2 pages.
2. Answer to each new question to be started on a fresh page.
3. Figure in right hand side indicates full marks

Q.1	**Answer the Following (Attempt any 3)**	**(15)**
A.	Discuss the handshaking and how the client server communication is established	5
B.	Differentiate Between SOAP and REST	5
C.	Elaborate on WSDL	5
D.	Write a web service method that accepts a number n and returns the binary equivalent of a decimal number using JAX-WS. Justify the different parts of the program used.	5
Q.2	**Answer the Following (Attempt any 3)**	**(15)**
A.	Explain the different Annotations for specifying request-response media types.	5
B.	"JavaScript is a single threaded" the given statement is true or not Justify your answer	5
C.	How you can create the API using JS. Create the API which accepts username and password from the user as username and password is correct then display the user name	5
D.	Explain Node and use of Node in detail	5
Q.3	**Answer the Following (Attempt any 3)**	**(15)**
A.	What is graphQL and how graphQL manages the functions	5
B.	Difference between GraphQL and REST	5
C.	Elaborate on connection between NOSQL database and GraphQL and state the advantages of graphQL with NoSQL Datasases	5
D.	Develop the code to store userdata like name, dob and password make sure that you are following all server level validation and show that graphQL Type validation	5
Q.4	**Answer the Following (Attempt any 3)**	**(15)**
A.	Explain the structure of Windows Service Framework	5
B.	Develop the C# services to create webservice to calculate compound interest	5

| C. | Explain QoS and how we can improvise QoS using Micro Services | 5 |
| D. | Develop the C# services to create webservice to validate the user | 5 |

Q. 5 **Answer the Following (Attempt any 3)** (15)

A.	Explain XML and write the steps to decode XML code	5
B.	Develop the Node Js Code to send user and user company information in JSON	5
C.	Explain Schema and types in graphQL	5
D.	Explain the difficulties with server less webservices	5

SVKM'S
Mithibai College of Arts, Chauhan Institute of Science &
Amrutben Jivanlal College of Commerce and Economics (Autonomous)
Academic Year (2022-23)
Class:TYBSC   Semester: V

Program: B.Sc Computer Science   Max. Marks: 75
Course Name: Web Services   Time: 10:30 a.m to 1:00 p.m
ourse Code: USMACS505   Duration: 2 hrs 30 minutes
Date:

REGISTER EXAMINATION

REGULAR EXAMINATION

Instructions: Candidates should read carefully the instructions printed on the question paper and on the cover of the Answer Book, which is provided for their use.
1) This question paper contains 3 pages.
2) Answer to each new question to be started on a fresh page.
3) Figures in brackets on the right-hand side indicate full marks.
4) Assume Suitable data if necessary.

Q. 1   **Attempt any THREE**   **(21M)**

(a)   Define Operation. Explain the following operations in web services with an example:

- One-way
- Request/response
- Solicit response
- Notification

(b)   Explain SOAP in detail. Also List the advantages and disadvantages of SOAP.

(c)   Why is a service description needed? Explain in detail about WSDL.

(d)   Write a web service method that accepts a number n and returns the binary equivalent of a decimal number using JAX-WS.

Justify the different parts of the program used.

Q. 2   **Attempt any THREE**   **(21M)**

(a)   What is REST? Explain any five JAVA frameworks for building RESTful web services.

(b)   Explain the different Annotations for specifying request-response media types.

(c)   Explain the role of UDDI and SOAP in description and discovery of RESTful web services?

(d)   Write an API method that returns the grade of the student for 5 subjects using JAX-RS where the subject marks are passed from user. (take assumptions)

Q. 3   **Attempt any THREE**   **(21M)**

(a)   Explain Queries and Mutations in GraphQL.

(b)   Differentiate between REST and GraphQL.

(c)   State and explain features of nodejs. Also discuss Prisma database with respect to GraphQL.

(d)   Using SDL write schema definition for the following JSON, where the Types in the JSON are Person and Posts.

```
{
 "data": {
  "allTechnologies": [
   {
    "name": "JavaScript",
    "projects": [
     {
      "backend": "Node.js",
      "frontend ": "Angular and React "
     }
    ]
   },
   {
    "name": "Internal CSS",
    "projects": [
     {
      "backend": null,
      "frontend": "PHP Bootstrap and Material Design Lite"
     }
    ]
```

```
        }
      ]
    }
  }
```

Q. 4   **Answer in Short [any THREE]**   **(12M)**

(a)   SOAP is called as a lightweight process. Justify

(b)   Differentiate between HTTP and HTTPS

(c)   Define the following: -

           1. Service Level Agreement

           2. Web Service Definition Language

           3. Service Oriented Architecture

           4. Remote Procedure Call

(d)   Write a note on GraphQL data types

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RE   EXAMINATION

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Q. 1   **Attempt Any THREE**   (21M)

(a)   What is Web Service Development Lifecycle? Explain different phases of the Web Service Development Lifecycle in detail.

(b)   Explain the two types of web services in detail.

(c)   State and explain the different layers of Service Oriented Architecture.

(d)   What is SOAP? Discuss why SOAP is called as a lightweight process.

Q. 2   **Attempt Any THREE**   (21M)

(a)   What is REST? Explain RESTful services in detail.

(b)   List and explain the core constraint of RESTful system.

(c)   What are different security practices and measures for REST.

(d)   Explain data exchange models in JSON.

Q. 3   **Attempt Any THREE**   (21M)

(a)   What is Graphql? Discuss on how GraphQL is the better REST.

(b)   Explain Authentication and Authorization in GraphQL.

(c)   Explain GraphQL - Application Components with the help of diagram.

(d)   Write a note on : 1) Graphiql 2) JSON in GraphQL

Q. 4   **Answer in Short [any THREE]**   **(12M)**
(a)   What do you mean by Synchronicity?
(b)   What is HATEOAS?
(c)   State the use and the fields of package.json file.
(d)   Justify the following GraphQL code:

```
var { graphql, buildSchema } = require('graphql');
var schema = buildSchema(`

  type Query {
    hello: String
  }
`);
var rootValue = { hello: () => 'Hello world!' };
var source = '{ hello }';
graphql({ schema, source, rootValue }).then((response) => {
  console.log(response);
});
```

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