Question Number : 92 Question Id : 640653586999 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

Consider the following recurrences and choose the correct option.

1. $T_1(n) = 3T_1(n/3) + O(n)$
2. $T_2(n) = 2T_2(n/4) + O(n^2)$

Base Case:- $T_1(1) = T_2(1) = 1$

Options :

6406531958664. ✖ $T_1 = O(n)$ and $T_2 = O(n^2)$

6406531958665. ✔ $T_1 = O(n\ log\ n)$ and $T_2 = O(n^2)$

6406531958666. ✖ $T_1 = O(n)$ and $T_2 = O(n\ log\ n)$

6406531958667. ✖ $T_1 = O(n^2)$ and $T_2 = O(n^2)$

AppDev1

Section Id :	64065339713
Section Number :	7
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	17
Number of Questions to be attempted :	17
Section Marks :	50
Display Number Panel :	Yes

Group All Questions :	No
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	64065384373
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Number : 93 Question Id : 640653587000 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 0

Question Label : Multiple Choice Question

THIS IS QUESTION PAPER FOR THE SUBJECT "DIPLOMA LEVEL : MODERN APPLICATION DEVELOPMENT I (COMPUTER BASED EXAM) "

ARE YOU SURE YOU HAVE TO WRITE EXAM FOR THIS SUBJECT?
CROSS CHECK YOUR HALL TICKET TO CONFIRM THE SUBJECTS TO BE WRITTEN.

(IF IT IS NOT THE CORRECT SUBJECT, PLS CHECK THE SECTION AT THE TOP FOR THE SUBJECTS REGISTERED BY YOU)

Options :

6406531958668. ✔ YES

6406531958669. ✖ NO

Sub-Section Number :	2
Sub-Section Id :	64065384374
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 94 Question Id : 640653587001 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Consider the following flask application and select the correct option if the application is running locally on `http://127.0.0.1:5000`.

```
from flask import Flask

app = Flask(__name__)

@app.route('/work')
@app.route('/home')
def my_task():
    return "<h1>Hello! Reporting for my task</h1>"

app.run()
```

Options :

6406531958670. ✖ The application will return `200 OK` status code for `/home` endpoint only

6406531958671. ✖ The application will return `200 OK` status code for `/work` endpoint only

6406531958672. ✔ The application will return `200 OK` status code for both the endpoints

6406531958673. ✖ The application will throw an `AssertionError` for both the endpoints

Question Number : 95 Question Id : 640653587002 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Which of the following statements about OpenAPI Specification (OAS) is true?

Options :

6406531958674. ✖ OAS is a programming language used for building APIs.

6406531958675. ✔ OAS is a way to describe interfaces for building RESTful APIs.

6406531958676. ✖ OAS is a tool used for testing the performance of APIs.

6406531958677. ✖ OAS is a software library used for authenticating API requests.

Question Number : 96 Question Id : 640653587005 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Map the terms in column A with their correct interpretations in column B.

	Column A		Column B
a	Scale up	1	financial transactions
b	ACID	2	adding more physical servers
c	Scale out	3	increasing RAM
d	BASE	4	social media

Options :

6406531958686. ✔ a → 3, b → 1, c → 2, d → 4

6406531958687. ✖ a → 4, b → 2, c → 1, d → 3

6406531958688. ✖ a → 4, b → 3, c → 1, d → 2

6406531958689. ✖ a → 3, b → 2, c → 1, d → 4

Question Number : 97 Question Id : 640653587011 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Consider the following view function.

```
@app.route('/student', methods = ['GET', 'POST'])
def show_student():
    std = request.args
    details = {
                'Department': std['dept'],
                'Course-level': std['level'],
                'Course': std['course']
            }
    return details
```

If this flask app is running locally on http://127.0.0.1:5000, which of the following URLs will be handled by the controller correctly?

Options :

6406531958710. ✖ `http://127.0.0.1:5000/student/Electrical/Diploma/MAD1`

6406531958711. ✖ `http://127.0.0.1:5000/Electrical/Diploma/MAD1`

6406531958712. ✔ `http://127.0.0.1:5000/student?dept=Electrical&level=Diploma&course=MAD1`

6406531958713. ✖ `http://127.0.0.1:5000?endpoint=student&dept=Electrical&level=Diploma&course=MAD1`

Sub-Section Number :	3
Sub-Section Id :	64065384375
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 98 Question Id : 640653587003 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

What will be the output of the following Python code snippet on the terminal?

```
def modify(n):
    def modifier(n):
        ser = [0,1]
        for i in range(n-2):
            new = ser[i]+ser[i+1]
            ser.append(new)
        print(ser)
    return modifier

@modify
def list_num(n):
    nums = []
    for i in range(n):
        nums.append(i+1)
    print(nums)

list_num(10)
```

Options :

6406531958678. ✖ `[0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10]`

6406531958679. ✖ `[1, 2, 3, 4, 5, 6, 7, 8, 9, 10]`

6406531958680. ✖ `[0, 1, 1, 2, 3, 5, 8, 13, 21]`

6406531958681. ✔ `[0, 1, 1, 2, 3, 5, 8, 13, 21, 34]`

Question Number : 99 Question Id : 640653587006 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

Consider the following HTML Document file given below.

index.html

```
<!DOCTYPE html>
<html lang="en">
<head>
    <title>Document</title>
    <style>
        input:invalid {
            background: red;
        }
        input:valid {
            background: green;
        }
    </style>
</head>
<body>
    <form>
        <label for="uname">Enter a valid e-mail:</label>
        <input type="text" name="uname" minlength="8">
    </form>
</body>
</html>
```

Suppose the index.html is rendered on the browser. What will be the background color of the input box when the user enters the name “madcourse.mail.com”?

Options :

6406531958690. ✖ red

6406531958691. ✖ white

6406531958692. ✔ green

6406531958693. ✖ insufficient information

Question Number : 100 Question Id : 640653587008 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

Consider the following Python code snippet.

```
from flask import Flask
from flask_restful import Api, Resource

app = Flask(__name__)
api = Api(app)

class MyApi(Resource):
    def get(self):
        return {"greet":"Hello from GET Api!"}

    def put(self):
        return {"greet":"Hello from PUT Api!"}

api.add_resource(MyApi, '/api/get', '/api/put', '/api/post')

app.run()
```

If this application is running locally on `http://127.0.0.1:5000`, which of the following curl commands will throw an error?

1. `curl http://127.0.0.1:5000/api/get -X get`
2. `curl http://127.0.0.1:5000/api/put -X put`
3. `curl http://127.0.0.1:5000/api/post -X post`
4. `curl http://127.0.0.1:5000/api/get -X put`
5. `curl http://127.0.0.1:5000/api/put -X get`
6. `curl http://127.0.0.1:5000/api/post -X get`

Options :

6406531958698. ✔ Only 3

6406531958699.

✖ Only 3 and 4

6406531958700. ✖ Only 5 and 6

6406531958701. ✖ Only 3, 4, 5 and 6

Question Number : 101 Question Id : 640653587010 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

Consider the following code.

```
from flask import Flask
app = Flask(__name__)

@app.route('/')
def generate1():
    return "This is generate1"

@app.route('//')
def generate2():
    return "This is generate2"

@app.errorhandler(404)
def page_not_found(e):
    # setting 404 status explicitly
    return 'page not found'

app.run()
```

If the flask application is running on http://127.0.0.1:5000, what will browser render for URL http://127.0.0.1:5000//

Options :

6406531958706. ✖ Page not found

6406531958707. ✖ This is generate2

6406531958708. ✔ This is generate1

6406531958709. ✖ Code will throw error

Question Number : 102 Question Id : 640653587016 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

In the code snippet given below, what should come in place of *code 1* and *code 2* such that one parent can have multiple children and the converse does not hold true?

```
from sqlalchemy import ForeignKey
from sqlalchemy import Integer, Column
from sqlalchemy.orm import DeclarativeBase
from sqlalchemy.orm import relationship

class Base(DeclarativeBase):
    pass

class Parent(Base):
    __tablename__ = "parent_table"
    id = Column(Integer, primary_key=True)
    # write your code 1 here

class Child(Base):
    __tablename__ = "child_table"
    id = Column(Integer, primary_key=True)
    # write your code 2 here
```

Options :

6406531958727. ✖

```
code 1: parent_id=Column(Integer, ForeignKey("child_table.id"))
code 2: children = relationship("Parent")
```

6406531958728. ✔

```
code 1: children = relationship("Child")
code 2: parent_id=Column(Integer, ForeignKey("parent_table.id"))
```

6406531958729. ✖

```
code 1: parent_id=Column(Integer, ForeignKey("parent_table.id"))
code 2: children = relationship("Child")
```

6406531958730. ✖

```
code 1: children = relationship("Parent")
code 2: parent_id=Column(Integer, ForeignKey("child_table.id"))
```

Sub-Section Number : 4

Sub-Section Id : 64065384376

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 103 Question Id : 640653587004 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4.5

Question Label : Multiple Choice Question

Consider the following models `Brand` and `Cellphone` corresponding to tables brand and cellphone in SQLite database.

```
class Brand(db.Model):
    id = db.Column(db.Integer(), primary_key = True)
    name = db.Column(db.String(), unique = True)

class Cellphone(db.Model):
    id = db.Column(db.Integer(), primary_key = True)
    name = db.Column(db.String(), unique = True)
    brand = db.Column(db.Integer(), unique = True, db.ForeignKey("brand.id"))
```

Based on the model schemas, what relationship do the classes `Brand` and `Cellphone` share?

Options :

6406531958682. ✔ One-to-One

6406531958683. ✖ One-to-Many

6406531958684. ✖ Many-to-Many

6406531958685. ✖ The tables are not at all related

Question Number : 104 Question Id : 640653587012 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4.5

Question Label : Multiple Choice Question

Consider the schema for the Class Student.

```
CREATE TABLE "student" (
      "s_id"      INTEGER,
      "roll_number"     TEXT NOT NULL UNIQUE,
      "first_name"      TEXT NOT NULL,
      "last_name" TEXT NOT NULL,
      PRIMARY KEY("s_id" AUTOINCREMENT)
);
```

What will be the output of the flask_sqlalchemy command given below?

```
>>> s1 = Student(roll_number = M01, first_name = "Yash", last_name = "Raj")
>>> db.session.add(s1)
>>> s2 = Student(roll_number = M02, first_name = "Yash", last_name = "Maurya")
>>> db.session.add(s2)
>>> s3 = Student(roll_number = M03, first_name = "Ansh", last_name = "Raj")
>>> db.session.add(s3)
>>> db.session.commit()
>>> user1= Student.query.filter_by(first_name="Yash").first()
>>> user1.first_name= "Ansh"
>>> user1.last_name= "Maurya"
>>> db.session.commit()
>>> s1 = Student.query.all()
>>> for student in s1:
       print(student.first_name)
       print(student.last_name)
```

Options :

6406531958714. ✖

```
Yash
Raj
Yash
Maurya
Ansh
Raj
```

6406531958715. ✔

```
Ansh
Maurya
Yash
Maurya
Ansh
Raj
```

6406531958716. ✖

```
Ansh
Maurya
Ansh
Maurya
Ansh
Raj
```

6406531958717. ✖ None

Sub-Section Number : 5

Sub-Section Id : 64065384377

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 105 Question Id : 640653587007 Question Type : MSQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4.5 Max. Selectable Options : 0

Question Label : Multiple Select Question

Consider the following route in the flask for a signup page and select the correct option.

```
@app.route('/signup', methods=['GET', 'POST'])
def signup():
      if request.method == 'GET':
            return """<form action='/signup' method='POST'>
              <label for='username'>Username</label>
              <input type='text' name='username' required>
              <label for='password'>Password</label>
              <input type='text' name='password' required minlength="8">
              <input type='submit' value='Submit'>
              </form>
              """
      if request.method == 'POST':
            if request.form.get('username') is None:
                  return redirect(url_for(signup))
            if request.form.get('password') is None:
                  return redirect(url_for(signup))
            if len(request.form.get('password')) < 8:
                  return redirect(url_for(signup))
            return f"<h1>Welcome, {request.form.get('username')}!</h1>"
```

Options :

6406531958694. ✔ The signup page is dynamically generated.

6406531958695. ✔ The signup page uses server-side rendering.

6406531958696. ✖ The signup page uses frontend validation only.

6406531958697. ✔ The signup page uses backend validation.

Question Number : 106 Question Id : 640653587009 Question Type : MSQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4.5 Max. Selectable Options : 0

Question Label : Multiple Select Question

Consider the following flask app. Given that `test_request_context()` allows text to be printed on the terminal, which of the following statements is/are correct?

```
from flask import Flask, url_for

app = Flask(__name__)

@app.route('/home')
def index():
    return 'Mad-I welcomes you!'

@app.route('/user/<username>')
def profile(username):
    return f'{username}\'s profile'

with app.test_request_context():
    #== print statement ==#
```

Options :

6406531958702. ✖ If `#== print statement ==#` is replaced by `print(url_for('home'))`, the output on the terminal will be `Mad-I welcomes you!`.

6406531958703. ✔ If `#== print statement ==#` is replaced by `print(url_for('profile', username='Harry'))`, the output on the terminal will be `/user/Harry`

6406531958704. ✖ If `#== print statement ==#` is replaced by `print(url_for('profile', username='Harry', next='course'))`, the output on the terminal will be `/user/Harry/course`

6406531958705. ✔ If `#== print statement ==#` is replaced by `print(url_for('index', username='Harry'))`, the output on the terminal will be `/home?username=Harry`

Sub-Section Number : 6

Sub-Section Id : 64065384378

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 107 Question Id : 640653587013 Question Type : MSQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3 Max. Selectable Options : 0

Question Label : Multiple Select Question

Which of the following is/are valid JSON format.

Options :

6406531958718. ✔

```
{
  "Age": 27,
  "firstName": "John",
  "lastName": "Pollard",
  "married": false,
  "phone_numbers": ["212-555-1234", "212-666-5678"]
}
```

6406531958719. ✔

```
{
    "RollNumber": 11,
    "firstName": "Nick",
    "lastName": "Paul",
    "phone_numbers": [2125551234, "2124441234"]
}
```

6406531958720. ✖

```
{
  "firstName": "Will",
  "lastName": "Smith",
  "address": [
    "addressLine": "Lake Union Hill Way",
    "city": "Atlanta",
    "zipCode": 50005
  ]
}
```

6406531958721. ✔

```
{
  "firstName": "Hannah",
  "lastName": "Smith",
  "cities": ["Dallas", "San Antonio", "Irving"],
  "phone_numbers": ["212-555-1234", "212-666-5678"]
}
```

Question Number : 108 Question Id : 640653587015 Question Type : MSQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3 Max. Selectable Options : 0

Question Label : Multiple Select Question

Consider the following flask application.

```
from flask import Flask, render_template, request
app = Flask(__name__)

@app.route('/')
def out():
        val = request.args

        if val['num'] == '':
            return "<html><body> <h1>Invalid number</h1></body></html>"
        elif val['num'].isalpha()==True:
            return "<html><body><h1>Enter a valid number</h1></body></html>"
        else:
            out = int(val['num']) * int(val['num'])
            return f'<html><body> <h1>The output is {out}</h1></body></html>'

if(__name__ == "__main__"):
    app.run(debug=True)
```

If this flask app is running locally on http://localhost:5000, then which of the following statements is/are correct?

Options :

6406531958723. ✖ For URL: http://localhost:5000/?num=abc
Output is: **Invalid number**

6406531958724. ✔ For URL: http://localhost:5000/?num=abc
Output is: **Enter a valid number**

6406531958725. ✔ For URL: http://localhost:5000/?num=
Output is: **Invalid number**

6406531958726. ✖ For URL: http://localhost:5000/?num=12
Output is: **The output is 1212**

Sub-Section Number :	7
Sub-Section Id :	64065384379
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 109 Question Id : 640653587014 Question Type : SA Calculator : None
Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Short Answer Question

Consider the following flask application.

```
from flask import Flask, redirect, url_for
app = Flask(__name__)

@app.route('/admin')
def hello_admin():
   return 'Hello Admin'

@app.route('/guest/<guest>')
def hello_guest(guest):
   return 'Hello ' +guest+ ' as Guest'

@app.route('/user/<name>')
def hello_user(name):
   if name =='admin':
      return redirect(url_for('hello_admin'))
   else:
      return redirect(url_for('hello_guest', guest = name))

if __name__ == '__main__':
   app.run(debug = True)
```

If this flask app is running locally on http://localhost:5000, what is the output for the following URL?
For input: http://localhost:5000/user/admin?guest=appdev1

Response Type : Alphanumeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Answers Case Sensitive : No

Text Areas : PlainText

Possible Answers :

Hello Admin

MLF

Section Id : 64065339714

Section Number : 8