

Let `s` be a stack and `q` be a queue supporting the following operations:

Stack operation:

- `Push(d)` : Insert element `d` in stack
- `Pop()` : Remove the element from the stack and return the removed element

Queue Operation:

- `Enqueue(d)` : Insert element `d` in queue from rear
- `Dequeue()` : Remove the front element from the queue and return the removed element

Suppose the initial state of the queue `q` is `[26, 78, 45, 10, 19, 56]` where 26 is at the front and 56 is at the rear and the stack `s` is empty initially.

```
1 S.Push(Q.Dequeue())
2 S.Push(Q.Dequeue())
3 S.Push(Q.Dequeue())
4 Q.Enqueue(S.Pop())
5 S.Push(Q.Dequeue())
6 Q.Enqueue(S.Pop())
```

After performing the given sequence of operations, what will be the front and rear elements in queue `q`?

Options :

6406532774697. ✖ front: 10, rear: 78

6406532774698. ✖ front: 45, rear: 78

6406532774699. ✔ front: 19, rear: 10

6406532774700. ✖ front: 19, rear: 78

AppDev1

Section Id :	64065359210
Section Number :	3
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
Section Negative Marks :	0
Group All Questions :	No
Enable Mark as Answered Mark for Review and Clear Response :	No

Section Maximum Duration : 0
Section Minimum Duration : 0
Section Time In : Minutes
Maximum Instruction Time : 0
Sub-Section Number : 1
Sub-Section Id : 640653122719
Question Shuffling Allowed : No

Question Number : 33 Question Id : 640653825019 Question Type : MCQ
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 :

6406532774724.  YES

6406532774725.  NO

Sub-Section Number : 2
Sub-Section Id : 640653122720
Question Shuffling Allowed : Yes

Question Number : 34 Question Id : 640653825020 Question Type : MCQ
Correct Marks : 2

Question Label : Multiple Choice Question

Which of the following is not a correct perceivable accessibility principle?

Options :

6406532774726.  Provide text alternatives for non-text content.

6406532774727.  Provide captions and other alternatives for multimedia.

6406532774728.  Make it easier for users to see and hear content.

6406532774729.  Give users enough time to read and use content.

Question Number : 35 Question Id : 640653825021 Question Type : MCQ
Correct Marks : 2

Question Label : Multiple Choice Question

Which of the below HTTP status codes represents the client error?

Options :

6406532774730.  500-599

6406532774731. ✔ 400-499

6406532774732. ✖ 300-399

6406532774733. ✖ 200-299

6406532774734. ✖ 100-199

Question Number : 36 Question Id : 640653825028 Question Type : MCQ

Correct Marks : 2

Question Label : Multiple Choice Question

What will be the output of the following Python code?

```
from jinja2 import Template
data = {"id": 101, "prod_name": "Groceries", "sales_amt": 5600,
        "sales_bonus": 5}

def foo(amount, p):
    return amount * p / 100

a = foo(data["sales_amt"], data["sales_bonus"])
t = Template(
    "Congratulations, you got bonus {{ bonus }} by selling product
    {{data['prod_name']}}"
)
output = t.render(data=data, bonus=a)
print(output)
```

Options :

6406532774759. ✖

Congratulations, you got bonus 70.0 by selling product Groceries

6406532774760. ✖

Congratulations, you got bonus 140.0 by selling product Groceries

6406532774761. ✔

Congratulations, you got bonus 280.0 by selling product Groceries

6406532774762. ✖

Congratulations, you got bonus 560.0 by selling product Groceries

Question Number : 37 Question Id : 640653825034 Question Type : MCQ

Correct Marks : 2

Question Label : Multiple Choice Question

Consider the below table.

Column 1	Column 2
i) Primary Key	a) Method of the request
ii) Foreign key	b) Provides additional functionality at top of original function
iii) Nullable	c) Refers to another parent table column
iv) POST	d) Unique identification of row
v) @<decorator>	e) Undefined value

Use the above table. Which of the below match is correct?

Options :

6406532774783. ✖ i - d, ii - b, iii - a, iv - e, v - c

6406532774784. ✔ i - d, ii - c, iii - e, iv - a, v - b

6406532774785. ✖ i - c, ii - d, iv - e, iii - a, v - b

6406532774786. ✖ i - c, ii - d, iv - e, iii - b, v - a

Sub-Section Number :

3

Sub-Section Id :

640653122721

Question Shuffling Allowed :

Yes

Question Number : 38 Question Id : 640653825022 Question Type : MCQ

Correct Marks : 3

Question Label : Multiple Choice Question

A certain movie with advertisements is being streamed by the client on the internet with a bandwidth of 5 Mbps. If the total data consumed only in the advertisements is 340 MB and the advertisements comprises 17% of the total duration of the streamed movie, what can be the size of the entire movie (in Megabytes) including the advertisements?

Options :

6406532774735. ✖ 20

6406532774736. ✖ 640

6406532774737. ✔ 2000

6406532774738. ✖ 1660

Question Number : 39 Question Id : 640653825024 Question Type : MCQ

Correct Marks : 3

Question Label : Multiple Choice Question

Consider a document of 1000 characters written using only the characters of the character set $L1 = \{ 'a', 'b', 'c', 'd', 'e', 'f', 'g', 'h', 'i', 'j' \}$. If the character set $L1$ is to be upgraded by adding all the characters of character set $L2 = \{ '0', '1', '2', '3', '4', '5', '6' \}$ in it, By how many bits will the size of the original document increase?

Options :

6406532774743. ✖ 0 bits

6406532774744. ✔ 1000 bits

6406532774745. ✖ 4000 bits

6406532774746. ✖ 5000 bits

Question Number : 40 Question Id : 640653825025 Question Type : MCQ

Correct Marks : 3

Question Label : Multiple Choice Question

The following Python code snippet generates the output on the terminal.

```
from string import Template
s = Template('$name studies at $university')
b = {'name': 'Bob'}

out1 = Template('$name studies $subject').safe_substitute(b)
print(out1)

out2 = s.substitute(name='Alice', university='Oxford')
print(out2)

out3 = Template('$name studies $subject').substitute(b)
print(out3)
```

Which of the following is the correct output?

Options :

6406532774747. ✖

```
Bob studies at $subject
Alice studies at Oxford
KeyError: 'subject'
```

6406532774748. ✔

```
Bob studies $subject
Alice studies at Oxford
KeyError: 'subject'
```

6406532774749. ✖

```
Bob studies $subject
Alice studies at Oxford
Bob studies $subject
```

6406532774750. ✖

```
Bob studies
Alice studies at Oxford
KeyError: 'subject'
```


Question Number : 41 Question Id : 640653825026 Question Type : MCQ

Correct Marks : 3

Question Label : Multiple Choice Question

Consider the following HTML document.

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Span</title>
  <style>
    span{
      color: blue;
      Background-color: lime;
    }
  </style>
</head>
<body>
  <span id="my_span">MAD-I is a Diploma level course.</span>
  <span>SE is a Degree level course.</span>
</body>
</html>
```

What will be the rendered output if an additional style is added via the ID selector given below?

```
#my_span{
  width: 1200px;
  Background-color: lightpink;
}
```

Options :

6406532774751. ✖ MAD-I is a Diploma level course. SE is a Degree level course.

6406532774752. ✔ MAD-I is a Diploma level course. SE is a Degree level course.

6406532774753. ✖ MAD-I is a Diploma level course. SE is a Degree level course.

6406532774754. ✖ MAD-I is a Diploma level course.
SE is a Degree level course

Question Number : 42 Question Id : 640653825031 Question Type : MCQ

Correct Marks : 3

Question Label : Multiple Choice Question

Consider the following Python code snippet.

Filename: app.py

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

@app.route('/home', methods = sys.argv)
def my_func():
    if request.method == 'GET':
        return f"Hello from {sys.argv[1]} method"

    elif request.method == 'POST':
        return f"Hello from {sys.argv[2]} method"

    else:
        return "Please enter a valid HTTP method"

app.run(debug = True)
```

If the above flask app is run using the command `python app.py POST GET` in one terminal, what will be the output on another terminal for command;
`curl -X POST http://127.0.0.1:5000/home ?`

Options :

- 6406532774771. ✖

Hello from POST method
- 6406532774772. ✔

Hello from GET method
- 6406532774773. ✖

Please enter a valid HTTP method
- 6406532774774. ✖

Method not Allowed

Question Number : 43 Question Id : 640653825032 Question Type : MCQ

Correct Marks : 3

Question Label : Multiple Choice Question

Consider the following Python code snippet.

Filename: module.py

```
from pyhtml import *
import sys
var = sys.argv[1:]

def list_func(stack):
    for tech in stack:
        yield span(tech)

doc = html(
    head(title('My Document')),
    body(
        h3('Frontend technologies'),
        list_func(var[::-1])
    )
)
print(doc.render())
```

How will the browser render the output of the above code if it is run on the terminal using the command `python module.py HTML CSS JS VUE`?

Options :

Frontend Technologies

6406532774775. ✖ HTML CSS JS VUE

Frontend Technologies

6406532774776. ✔ VUE JS CSS HTML

Frontend Technologies

HTML

CSS

JS

VUE

6406532774777. ✖

Frontend Technologies

VUE

JS

CSS

HTML

6406532774778. ✖

Sub-Section Number :	4
Sub-Section Id :	640653122722
Question Shuffling Allowed :	Yes

Question Number : 44 Question Id : 640653825023 Question Type : MCQ

Correct Marks : 4.5

Question Label : Multiple Choice Question

Consider the following HTML document.

```

<!DOCTYPE html>
<html>
<head>
  <style>
    span {
      background-color: lightgray;
      color: red;
      font-weight: bold;
    }
    div{
      border: 3px solid purple;
      text-align: center;
      width:20%;
    }
    #id1 {
      color:blue ;
    }
    #id2 {
      display: block;
    }
    .class1 {
      background-color: lightgreen;
      color: blue;
      display: inline-block;
    }
    .class2 {
      background-color: skyblue;
      color: red;
    }
  </style>
</head>
<body>
  <div>
    <span class="class1" id="id1">Content 1</span>
    <span class="class2 class1" >Content 2</span>
    <span id="id2">Content 3</span>
  </div>
</body>
</html>

```

How will the browser render above HTML file?

Options :



6406532774739. ✖

6406532774740. ✖



6406532774741. ✓



6406532774742. ✖



Question Number : 45 Question Id : 640653825027 Question Type : MCQ

Correct Marks : 4.5

Question Label : Multiple Choice Question

Consider a client A that makes a request to server B that fetches the information from Datacenter C which in turn fetches other required information from the Datacenter D. The distance between the client A, server B and datacenters C and D within the network and the speed of information in the medium connecting these nodes is mentioned in the table below.

Nodes	A to B	B to C	C to D
Distance (km)	12000	8500	7500
Speed of Information(m/s)	3×10^8	2×10^8	1.5×10^8

Calculate the round trip latency (in milliseconds) of the network?

Options :

6406532774755. ✖ 187

6406532774756. ✖ 132.5

6406532774757. ✓ 265

6406532774758. ✖ 150

Question Number : 46 Question Id : 640653825035 Question Type : MCQ

Correct Marks : 4.5

Question Label : Multiple Choice Question

Consider the following flask app and the bodies of two index.html files shown in the figure below.

app.py

```
from flask import Flask, render_template
import sys

app = ===== app object initialization here =====

@app.route('/home')
def home():
    return render_template('index.html')

app.run()
```

app_templates/index.html

```
<h3>Home page</h3>
<p>MAD I focuses on backend development</p>
<h5>IITM ONLINE DEGREE</h5>
```

root_templates/index.html

```
<h3>Home page</h3>
<p>Vue JS is a frontend technology</p>
<h5>IITM BS DEGREE</h5>
```

If the app is run locally using the command

`python app.py root_templates app_templates`,

and the output on browser for URL `http://127.0.0.1/home` is:

Home page

Vue JS is a frontend technology

IITM BS DEGREE

How should the app be initialized to get the desired output on the browser?

Options :

```
app = Flask(__name__)
```

6406532774787. ✖

```
app = Flask(__name__, templates = sys.argv[1])
```

6406532774788. ✖

```
app = Flask(__name__, templates = sys.argv[2])
```

6406532774789. ✖

```
app = Flask(__name__, template_folder = sys.argv[1])
```

6406532774790. ✔

6406532774791. ✖

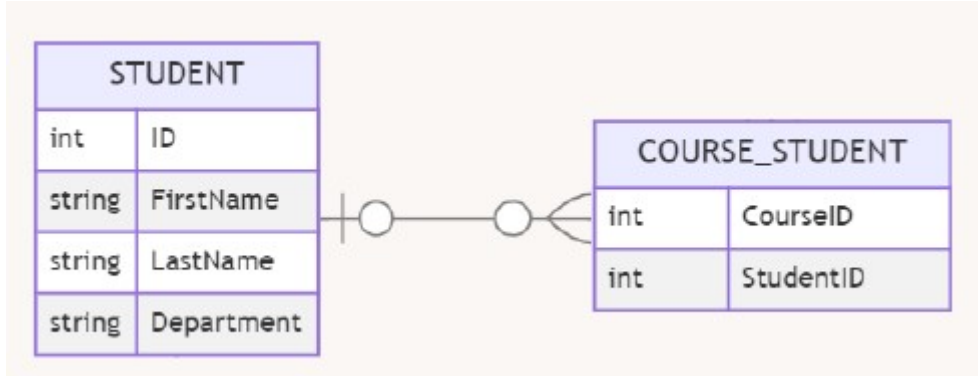
```
app = Flask(__name__, template_folder = sys.argv[2])
```

Sub-Section Number : 5
Sub-Section Id : 640653122723
Question Shuffling Allowed : Yes

Question Number : 47 Question Id : 640653825029 Question Type : MSQ
Correct Marks : 3 Max. Selectable Options : 0

Question Label : Multiple Select Question

What can be inferred from the Entity-Relationship Diagram below:



Options :

- 6406532774763. ✔ A student can exist without enrolling to any course
- 6406532774764. ✔ A student can have more than one courses
- 6406532774765. ✖ A student needs to have at least one course
- 6406532774766. ✖ A course must belong to one and only one student

Question Number : 48 Question Id : 640653825033 Question Type : MSQ
Correct Marks : 3 Max. Selectable Options : 0

Question Label : Multiple Select Question

Consider the following Flask code.

File name: sum_args.py

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

def do_something():
    if len(sys.argv) >= 2:
        l = []
        for i in range(1, len(sys.argv)):
            l.append(int(sys.argv[i]))
        return l
    else:
        return None

@app.route("/")
def do_sum():
    result = do_something()
    if result:
        s = 0
        for e in result:
            s += int(e)
        return f"<h2>Sum is : {s}"
    else:
        return f"<h2>Sum is : {result}"

app.run(debug=True)
```

Select the command(s) to execute the above code without any error.

Options :

6406532774779. ✓ `python sum_args.py 2 8 9`

6406532774780. ✓ `python sum_args.py 2`

6406532774781. ✓ `python sum_args.py`

6406532774782. ✗ `python sum_args.py IITM`

Sub-Section Number :

6

Sub-Section Id :

640653122724

Question Shuffling Allowed :

Yes

Question Number : 49 Question Id : 640653825030 Question Type : MSQ

Correct Marks : 4.5 Max. Selectable Options : 0

Question Label : Multiple Select Question

Consider the following Python code and HTML document.

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

@app.route("/font/size/<int:size>")
def font_size(size):
    internal_css = {}
    if size < 12:
        internal_css = {"font-weight": "bold", "font-size": "12px"}
    else:
        internal_css = {"font-weight": "normal", "font-size": str(size) + "px"}

    return render_template("index.html", internal_css=internal_css)

app.run(debug=True)
```

HTML document: templates/index.html

```
<!DOCTYPE html>
<html>
  <div style="font-size:{{internal_css['font-size']}};
font-weight:{{internal_css['font-weight']}};">
    IITM BS Degree Program
  </div>
</html>
```

Assume that the flask server is running on "<http://localhost:5000/>". Which of the following is/are true?

Options :

6406532774767. ✓ <http://127.0.0.1:5000/font/size/20> will render "IITM BS Degree Program" with font-size=20 and font-weight=normal

6406532774768. ✗ <http://127.0.0.1:5000/font/size/24> will render "IITM BS Degree Program" with font-size=24 and font-weight=bold

6406532774769. ✓ <http://127.0.0.1:5000/font/size/8> will render "IITM BS Degree Program" with font-size=12 and font-weight=bold

6406532774770. ✓ <http://127.0.0.1:5000/font/size/16> will render "IITM BS Degree Program" with font-size=16 and font-weight=normal

MLF

Section Id :	64065359211
Section Number :	4
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	11
Number of Questions to be attempted :	11
Section Marks :	40
Display Number Panel :	Yes
Section Negative Marks :	0
Group All Questions :	No
Enable Mark as Answered Mark for Review and Clear Response :	No
Section Maximum Duration :	0
Section Minimum Duration :	0
Section Time In :	Minutes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	640653122725
Question Shuffling Allowed :	No

Question Number : 50 Question Id : 640653825036 Question Type : MCQ

Correct Marks : 0

Question Label : Multiple Choice Question

THIS IS QUESTION PAPER FOR THE SUBJECT "DIPLOMA LEVEL : MACHINE LEARNING FOUNDATIONS (COMPUTER BASED EXAM)"

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Options :

6406532774792.  YES

6406532774793.  NO

Sub-Section Number :	2
Sub-Section Id :	640653122726
Question Shuffling Allowed :	No

Question Id : 640653825037 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix