Exam	**300-435**
Title	**Automating and Programming Cisco Enterprise Solutions (ENAUTO 300-435) Exam**
Version	**12.0**
Product Type	**125 Q&A with explanations**

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QUESTION 1
What are two characteristics of RPC API calls? (Choose two.)

A. They can be used only on network devices.
B. They use only UDP for communications.
C. Parameters can be passed to the calls.
D. They must use SSL/TLS.
E. They call a single function or service.

Explanation:

Answer: CE
Reference: https://pubs.opengroup.org/onlinepubs29399/chap6.htm

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QUESTION 2
Which two actions do Python virtual environments allow users to perform? (Choose two.)

A. Simplify the CI/CD pipeline when checking a project into a version control system, such as Git.
B. Efficiently port code between different languages, such as JavaScript and Python.
C. Run and simulate other operating systems within a development environment.
D. Quickly create any Python environment for testing and debugging purposes.
E. Quickly create an isolated Python environment with module dependencies.

Explanation:

Answer: DE
Reference: https://realpython.com/python-virtual-environments-a-primer/

QUESTION 3
What are two benefits of leveraging Ansible for automation of Cisco IOS XE Software? (Choose two.)

A. Ansible playbooks are packaged and installed on IOS XE devices for automatic execution when an IOS device reboots.
B. All IOS XE operating systems include Ansible playbooks for basic system administration tasks.
C. It is a device-independent method for automation and can be used with any type of device or operating system.
D. Ansible playbooks can be written from the IOS XE EXEC command line to configure the device itself.
E. It does not require any modules of software except SSH to be loaded on the network device.

Explanation:

Answer: CE
Reference: https://developer.cisco.com/learning/modules/intro-ansible-iosxe/ansibleoverview/step

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QUESTION 4
Refer to the exhibit.

```
return_val=
{
  "alertId": "6434517967656725l6",
  "alertType": "appliances went down",
  "deviceMac": "e0:55:3d:6c:c1:7a",
  "deviceName: "MX65 c1:7a",
  "deviceSerial": "Q2QN-58EA-XXXX",
  "deviceUrl": "https://n143.meraki.com/Branch-1/n/.../manage/nodes/new_wired_status",
  "networkId": "L_1234567890",
  "networkName": "Branch 1",
  "networkUrl": "https://n143.meraki.com/Branch-1/n/.../manage/nodes/wired_status",
  "occuredAt": "2018-11-10T18:45:20.000000Z",
  "organizationId": "1234567",
  "organizationName": "Meraki Demo",
  "organizationUrl": "https://n143.meraki.com/o/.../manage/organization/overview",
  "sentAt: "2018-11-10T18:50:30.479982Z",
  "SharedSecret": "asdf1234",
  "version": "0.1"
}
```

The task is to create a Python script to display an alert message when a Meraki MX Security Appliance goes down. The exhibit shows sample data that is received. Which Python snippet displays the device name and the time at which the switch went down?

A.
```
with return_val:
    print("The Switch: "+deviceName+ ",
    went down at: "+occurredAt)
```

B.
```
print("The Switch: "+return_val.deviceName+ ", \
went down at: "+return_val.occurredAt)
```

C.
```
print("The Switch: "+return_val['deviceName']+ ", \
went down at: "+return_val['occurredAt']")
```

D.
```
with items as return_val:
    print("The Switch: "+items.deviceName+ ",
    went down at: "+items.occurredAt)
```

A. Option A
B. Option B
C. Option C
D. Option D

Answer: C

Explanation:

QUESTION 5
Refer to the exhibit.

```
{
  "alertData": {
    "countNode": 1,
      "bssids": [
       "aa:bb:cc:dd:ee:ff",
       "11:22:33:44:55:66"
      ],
      "minFirstSeen": 1548512334,
      "maxLastSeen": 1548512802,
      "countIsContained": 0,
      "reason": "Seen on LAN",
      "wiredMac": "aa:bb:cc:dd:ee:f0"
  },
  "alertId": "6293780479392828O2",
  "alertType": "Air Marshal -Roque AP detected",
  "occuredAt": "2019-01-26T14:18:54.000000Z",
  "organizationId": "123456",
  "organizationName": "Organization",
  "organizationUrl": "https://n1.meraki.com/o/.../manage/organization/overview",
  "networkId": "L_123456789012345678",
  "networkName": "Network",
  "networkUrl": "https://n1.meraki.com/.../manage/nodes/list",
  "version": "0.1"
  "SharedSecret": "supersecret",
  "sentAt: "2019-01-26T14:35:20.442869Z",
}
```


The goal is to write a Python script to automatically send a message to an external messaging application when a rogue AP is detected on the network. The message should include the broadcast SSID that is in the alert. A function called â€œsend_to_applicationâ€ is created, and this is the declaration:

send_to_application(message)

The exhibit also shows the data that is received by the application and stored in the variable return_val. Which Python code completes the task?

A.
```
bssids =return_val["bssids"]
for number in range(return_val["alertData"]["countNode"]):
  send_to_application ("ALERT: detected a bssid on the
  network: "+ return_val["alertData"][bssids][number])
```

B.
```
bssids =return_val["bssids"]
for value in bssids:
  send_to_application ("ALERT: detected a bssid on the
  network: "+value)
```

C.
```
count = retutn_val["alertData"]["countNode"]
bssids =return_val["alertData"][count]["bssids"]
for value in bssids:
  send_to_application ("ALERT: detected a bssid on the
  network: "+value)
```

D.
```
bssids =return_val["alertData"]["bssids"]
for value in bssids:
  send_to_application ("ALERT: detected a bssid on the
  network: "+value)
```

A. Option A
B. Option B
C. Option C
D. Option D

Explanation:

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Answer: D
For number in range value is required for the application to send the alert. Bssids are also included.

QUESTION 6
Which two features are foundations of a software-defined network instead of a traditional network? (Choose two.)

A. control plane and data plane are tightly coupled
B. build upon a robust software stack
C. requires device by device-level configurations
D. automated through expressed intent to a software controller
E. requires significant physical hardware resources

Explanation:

Answer: BD
:
In traditional networks, control plane and data plane are coupled tightly. It also requires device by device configurations and of course, it uses physical hardware resources to function. Whereas, SDN is based on a software stack. In Cisco SDNs are automated through expressed intent to a software controller.

QUESTION 7
A new project called â€œdevice_statusâ€ must be stored in a central Git repository called â€œdevice_statusâ€ with the first file named â€œdevice_status.pyâ€ . The Git repository is created using the account python_programmer. Which set of commands inserts the project into Git?

A.
```
git init
git add device status.py
git commit -m "Initial Revision"
git remote add origin \
     https://git.cisco.com/python_programmer/device_status.git
git push -u origin master
```

B.
```
git init
git remote add origin \
     https://git.cisco.com/python_programmer/device_status.git
git add device_status.py
git pull
```

C.
```
git init
git remote add origin \
     https://git.cisco.com/python_programmer/device_status.git
git add device_status.py
git commit -m "Initial Revision"
git pull -u origin master
```

D.
```
git init
git add device_status.py
git remote add python_programmer/device_status
git push
```

A. Option A
B. Option B
C. Option C
D. Option D

Explanation:

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Answer: A
Reference: https://help.github.com/en/github/importing-your-projects-to-github/adding-anexisting-project-to- github-using-the-command-line

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QUESTION 8
What are two characteristics of synchronous calls to APIs? (Choose two.)

A. They can be used only with certain programming languages.
B. They make your application less portable, so asynchronous calls are preferred.
C. They can add perceived latency to your application if data is not received.
D. They block until a response is returned from the servers.
E. They do not block while waiting for the API to be processed.

Explanation:

Answer: CD
Reference: https://docs.cloudmgmt.cisco.com/displayAPI/Synchronous+and+Asynchronous+APIs

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QUESTION 9
Refer to the exhibit.

```
neighbors = ['s1', 's2', 's3']
switch = {'hostname':'nexus','os':'7.0.3','neighbors':neighbors}
print(switch['neighbors'][1])
```

What is the result when running the Python scripts?

A. s1
B. s2
C. s1, s2, s3
D. s3

Answer: B

Explanation:

```
neighbors = ['s1', 's2', 's3']
switch = {'hostname':'nexus','os':'7.0.3','neighbors':neighbors}
print(switch['neighbors' ][1])
```

:

QUESTION 10

Refer to the exhibit.

```
{
   "Cisco-IOS-XR-ifmgr-cfg:interface-configurations": {
     "interface-configuration": [
       {
         "active": "act",
         "interface-name": "Loopback0",
         "description": "PRIMARY ROUTER LOOPBACK"
       }
     ]
   }
}
```

Which type of YANG container is described by the JSON instance provided?

A. interface-configurations
B. active
C. interface-name
D. description

Explanation:

Answer: A

Reference: https://www.cisco.com/c/en/us/td/docs/routers/asr9000/software/asr9k-r7-

0/programmability/ configuration/guide/b-programmability-cg-asr9000-70x/b-programmability-cgasr9000-70x_chapter_011.html

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QUESTION 11
Refer to the exhibit.

```
module: Cisco-IOS-XE-vlan-oper
  +--ro vlans
     +--ro vlan* [id]
        +--ro id                    uint16
        +--ro name?                 string
        +--ro status?               vlan-iso-xe-oper:vlan-status-type
        +--ro ports* []
        |  +--ro interface?         string
        |  +--ro subinterface?      uint32
        +--ro vlan-interfaces*  [interface]
           +--ro interface          string
           +--ro subinterface       uint32
```

Which NETCONF protocol operation is used to interact with the YANG model?

A. <edit-config>
B. <get>
C. <get-config>
D. <copy-config>

Explanation:

Answer: B
Reference: https://www.cisco.com/c/en/us/td/docs/routers/crs/software/crs-r6-4/programmability/configuration/ guide/b-programmability-cg-crs-64x.pdf

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QUESTION 12
Refer to the exhibit.

```
<rcp xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="101">
  <get>
    <filter>
      <native xmlns="http://cisco.com/ns/yang/Cisco-IOS-XE-native">
        <ntp>
          <server xmlns="http://cisco.com/ns/yang/Cisco-IOS-XE-ntp">
            <server-list>
              <ip-address>10.11.10.65</ip-address>
            </server-list>
          <server
        </ntp>
      </native>
      <ntp-oper-data xmlns="http://cisco.com/ns/yang/Cisco-IOS-XE-ntp-oper">
        <ntp-status-info>
          <ntp-associations>
            <peer-stratum/>
          </ntp-associations>
        </ntp-status-info>
      </ntp-oper-data>
    </filter>
  </get>
</rcp>
```

How many YANG models does the NETCONF <get> operation interact with?

A. one
B. two
C. three

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D. four

Explanation:

Answer: B
:
The get operation tag is at the beginning of the document. It interacted only with NTP and its related services. There get operation interacted only with one model.

QUESTION 13
Which statement describe the difference between OpenConfig and native YANG data models?

A. Native models are designed to be independent of the underlying platform and are developed by vendors and standards bodies, such as the IETF.
B. Native models are developed by individual developers and designed to apply configurations on platforms.
C. OpenConfig models are developed by vendors and designed to integrate to features or configurations that are relevant only to that platform.
D. Native models are developed by vendors and designed to integrate to features or configurations that are relevant only to that platform.

Explanation:

Answer: D
Reference: https://www.cisco.com/c/en/us/products/collateral/switches/nexus-9000-seriesswitches/white- paper-c11-741518.html

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QUESTION 14
Refer to the exhibit.

```
import requests
import sys

requests.package.urllib3.disable_warnings()

HOST = '10.1.2.3'
PORT = 9443
USER = 'user'
PASS = 'password'

def main():
    url = "https://{h}:{p}/restconf/data/Cisco-IOS-XE-native:native/
hostname".format(h=HOST, p=PORT)

    headers = {'Content-Type': 'application/ [          ] ',
               'Accept': 'application/ [          ] '}
    response = requests.get(url, auth=(USER,PASS),
                            headers=headers, verify=False)
    print(response.text)

if __name__ == '__main__':
    sys.exit(main())
```

An engineer creates a Python script using RESTCONF to display hostname information. The code must be completed so that it can be tested. Which string completes the highlighted areas in the exhibit?

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A. yang-data+json
B. yang +json
C. yang.data+json
D. json

Explanation:

Answer: A
Reference: https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/prog/configuration/b_166_programmability_cg/restconf_prog_int.html

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QUESTION 15
Which statement is true for Cisco IOS XE Software?

A. RESTCONF supports JSON and XML and NETCONF supports XML.
B. RESTCONF supports XML and NETCONF supports JSON and XML.
C. RESTCONF and NETCONF supports JSON and XML.
D. RESTCONF supports XML and NETCONF supports JSON.

Explanation:

Answer: A
Reference: https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/prog/configuration/b_169_programmability_cg/restconf_programmable_interface.html

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QUESTION 16
Which curl command is used to update the SNMP community of network ID â€œ1234567â€ to read-only?

A.
```
curl -L -H 'X-Cisco-Meraki-API-Key: <key>' \
  -H 'Content-Type: application/json' \
  -X PUT --data-binary '{ \
    "access":"users", \
          "communityString":"readonly"}' \
          'https://api.meraki.com/api/v0/networks/1234567/snmpSettings'
```

B.
```
curl -L -H 'X-Cisco-Meraki-API-Key: <key>' \
  -H 'Content-Type: application/json' \
  -X PUT --data-binary '{ \
    "access":"community", \
          "communityString":"readonly"}' \
          'https://api.meraki.com/api/v0/networks/1234567/snmpSettings'
```

C.
```
curl -L -H 'X-Cisco-Meraki-API-Key: <key>' \
  -H 'Content-Type: application/json' \
  -X PUT --data-binary '{ \
    "access":"users", \
          "usersname":"snmp", \
          "passphase":"readonly"}' \
          'https://api.meraki.com/api/v0/networks/1234567/snmpSettings'
```

D.
```
curl -L -H 'X-Cisco-Meraki-API-Key: <key>' \
  -H 'Content-Type: application/json' \
  -X POST --data-binary '{ \
    "access":"community", \
          "communityString":"readonly"} \
          'https://api.meraki.com/api/v0/networks/1234567/snmpSettings'
```

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A. Option A
B. Option B
C. Option C
D. Option D

Explanation:

Answer: B
:
PUT is used to update the snmp network ID. The access has to be community and not users.
Therefore, option B is correct.

QUESTION 17
Refer to the exhibit.

```
module: ietf-ip
 augment /if:interfaces/if:interface:
  +--rw ipv4!
  |  +--rw enabled?      boolean
  |  +--rw forwarding?   boolean
  |  +--rw mtu?          uint16
  |  +--rw address* [ip]
  |  |  +--rw ip                    inet:ipv4-address-no-zone
  |  |  +--rw (subnet)
  |  |  |  +--:(prefix-length)
  |  |  |  |  +--rw prefix-length?          uint8
  |  |  |  +--:(netmask)
  |  |  |     +--rw netmask?           yang:dotted-guad (ipv4-non-contiguous-netmasks)?
  |  |  +--ro origin?                  ip-address-origin
  |  +--rw neighbor* [ip]
  |     +--rw ip                       inet:ipv4-address-no-zone
  |     +--rw link-layer-address       yang:phys-address
```

Which NETCONF statement type is represented by +--rw address* [ip]?

A. list
B. leaf-list
C. container
D. submodule

Explanation:

Answer: A
:
Symbols after data node names: "?" means an optional node, "!" means a presence container, and "*" denotes a list and leaf-list.

QUESTION 18
The automation engineer must replace device configuration using RESTCONF. How is this configured using
the Python library Requests?

A. delete()
B. post()
C. put()
D. patch()

Explanation:

Answer: C
Reference: https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/prog/configuration/b_166_programmability_cg/restconf_prog_int.html

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QUESTION 19
Which two Netmiko methods are used to configure a device? (Choose two.)

A. send_config()
B. send_control_from_file()
C. send_config_set()
D. send_command()
E. send_config_from_file()

Explanation:

Answer: CE
Reference: https://pynet.twb-tech.com/blog/automation/netmiko.html

QUESTION 20
Refer to the exhibit.

```
- name: Create VRFs as defined by local_vrfs
  ios_vrf:
    vrfs: "{{ local_vrfs }}"
    state: [          ]
  register: addvrf
```

An engineer creates an Ansible playbook to configure VRF information using a local_vrfs variable. The code must be completed so that it can be tested. Which string completes the code?

A. present
B. up
C. on
D. active

Explanation:

Answer: A
Reference: https://docs.ansible.com/ansible/latest/modules/ios_vrf_module.html

QUESTION 21
DRAG DROP
Drag and drop the commands to the Ansible playbook that applies configuration to an interface on a Cisco IOS XE device. Not all options are used.

Answer Area

ioscmd	interface
parents	iosxe
iosconfig	ios_config

```
- name: configure interface settings
  [          ]:
    lines:
      -ip address 172.31.1.1 255.255.255.0
      -no shutdown
    [          ]: interface GigabitEthernet1/0
```

Explanation: