QUESTION 98
What is a benefit of developing an application in a Python virtual environment?

A. The application operates in multiple target systems simultaneously.
B. The application supports concurrency or multithreading.
C. The application operates across systems that have different operating systems.
D. The development environment is isolated from Python projects that already exist.

Answer: B
Explanation:
https://hackernoon.com/concurrent-programming-in-python-is-not-what-you-think-it-isb6439c3f3e6a

QUESTION 99
Refer to the exhibit. Which device type is functioning in a degraded state?


```
{
  "version": "1.0",
  "response": [
    {
      "time": "2019-07-15T19:10:00.000+0000",
      "healthScore": 73,
      "totalCount": 11,
      "goodCount": 8,
      "unmonCount": 3,
      "fairCount": 0,
      "badCount": 0,
      "entity": null,
      "timeinMillis": 1563217800000
    }
  ],
  "measuredBy": "global",
  "latestMeasuredByEntity": null,
  "latestHealthScore": 73,
  "monitoredDevices": 8,
  "monitoredHealthyDevices": 8,
  "monitoredUnHealthyDevices": 0,
  "unMonitoredDevices": 3,
  "healthDistribution": [
    {
      "category": "Access",
      "totalCount": 9,
      "healthScore": 100,
      "goodPercentage": 100,
      "badPercentage": 0,
      "fairPercentage": 0,
      "unmonPercentage": 0,
      "goodCount": 3,
      "badCount": 0,
      "fairCount": 0,
      "unmonCount": 0
    },
    {
      "category": "Distribution",
      "totalCount": 2,
      "healthScore": 100,
      "goodPercentage": 100,
      "badPercentage": 0,
      "fairPercentage": 0,
      "unmonPercentage": 0,
      "goodCount": 2,
      "badCount": 0,
      "fairCount": 0,
      "unmonCount": 0
    },
    {
      "category": "WLC",
      "totalCount": 2,
      "healthScore": 50,
      "goodPercentage": 0,
      "badPercentage": 0,
      "fairPercentage": 0,
      "unmonPercentage": 100,
      "goodCount": 1,
      "badCount": 0,
      "fairCount": 0,
      "unmonCount": 1
    }
  ]
}
```


A. access point
B. distribution switch
C. access switch
D. wireless LAN controller

Answer: C

QUESTION 100
When working with MV Sense APIs, which type of protocol is MQTT based upon?

A. publish-subscribe messaging protocol
B. simple mail transport protocol
C. heavyweight messaging protocol
D. computer vision protocol

Answer: A
Explanation:
https://internetofthingsagenda.techtarget.com/definition/MQTT-MQ-Telemetry-Transport

QUESTION 101
Refer to the exhibit. What is a characteristic of the tree?

```
module: Cisco-IOS-XE-interfaces-oper
  +--ro interfaces
     +--ro interface* [name]
        +--ro name                          string
        +--ro interface-type?               interfaces-ios-xe-oper:ietf-intf-type
        +--ro admin-status?                 interfaces-ios-xe-oper:intf-state
        +--ro oper-status?                  interfaces-ios-xe-oper:oper-state
        +--ro last-change?                  yang:date-and-time
        +--ro if-index?                     int32
        +--ro phys-address?                 yang:mac-address
        +--ro higher-layer-if*              string
        +--ro lower-layer-if*               string
        +--ro speed?                        uint64
        +--ro statistics
        |  +--ro discontinuity-time?    yang:date-and-time
        |  +--ro in-octets?             uint64
        |  +--ro in-unicast-pkts?       uint64
```

A. three optional metrics
B. two leaf-lists
C. ten leaf-lists
D. three containers

Answer: A

QUESTION 102
Refer to the exhibit. A RESTCONF GET request is sent to a Cisco IOS XE device. The base URL of the request and the response in XML format are shown in the exhibit. What are the two YANG data nodes and modules referenced in the response? (Choose two.)

```
https://ios-xe:9443/restconf/data/ietf-routing:routing/routing-
instance=default/

<routing-instance xmlns:"urn:ietf:params:xml:ns:yang:ietf-
routing" xmlns:rt="urn:ietf:params:xml:ns:yang:ietf-routing">
  <name>default</name>
  <description>default-vrf [read-only]</description>
  <routing-protocols>
      <routing-protocol>
        <type>static</type>
        <name>1</name>
        <static-routes>
            <ipv4 xmlns:"urn:ietf:params:xml:ns:yang:ietf-
ipv4-unicast-routing">
              <route>
                  <destination-
prefix>0.0.0.0/0</destination-prefix>
                  <next-hop>
                    <outgoing-
interface>GigabitEthernet1</outgoing-interface>
                  </next-hop>
              </route>
            </ipv4>
        </static-routes>
      </routing-protocol>
  </routing-protocols>
</routing-instance>
```

A. description is a key field defined in the interface list
B. The ethernetCsmacd type is imported from the iana-if-type module
C. address is a container defined in the ietf-interfaces module
D. ipv4 is a container defined in the ietf-ip module
E. interface has the YANG data node type of container

Answer: AB

QUESTION 103
Refer to the exhibit. Which interface is included in the payload resulting from the script?

```
def ospf_interface(interface, process, area='0'):
  payload = [
    {
      "jsonrpc": "2.0",
      "method': "cli",
      "params": {
       "cmd": "interface ethernet " + interface,
       "version": 1
      },
      "id": 1
    },
    {
     "jsonrpc": "2.0",
     "method': "cli",
     "params": {
      "cmd": "ip router ospf " + process + " area " + area,
      "version": 1
     },
     "id": 2
    }
   ]
  return payload
pl = ospf_interface('1/1','100','1')
```

A. ethernet 1
B. ethernet 100
C. ethernet 1/1
D. ethernet 0

Answer: D

QUESTION 104
Refer to the exhibit. Interfaces named Loopback0, Loopback1, and Loopback2 must be created and enabled on a Cisco IOS XE target device in the lab group.
Which loop must be added to the end of the Ansible "create int" task?

```
---
- name: Create Int
  hosts: lab
  gather_facts: no
  vars:
    intlist:
    - 0
    - 1
    - 2
  tasks:
- name: create int
  ios_interface:
    name: Loopback{{item}}
    enabled: true
```

A. with_items: "{{intlist}}"
B. with_parent: "{{intlist}}"
C. with_list: "{{intlist}}"
D. with_groups: "{{intlist}}"

Answer: C

QUESTION 105
Refer to the exhibit. A Python script is used to configure a Cisco IOS XE router. The Loopback2 interface currently has a description of Management2 and an IP address/netmask of 10.222.34.22/32. What is the result of executing the script?

```
headers = {'Content-Type': 'application/yang-data+json',
           'Accept': 'application/yang-data+json'}

data = OrderedDict([('ietf-interfaces:interface',
          OrderedDict([
                       ('name', 'Loopback2') ,
                       ('type', 'iana-if-type:softwareLoopback') ,
                       ('ietf-ip:ipv4',
                          OrderedDict([
                             ('address', [OrderedDict([
                                ('ip', '10.222.234.8'),
                                ('netmask', '255.255.255.0')
                             ])]
                             )
                          ])
                       ),
                    ])
                 )])

response =
requests.put("https://10.10.20.48:443/restconf/data/ietf-interfaces:interfaces/interface=Loopback2",
             auth=("cisco", "cisco 1234!"),
             headers=headers,
             verify=False,
             json=data
             )
```

A. The interface description remains the same.
B. The router rejects all commands and the configuration remains the same.
C. The interface is removed from the configuration.
D. The interface description is removed from the configuration.

Answer: A

QUESTION 106
Refer to the exhibit. NTP server 10.1.1.20 must be configured on the target Cisco IOS XE device without using authentication and logging. Which state should be added on a new line at the end of the Ansible task?

```
- name: configure ntp
  ios_ntp:
    server: 10.1.1.20
    logging: false
    auth: false
```

A. state: true
B. state: started
C. state: present
D. state: installed

Answer: C
Explanation:
https://docs.ansible.com/ansible/2.10/collections/cisco/ios/ios_ntp_module.html

QUESTION 107
Refer to the exhibit. The configuration commands are entered in CLI config mode to configure a static telemetry subscription on a Cisco IOS XE device. The commands are accepted by the device, but the consumer receives no telemetry data. Which change must be made to ensure that the consumer receives the telemetry data?

```
telemetry ietf subscription 154
 encoding encode-tdl
 filter xpath /memory-ios-xe-oper:memory-statistics/memory-statistic
 source-vrf Mgmt-intf
 stream yang-push
 update-policy periodic 6000
```

A. The IP address of the receiver must be set.
B. The stream type must be set to YANG.
C. The update policy period must be shortened.
D. The sender IP address must be set.

Answer: B
Explanation:
https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/prog/configuration/1610/b_1610_programmability_cg/model_driven_telemetry.html

QUESTION 108
Which script binds a network to a template?

A.
```
import requests
url = "https://api.meraki.com/api/v0/networks/"  \
      "{{networkId}}/split"
payload = {
    "configTemplateId": "N_23952905",
    "autoBind": True
}
headers = {
    'Accept': '*/*',
    'Content-Type': 'application/json'
}
response = requests.request("POST", url,
                            headers=headers,
                            data=payload)
print(response.text.encode('utf8'))
```

B.
```
import requests
url = "https://api.meraki.com/api/v0/networks/"  \
      "{{networkId}}/bind"
payload = {
    "configTemplateId": "N_23952905",
    "autoBind": False
}
headers = {
    'Accept': '*/*',
    'Content-Type': 'application/json'
}
response = requests.request("POST", url,
                            headers=headers,
                            data=payload)
print(response.text.encode('utf8'))
```

C.
```
import requests
url = "https://api.meraki.com/api/v0/networks/"  \
      "{{networkId}}/bind"
payload = {
    "configTemplateId": "N_23952905",
    "autoBind": False
}
headers = {
    'Accept': '*/*',
    'Content-Type': 'application/json'
}
response = requests.request("PUT", url,
                            headers=headers,
                            data=payload)
print(response.text.encode('utf8'))
```

D.
```
import requests
url = "https://api.meraki.com/api/v0/networks/"  \
      "{{networkId}}/split"
payload = {
    "configTemplateId": "N_23952905",
    "autoBind": True
}
headers = {
    'Accept': '*/*',
    'Content-Type': 'application/json'
}
response = requests.request("PUT", url,
                            headers=headers,
                            data=payload)
print(response.text.encode('utf8'))
```

Answer: D

QUESTION 109
What is an advantage of software-defined networks as compared to traditional networks?

A. They simplify operations by creating a concrete copy of the network.
B. They reduce complexity by coupling the control and the data plane.
C. They enable older hardware to be repurposed without an investment in new infrastructure.
D. They deliver a distributed management architecture that provides better resilience to errors.

Answer: D
Explanation:
https://www.ibm.com/services/network/sdn-versus-traditional-networking

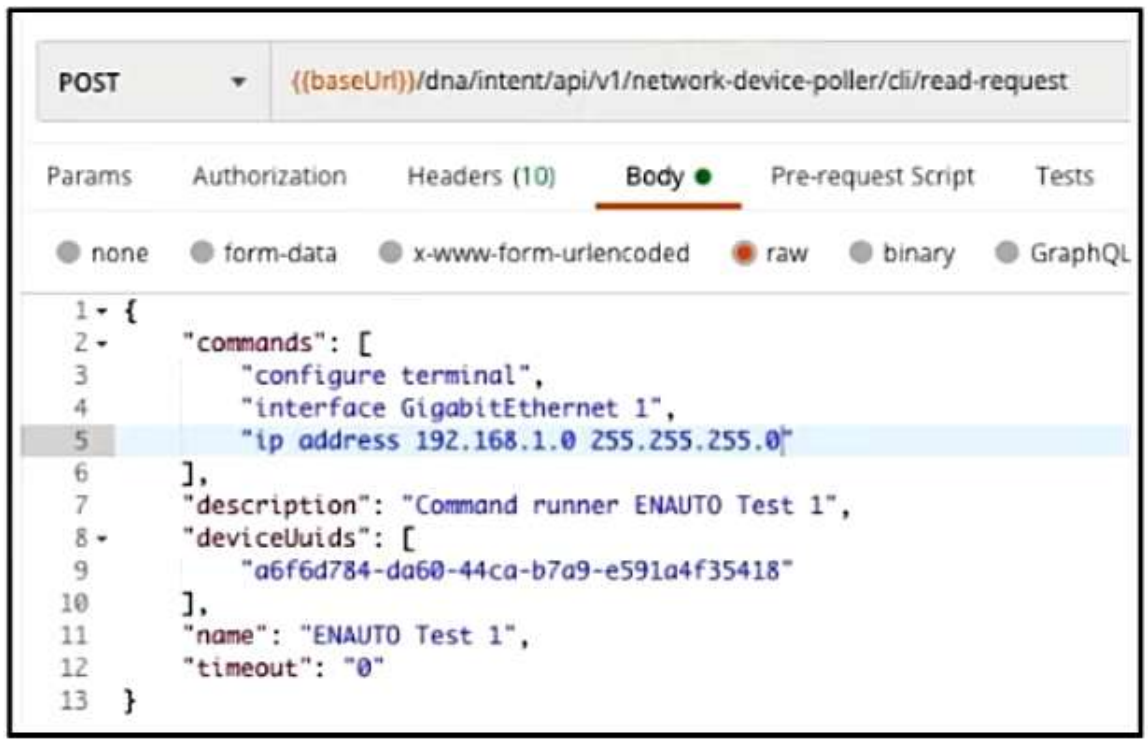
QUESTION 110
What does Cisco DNA Center use to manage third-party devices?

A. command runners

B. multivendor SDK
C. templates
D. device packages

Answer: D
Explanation:
https://developer.cisco.com/docs/dna-center/

QUESTION 111
Refer to the exhibit. After executing the call, an engineer obtains the result of the Command Runner execution. The three commands show as blocklisted in the downloaded file. What is the cause of the error?



A. The API user in Cisco DNA does not have write privileges on the devices.
B. The engineer attempting to access the devices in Cisco DNA Center does not have privilege 15.
C. The format of the JSON body must follow the CLI format.
D. Command Runner supports only the show command and the read-only command.

Answer: D

QUESTION 112
Refer to the exhibit. Cisco SD-WAN deployment must be fixed using vManage APIs. A call to vEdge Hardware Health API returns the data in the exhibit (only a portion is shown). If the JSON shown in the exhibit is converted to a Python dictionary named "d", how is the "status" property referenced?

A. d[`data'][`statusList'][`status']
B. nbvnbvvnbhg
C. d{`data'}[0]{`statusList'}[0]{`status'}
D. d[data][0][statusList][0][status]

Answer: C

QUESTION 113
What is a capability of Cisco SD-WAN vManage Certificate Management API?

A. deletes existing installed certificates
B. distributes the root certificate to client devices
C. generates SSL certificates
D. creates certificate signing requests

Answer: D

QUESTION 114
Refer to the exhibit. A template is provided to a junior developer to automate the creation of a network on the Meraki dashboard. The new network needs to have the id 123456789 and support only wired network
connections. What type needs to be added to the API?

```
POST https://api.meraki.com/api/v0/organizations/<org id>/networks
Request body: { "name": "Template", "organizationId": <org id>, "type": "[          ]"}
Response code: 201
Response body: { "id": <network id>, "name": "Template",
                 "organization id": <org id>, "type": "[          ]", "tags": null }
```

A. switch
B. wireless
C. appliance
D. systemsManager

Answer: C

QUESTION 115
Drag and Drop Question

```
$ pyang -f tree ietf-interfaces.yang
module: ietf-interfaces
  +--rw interfaces
  |  +--rw interface* [name]
  |     +--rw name                          string
  |     +--rw description?                  string
  |     +--rw type                          identityref
  |     +--rw enabled?                      boolean
  |     +--ro statistics
  |        +--ro discontinuity-time    yang:date-and-time
  |        +--ro in-unicast-pkts?      yang:counter64
  |        +--ro in-broadcast-pkts?    yang:counter64
  x--ro interfaces-state
     x--ro interface* [name]
        x--ro name                 string
        x--ro type                 identityref
        x--ro admin-status         enumeration {if-mib}?
        x--ro oper-status          enumeration
        x--ro statistics
           x--ro discontinuity-time    yang:date-and-time
           x--ro in-octets?            yang:counter64
           x--ro in-unicast-pkts?      yang:counter64
```

Refer to the exhibit. Drag and drop the code from the bottom onto the box where the code is missing to complete the ncclient request that captures the operational data of the interfaces of a Cisco IOS XE device. Options may be used once, more than once, or not at all.

```
from ncclient import manager
import xml.dom.minidom

USERNAME = 'cisco'
PASSWORD = 'cisco'
HOST = '10.10.20.181'

data = ''' 
    <[          ] xmlns="urn:ietf:params:xml:ns:yang:ietf-interfaces">
      <[          ]>
        <statistics></statistics>
      </[          ]>
    </[          ]>
'''

with manager.connect(host=HOST, password=PASSWORD, port=830, username=USERNAME,
                     hostkey_verify=False, device_params={'name':'iosxe'}) as m:
    c = m.get(filter=("[          ]", data)).data_xml

    xml = xml.dom.minidom.parseString(c)
    xml_pretty_str = xml.toprettyxml()
    print(xml_pretty_str)
```

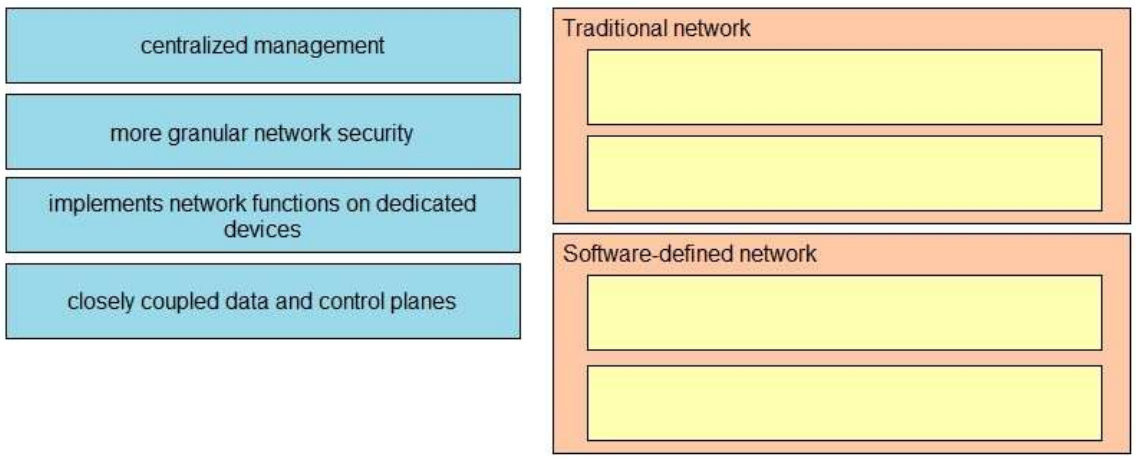
interfaces-state	interface-state	interfaces
xpath	subtree	interface

Answer:

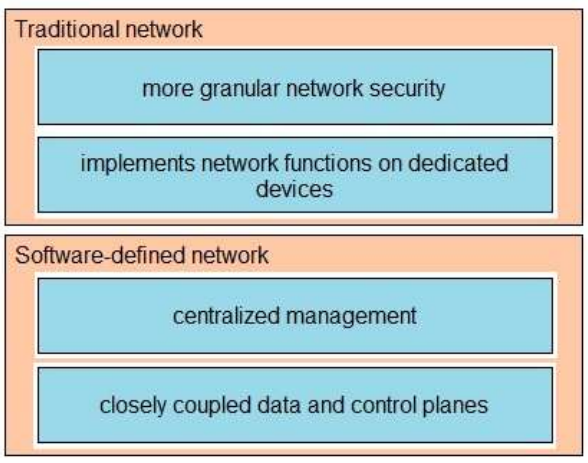
```
from ncclient import manager
import xml.dom.minidom

USERNAME = 'cisco'
PASSWORD = 'cisco'
HOST = '10.10.20.181'

data = '''
    < [interface-state] xmlns="urn:ietf:params:xml:ns:yang:ietf-interfaces">
       < [xpath] >
          <statistics></statistics>
       </ [interface] >
    </ [interface-state] >
'''

with manager.connect(host=HOST, password=PASSWORD, port=830, username=USERNAME,
                     hostkey_verify=False, device_params={'name':'iosxe'}) as m:
    c = m.get(filter=(" [subtree] ", data)).data_xml

    xml = xml.dom.minidom.parseString(c)
    xml_pretty_str = xml.toprettyxml()
    print(xml_pretty_str)
```

interfaces-state	interface-state	interfaces
xpath	subtree	interface

QUESTION 116
Drag and Drop Question
Drag and drop the characteristics from the left onto the network types on the right.



Answer:



QUESTION 117
Drag and Drop Question
Drag and drop the code from the bottom onto the box where the code is missing to perform the login operation and security check on the vManage web server at the specified IP address. Not all code options are used.

```
import requests

login_url = 'https://10.20.20.254:8443/j_security_check'
[                                                       ]
session = requests.session()
[                                                       ]
if b'<html>' in response.content:
    print('Login Failed')
else:
    print('Login Success')
```

```
response = session.post(url=login_url, data=login_credentials, verify=False)
```

```
login_credentials = ('j_username':'admin', 'j_password':'admin')
```

```
response = session.get(url=login_url, data=login_credentials, verify=False)
```

```
login_credentials = {'username':'admin', 'password':'admin'}
```

```
response = session.post(url=login, data=credentials, verify=False)
```

```
login_credentials = {'j_username':'admin', 'j_password':'admin'}
```

Answer:

```
import requests

login_url = 'https://10.20.20.254:8443/j_security_check'
[response = session.get(url=login_url, data=login_credentials, verify=False)]
session = requests.session()
[login_credentials = {'j_username':'admin', 'j_password':'admin'}]
if b'<html>' in response.content:
    print('Login Failed')
else:
    print('Login Success')
```

```
response = session.post(url=login_url, data=login_credentials, verify=False)
```

```
login_credentials = ('j_username':'admin', 'j_password':'admin')
```

```
login_credentials = {'username':'admin', 'password':'admin'}
```

```
response = session.post(url=login, data=credentials, verify=False)
```

QUESTION 118
Drag and Drop Question
Drag and drop the code from the bottom onto the box where the code is missing to complete this API request against the Cisco SD-WAN vManage Statistics API, which specifies a device with an Id of 100faff9-8b36-4312-bf97-743b26bd0211, a local color of biz-internet, and a remote color of gold. Not all options are used.

```
https://vmanage-ip-address:8443/dataservice/device/app-route/statistics?
[                ] 100faff9-8b36-4312-bf97-743b26bd0211
[                ] biz-internet [                ] gold
```

```
&local-color"    &color"    &remote-color"
device"          deviceId"
```

Answer:

```
https://vmanage-ip-address:8443/dataservice/device/app-route/statistics?
&color"          100faff9-8b36-4312-bf97-743b26bd0211
device"          biz-internet &local-color" gold
```

```
&remote-color"
deviceId"
```

QUESTION 119
Drag and Drop Question
Drag and drop the code from the bottom onto the box where the code is missing to construct a Python script to automate the process of updating the site-to-site VPN settings of the network. Not all options are used.

```
import requests

url = "https://api.meraki.com/api/v0/networks/{{networkId}}/ [          ] "

payload = {
    "mode": "spoke",
    "hubs": [
        {"hubId": "N_4901849", "useDefaultRoute": True},
        {"hubId": "N_1892489", "useDefaultRoute": False}
    ],
    "subnets": [
        {"localSubnet": "192.168.1.0/24", "useVpn": True},
        {"localSubnet": "192.168.128.0/24", [          ] }
    ]
}
headers = {
    'Accept': '*/*',
    'Content-Type': 'application/json'
}

response = requests.request("PUT", url,
                            headers=headers,
                            [          ] )
print(response.text.encode('utf8'))
```

"useVpn": True	networksVpn
data=payload	siteToSiteVpn

Answer:

```
import requests

url = "https://api.meraki.com/api/v0/networks/{{networkId}}/ siteToSiteVpn "

payload = {
    "mode": "spoke",
    "hubs": [
        {"hubId": "N_4901849", "useDefaultRoute": True},
        {"hubId": "N_1892489", "useDefaultRoute": False}
    ],
    "subnets": [
        {"localSubnet": "192.168.1.0/24", "useVpn": True},
        {"localSubnet": "192.168.128.0/24", "useVpn": True }
    ]
}
headers = {
    'Accept': '*/*',
    'Content-Type': 'application/json'
}

response = requests.request("PUT", url,
                            headers=headers,
                            data=payload )
print(response.text.encode('utf8'))
```

networksVpn

Explanation:
https://developer.cisco.com/meraki/api-v1/#!get-network-appliance-vpn-site-to-site-vpn