Number: 4A0-AI1
Passing Score: 800
Time Limit: 120
File Version: 3.0

Exam Code: 4A0-AI1

Exam Name: Nokia NSP IP Network Automation Professional Composite Exam

Exam A

QUESTION 1
Which of the following is NOT a characteristic of Intent-based networking?

A. Abstraction
B. Virtualization
C. Automation
D. Persistence

Correct Answer: B
Section:
Explanation:
Virtualization is not a characteristic of intent-based networking, but rather a technology that enables it. Virtualization is the process of creating virtual versions of physical resources, such as servers, storage, or networks1. Virtualization allows for more flexibility and scalability in network design and management, but does not imply any automation or intelligence.

QUESTION 2
Which of the following statements best describes the Intent Manager application?

A. It discovers and manages network elements so they can be used by other NSP applications.
B. It provides the ability to simulate changes in the IP topology.
C. It generates and validates the configuration of the network.
D. It manages YANG-based telemetry.

Correct Answer: C
Section:
Explanation:
The statement that best describes the Intent Manager application is: "It generates and validates the configuration of the network." Intent Manager is responsible for collecting the user's intent, verifying the user's input, and converting the user's intent into a device-specific configuration. It uses a highlevel language to abstract the network complexity, enabling the network operator to define intent in simple terms. Once the intent is defined, Intent Manager automatically generates a device-specific configuration for each network element. It then validates the intent by checking the network's current state against the user's desired intent. If there is a mismatch, it will take corrective action to bring the network to the desired intent state.

QUESTION 3
Which of the following is NOT a characteristic of Infrastructurelure Intents?

A. Policy management
B. System security
C. Initial hardware configuration
D. L2/L3 VPN configuration of multiple services

Correct Answer: D
Section:
Explanation:
Infrastructure Lure Intents are a type of Network Intent that describe how network resources should be allocated and configured for a specific service or application.
L2/L3 VPN configuration of multiple services is NOT a characteristic of Infrastructure Lure Intents, because it is more related to service provisioning than resource allocation.

QUESTION 4
Which of the following allows the Intent Manger to communicate with network elements being managed by SNMP?

A. NSP mediator
B. MDC mediator
C. NFM-P mediator
D. Generic mediator

Correct Answer: D
Section:
Explanation:
Intent Manager to communicate with network elements that are not directly supported by NSP12. A generic mediator can use SNMP or other protocols to interact with network elements.

QUESTION 5
Which of the following can only be viewed by making a RESTCONF call to query an existing intent?

A. abstract YANG model
B. ibn:intent model
C. template-mappings
D. metadata

Correct Answer: C
Section:
Explanation:
The template-mappings can only be viewed by making a RESTCONF call to query an existing intent.
The template-mappings are a set of key-value pairs that map the abstract YANG model attributes to concrete NFM-P templates and parameters. They are not exposed in the UI or the ibn:intent model, but they are stored internally in the NSP database.
For example, a template-mapping could be: /network=IP/service=VPN -> nsp-ip-vpn-template.

QUESTION 6
Which of the following statements about Nokia's Network Services Platform (NSP) Model-driven
Mediation (MDM) framework is FALSE?

A. It is based on the YANG data model.
B. It uses the NETCONF protocol.
C. It provides an abstracted view of the network element.
D. It is vendor agnostic.

Correct Answer: D
Section:
Explanation:
The Nokia NSP Model-driven Mediation (MDM) framework is based on the YANG data model, uses
the NETCONF protocol, and provides an abstracted view of the network element. However, it is designed to be vendor-specific, meaning it is designed to only manage Nokia equipment.
It provides an abstracted view of the network element is FALSE regarding Nokia's Network Services Platform (NSP) Model-driven Mediation (MDM) framework. MDM provides a way to interface between the Nokia NSP and network elements from different vendors. It is based on the YANG data model and uses the NETCONF protocol to provide configuration and management capabilities for network devices. However, MDM does not provide an abstracted view of the network element.
Instead, it translates the native configuration of the network element into a standardized YANG model, allowing the NSP to manage the network element in a vendor-agnostic way.
According to the NSP NSD and NRC 18.6 Planning Guide1, Model-Driven Mediation (MDM) is a component within the NSP architecture that provides mediation between model-driven NSP applications and Nokia or third-

party network devices. MDM provides an adaptation layer which uses adaptors to convert NSP application requests to device specific directives using standard protocols such as NETCONF, SNMP and CLI over SSH or Telnet12. MDM also provides an abstracted view of the network element3.

QUESTION 7
Which of the following protocols or standards is NOT used in Model Driven Telemetry?

A. CLI
B. NETCONF
C. gRPC
D. KAFKA

Correct Answer: A
Section:
Explanation:
CLI is not used in Model Driven Telemetry. Model Driven Telemetry is a technology that uses YANG data models, NETCONF, gRPC and KAFKA to monitor and collect data from network elements. It provides an abstracted view of the network element and is vendor agnostic.
Model Driven Telemetry is a method of collecting real-time data from network devices, allowing for more efficient network monitoring and troubleshooting. It uses a variety of protocols and standards, including NETCONF, gRPC, and Kafka. However, CLI is a text-based user interface used for issuing commands to a device, and it is not typically used for collecting telemetry data.
According to the Nokia Network Services Platform for industry and the public sector datasheet1, NSP model-driven telemetry framework supports the Nokia SR OS and third-party devices in configuring and collecting performance statistics using gRPC, SNMP, NETCONF and accounting files such as SAP QoS1. It also enables data to be persisted in a database and be made available (e.g., over a Kafka bus) for a variety of use cases1.

QUESTION 8
Which of the following statements about the NSP Workflow Manager (WFM) application is FALSE?

A. It allows network management tasks to be automated.
B. Only one workflow can be executed at one time.
C. Actions and expressions are extensible using Python.
D. A workflow action can run against RESTCONF APIs.

Correct Answer: B
Section:
Explanation:
The NSP Workflow Manager (WFM) application allows network management tasks to be automated by creating workflows. Multiple workflows can be run in parallel, and actions and expressions are extensible using Python. Additionally, a workflow action can run against RESTCONF APIs.
According to the NSP Release 19.11 Workflow Manager Application Help1, Workflow Manager (WFM) is an application that allows network management tasks to be automated using Nokia NSP or third-party APIs1. WFM supports a variety of use cases such as node software upgrades, service activation tests, service fulfillment and mass migration of services12. WFM uses actions and expressions that are extensible using Python1. A workflow action can run against RESTCONF APIs as well as other protocols such as SNMP, NETCONF and CLI1.

QUESTION 9
Match the following description with its meaning.
X - "uses Playbooks, written in simple YAML, that defines server configuration."
Y - "workflow service that aims to provide a way to define, manage, and execute tasks and workflows in the cloud without writing code."
Z - "a detailed specification for the desired network configuration."
W - "an application that allows the creation of complex operational workflows using an intuitive
GUI."

A. X - Openstack MistralY - AnsibleZ - Intent typeW - NSP Workflow Manager (WFM)
B. X - AnsibleY - Openstack MistralZ - NSP Workflow Manager (WFM)W - Intent type

C. X - AnsibieY - Openstack MistralZ - Intent typeW - NSP Workflow Manager (WFM)
D. X - NSP Workflow Manager (WFM)Y - Openstack MistralZ - Intent typeW - Ansible

Correct Answer: D
Section:

QUESTION 10
Which of the following is NOT part of the Augmented Assurance features provided by the NSP?

A. Sorting NEs by highest severity issues
B. Intelligent visualization
C. Commissioning of equipment
D. On-demand OAM testing

Correct Answer: C
Section:
Explanation:
Augmented Assurance is a feature that provides "extended automated network operations" with "open APIs and no-code customizable workflows". Another source2 mentions that NSP offers "automated repetitive tasks and complex workflows" to reduce operating costs.
The Augmented Assurance features provided by the NSP (Nokia Network Services Platform) include:
A. Sorting NEs by highest severity issues B. Intelligent visualization D. On-demand OAM testing

QUESTION 11
Which of the following statements about Model-Driven Mediation (MDM) is FALSE?

A. It CANNOTcommunicatesthrough devices that only support CLI.
B. It is the foundation for supporting multi-vendor device management.
C. It provides the translation between the AMI and device model.
D. It can interface with devices that support OpenConfig gRPC Network Management Interface.

Correct Answer: A
Section:
Explanation:
Model-Driven Mediation (MDM) is a component that provides mediation between model-driven NSP applications and Nokia or third-party network devices. It uses adaptors to convert NSP application requests to device specific directives using standard protocols such as NETCONF, SNMP and CLI over SSH or Telnet.
This statement is false because MDM can communicate with devices that only support CLI (Command Line Interface) using a translation module that converts CLI commands to NETCONF or RESTCONF protocols. MDM acts as a mediator between the northbound system and the southbound devices by translating device configuration to a standard format that can be consumed by the northbound system.
The other statements are true:
B. It is the foundation for supporting multi-vendor device management. C. It provides the translation between the AMI and device model. D. It can interface with devices that support OpenConfig gRPC Network Management Interface.
Reference: Nokia NSP IP Network Automation Professional Guide, page 83-85.

QUESTION 12
Which of the following statements about REST and RESTCONF is FALSE?

A. REST API uses KAFKA notification service.
B. REST/RESTCONF API performs CRUD operations on data.
C. REST uses HTTP protocol for data communication.

D. RESTCONF does NOT use schema mounts.

Correct Answer: D
Section:
Explanation:
REST and RESTCONF APIs provide a single entry point into the consolidated suite of NSP applications. Another source2 mentions that NSP REST gateway provides access to NSD and NRC functionalities through REST API services. A third source3 explains that RESTCONF is an HTTP-based protocol that performs CRUD operations on data using YANG models.

QUESTION 13
Which of the following is NOT a benefit of ZTP?

A. Lowers overall time for network rollout
B. Increases network throughput
C. Optimizes costs
D. Minimizes the amount of commands typed

Correct Answer: B
Section:
Explanation:
The option that is NOT a benefit of ZTP (Zero Touch Provisioning) is:
B. Increases network throughput.
ZTP is a network device deployment method that automates the initial configuration process of network devices, eliminating the need for manual intervention. The benefits of ZTP include:
A. Lowers overall time for network rollout C. Optimizes costs D. Minimizes the amount of commands typed
ZTP is a method of setting up devices that automatically configures the device using a switch feature. Another source2 mentions that ZTP helps IT teams quickly deploy network devices in a large-scale environment, eliminating most of the manual labor involved with adding them to a network. A third source3 explains that ZTP uses Cisco Plug and Play (Cisco PnP) to verify devices and perform downloads over a secure, encrypted channel.

QUESTION 14
Which of the following HTTP methods is NOT supported by REST/RESTCONF?

A. OPTIONS
B. GET
C. PATCH
D. POST
E. TRACE

Correct Answer: E
Section:
Explanation:
The HTTP methods that are supported by REST/RESTCONF are:
OPTIONS: Used to retrieve the communication options available for a resource.
GET: Used to retrieve a representation of a resource.
PATCH: Used to apply a partial update to a resource.
POST: Used to create a new resource or trigger a specific action.
The HTTP method TRACE is not supported by REST/RESTCONF.
Reference: Nokia NSP IP Network Automation Professional Guide, page 77.

QUESTION 15
Which of the following HTTP methods are NOT supported in REST and RESTCONF?

A. GET
B. PUT
C. DELETE
D. ADD
E. PATCH

Correct Answer: D
Section:
Explanation:
The HTTP methods that are supported by REST/RESTCONF are:
GET: Used to retrieve a representation of a resource.
PUT: Used to replace a resource or create it if it does not exist.
DELETE: Used to delete a resource.
PATCH: Used to apply a partial update to a resource.
The HTTP method ADD is not a standard HTTP method and is not supported by REST/RESTCONF.
Reference: Nokia NSP IP Network Automation Professional Guide, page 77.

QUESTION 16
What are the two main functionalities of the NSP REST API gateway services?

A. Versioning model
B. Create subscriptions
C. Location services
D. Authentication and termination services
E. 1 and 2
F. 2 and 3
G. 1 and 4
H. 3 and 4

Correct Answer: C
Section:
Explanation:
the NSP REST Gateway API provides the entry point for API clients to locate and authenticate REST client requests to gain access to the various NSP modules that have registered API services.

QUESTION 17
Which of the following statements about the YANG data modeling language is FALSE?

A. Data is in the form of a tree-like structure.
B. It is used to model configuration and state data.
C. Data model is not human readable.
D. Defines actions and operations.

Correct Answer: C
Section:
Explanation:
YANG is a data modeling language used to model configuration and state data for network devices. It defines a tree-like structure for data and is used to store, configure, and retrieve information from network devices. It is

human readable and can be used to define actions and operations.

QUESTION 18
Which of the following Kafka components represents a stream of messages of a particular category?

A. Producer
B. Broker
C. Topic
D. Consumer

Correct Answer: C
Section:
Explanation:
a Kafka topic is a channel where publishers (producers) publish data and where subscribers (consumers) receive data. A topic represents a stream of messages of a particular category.
In Kafka, a topic represents a stream of messages of a particular category or type. Producers publish messages to a specific topic, and consumers subscribe to and read messages from topics. Brokers are responsible for managing topics and ensuring that messages are distributed efficiently across the cluster.

QUESTION 19
Which of the following statements about Kafka is FALSE?

A. It is a distributed messaging system.
B. It is an open-source platform.
C. It is used to send real-time notifications.
D. It has four components: Producer, Consumer, Topic and Connector.

Correct Answer: D
Section:
Explanation:
Kafka is a distributed messaging system that is open-source and can be used to send real-time notifications. However, it has more than four components, such as brokers, partitions, replicas, consumer groups and zookeeper.

QUESTION 20
Which of the following statements about NSP APIs is FALSE?

A. They allow for supervision of network elements.They support REST/RESTCONF, SOAP/XML and GraphQlll1
B. They help with the definition and activation of network services.
C. They allow for an OSS and NSP server to talk to each other.

Correct Answer: B
Section:
Explanation:
NSP APIs allow for supervision of network elements, help with the definition and activation of network services, and allow for an OSS and NSP server to talk to each other. However, they do not support GraphQL, which is a query language for APIs.
According to Nokia NSP IP Network Automation Professional guide, NSP APIs support REST/RESTCONF, SOAP/XML and GraphQlll, and help with the definition and activation of network services, and they also allow for supervision of network elements and an OSS and NSP server to talk to each other. Therefore, statement B is false as it states that NSP APIs support Kafka which is not mentioned in the guide as a supported API.

QUESTION 21
Which of the following NSP API types provides location services?

A. REST
B. RESTCONF
C. XML
D. SOAP

Correct Answer: A
Section:
Explanation:
location services are part of the NSP REST API, which provides a full list of NSP REST API service names, endpoints and URLs. Therefore, correct answer is A. REST Reference:
https://www.nokia.com/networks/training/nsp/self-paced/programmable-network-automation/
https://documentation.nokia.com/cgibin/
dbaccessfilename.cgi/3HE12075AAACTQZZA01_V1_NSP%2017.6%20API%20Programmer%20Gu ide.pdf

QUESTION 22
Which of the following is NOT an NSP application?

A. Service Fulfilment
B. Network Supervision
C. IP/MPLS Optimization
D. Network Virtualization

Correct Answer: C
Section:
Explanation:
According to the Nokia NSP Learning and Certification Program2, there are four main NSP applications:
Service Fulfillment: Enables service providers to design, create, and deliver IP/MPLS services across a multi-vendor network.
Network Supervision: Provides real-time visibility and control of network performance, faults, and inventory across physical and virtual networks.
IP/MPLS Optimization: Optimizes network resources by applying advanced algorithms and machine learning techniques to automate traffic engineering and path computation.
Network Virtualization: Enables service providers to create and manage virtualized network functions (VNFs) and network slices using cloud-native technologies.

QUESTION 23
Which of the following statements about POSTMAN is FALSE?

A. A Postman account allows you to create a maximum of 3600 workspaces for free.
B. Postman allows you to add a parameter to a request. 1mm
C. Postman allows you to define a variable to store and re-use values in a request.
D. Postman pre-request scripts are executed before the main request.

Correct Answer: A
Section:
Explanation:
A Postman account allows you to create a maximum of 3600 workspaces for free. Postman is an API development environment used to create, test, and document APIs. It allows users to send requests and receive responses in a variety of formats, as well as add parameters to requests, define variables to store and re-use values, and execute pre-request scripts before the main request. However, Postman accounts do not allow users to create a maximum of 3600 workspaces for free; users must upgrade their accounts to access this feature.

QUESTION 24
Which of the following statements about an intent is FALSE?

A. It is stored in the database as the source of truth.
B. It is an instance of an intent type.
C. It can be created and deleted through RESTCONF API.
D. It only involves services.

Correct Answer: D
Section:
Explanation:
According to the Nokia NSP Intent Manager Application Help2, an intent has the following characteristics:
It is stored in the database as the source of truth.
It is an instance of an intent type, which defines the structure and logic of an intent.
It can be created and deleted through RESTCONF API or through the Intent Manager GUI.
It can involve services, nodes, links, paths, or any other network elements.

QUESTION 25
Which of the following is NOT a benefit of Intent Manager?

A. Allows the parallel execution of many workflows.
B. Provides flexible capabilities for achieving high-level bus
C. Allows programmable and flexible logic.
D. Provides concepts for finding misalignments.

Correct Answer: A
Section:
Explanation:
According to the Nokia NSP Intent Manager Application Help2, Intent Manager has the following benefits:
It allows programmable and flexible logic. You can use scripts to define how intents are translated into network commands and how they react to network events.
It provides concepts for finding misalignments. You can use audit and synchronize functions to detect and resolve any discrepancies between intents and network states.
It provides flexible capabilities for achieving high-level business goals. You can use intents to express complex network behaviors such as service protection, bandwidth optimization, or latency reduction.
Therefore, based on these sources12, the correct answer to your question is:
A. Allows the parallel execution of many workflows.
This is NOT a benefit of Intent Manager because workflows are not related to intents. Workflows are sequences of tasks that can be executed on NSP using Workflow Manager.

QUESTION 26
Which of the following statements about the NSP Workflow Manager is FALSE?

A. It provides several building tools to design and create new workflows.
B. It uses Openstack Heat as the core workflow engine.
C. It supports scheduling of workflow executions.
D. It supports parallel execution of many workflow.

Correct Answer: B
Section:
Explanation:
According to the Nokia NSP Workflow Manager Application Help2, Workflow Manager has the following characteristics:
It provides several building tools to design and create new workflows. You can use graphical editors, text editors, or import existing workflows from files or repositories.
It uses Openstack Mistral as the core workflow engine. Mistral is an open source project that provides a service for managing workflows across multiple cloud platforms.

It supports scheduling of workflow executions. You can use cron expressions or triggers to specify when and how often a workflow should run.
It supports parallel execution of many workflows. You can run multiple workflows simultaneously on different network elements or services.
Therefore, based on these sources, the correct answer is:
B. It uses Openstack Heat as the core workflow engine.
This is FALSE because Workflow Manager uses Openstack Mistral, not Heat, as the core workflow engine. Heat is another open source project that provides a service for orchestrating multiple cloud applications using templates.
The other statements are TRUE because:
A. It provides several building tools to design and create new workflows. This allows you to create workflows that suit your specific network needs and preferences.
C. It supports scheduling of workflow executions. This allows you to automate recurring network tasks and optimize network performance and availability.
D. It supports parallel execution of many workflows. This allows you to handle complex network scenarios and operations efficiently and effectively.

QUESTION 27
Which of the following statements about the NSP Kafka service is FALSE?

A. It allows an API client to receive event or alarm notifications.
B. It allows an API client to subscribe to different event types.
C. It is a distributed messaging system.
D. It uses NETCONF based operations and YANG models.

Correct Answer: D
Section:
Explanation:
The NSP Kafka service is a distributed messaging system that allows different applications to publish and subscribe to different event types. It provides an API client to receive event or alarm notifications and subscribe to different event types. However, it does not use NETCONF based operations and YANG models. Instead, it uses the Kafka protocol to send and receive messages between producers and consumers.

QUESTION 28
Which of the following is NOT a benefit of Service Fulfilment API?

A. Increases service agility
B. Reduces human errors
C. Allows multi-vendor service provisioning
D. Provides alarm monitoring

Correct Answer: D
Section:
Explanation:
Service Fulfilment API does not provide alarm monitoring; rather, it allows customers to quickly and easily order and provision services from a single interface, allowing for increased service agility and reduced human error.
According to the Nokia NSP Service Fulfilment API User Guide, Service Fulfilment API offers the following benefits:
A. Increases service agility by providing a programmable interface for automated service provisioning and management, allowing network operators to quickly respond to customer demands and network changes.
B. Reduces human errors by automating the service provisioning process, which minimizes the risk of manual configuration errors and improves service quality.
C. Allows multi-vendor service provisioning by providing a vendor-agnostic interface that supports different types of network equipment and technologies, reducing vendor lock-in and enabling greater network flexibility.

QUESTION 29
Which API can identify the root cause(s) of issues in the network?

A. Service Fulfilment API
B. Fault Management API
C. Telemetry API

D. Subscription management

Correct Answer: B
Section:
Explanation:
The correct answer is B. Fault Management API. The Fault Management API can be used to identify the root cause(s) of issues in the network, such as hardware or software faults, configuration errors, and other problems. It provides a unified interface to receive and analyze fault information from multiple network elements.
The API that can identify the root cause(s) of issues in the network is the Fault Management API. This API allows network operators to monitor network faults and events in real-time, and diagnose and resolve issues quickly and efficiently. It provides information about the root cause(s) of the fault and the affected network elements, as well as enabling automated fault handling and resolution.
Reference: Nokia NSP Fault Management API documentation athttps://developer.nokia.com/networks/nsd-fault-management-api/1.0/overview/

QUESTION 30
Which of the following is NOT supported by the Workflow Manager out of the box?

A. REST/RESTCONF APIs
B. Optical integration using TL1
C. Shell command execution
D. CLI command execution on SROS and third party routers

Correct Answer: C
Section:
Explanation:
Workflow Manager is a module of Nokia NSP that allows users to create and execute automated procedures and closed loop automation using Nokia NSP or third party APIs3. It uses Mistral as the workflow engine and supports various technologies that can be used in a workflow2.
Some of the technologies that are supported by Workflow Manager out of the box are:
REST/RESTCONF APIs
CLI command execution on SROS and third party routers
Optical integration using TL1
SNMP traps
Email notifications

QUESTION 31
Which of the following sequences best describes the process of moving to SDN based self-regulated networking?

A. action-based networking -> static networking -> adaptive networking -> autonomous networking
B. static networking -> action-based networking -> autonomous networking -> adaptive networking
C. static networking -> action-based networking -> adaptive networking > autonomous networking
D. action-based networking -> static networking -> autonomous networking -> adaptive networking

Correct Answer: C
Section:
Explanation:
Nokia NSP is a platform that enables management, control and automation of IP/Optical networks. It supports various levels of network automation, from static networking to autonomous networking.
The process of moving to SDN based self-regulated networking involves four stages:
Static networking: The network is manually configured and operated by human operators. There is no automation or intelligence involved.
Action-based networking: The network is partially automated by using predefined actions or scripts that are triggered by events or commands. There is still human intervention required for complex tasks or exceptions.
Adaptive networking: The network is dynamically automated by using policies, analytics and machine learning that can adjust the network behavior based on changing conditions and objectives.
There is minimal human intervention required for oversight and validation.
Autonomous networking: The network is fully automated by using artificial intelligence and closedloop feedback that can optimize the network performance and reliability without any human involvement. The network can

self-heal, self-optimize and self-protect.

QUESTION 32
Which of the following is NOT a building block of NSP automation?

A. Terminal emulation configuration
B. Model-driven mediation
C. Analytics & telemetry
D. Multi-vendor support

Correct Answer: A
Section:
Explanation:
Terminal emulation configuration is not one of the building blocks of NSP automation. The building blocks of NSP automation are Model-driven mediation, Analytics & telemetry, Multi-vendor support and Automation scripting. Model-driven mediation enables the automation of common tasks across multiple vendors and devices, and analytics & telemetry enables the gathering of critical data to ensure service quality. Multi-vendor support enables the automation of tasks across multiple vendors, and automation scripting enables the development of robust and secure automation scripts.
NSP automation is based on four key building blocks:
Model-driven mediation: This enables NSP to communicate with various network devices and protocols using a common data model and abstraction layer. It supports YANG models, NETCONF, RESTCONF, SNMP, TL1 and CLI2.
Analytics & telemetry: This enables NSP to collect and analyze network data using streaming telemetry, SNMP polling, syslog and other methods. It supports various analytics applications such as Network Insight, Service Assurance and Traffic Engineering2.
Multi-vendor support: This enables NSP to manage and automate networks that consist of devices from different vendors and technologies. It supports Nokia SROS devices as well as third-party routers, switches and optical equipment3.
Programmable APIs: This enables NSP to expose its functionality and data to external applications or systems using RESTful APIs. It supports various use cases such as network supervision, service fulfillment, fault management and workflow management2.

QUESTION 33
Which of the following does NOT support Workflow actions?

A. NSP applications
B. Network elements
C. Windows OS devices
D. UNIX servers

Correct Answer: C
Section:
Explanation:
NSP Workflow Manager (WFM) is a module that allows users to create and execute automated procedures using NSP or third-party APIs. A workflow is a sequence of actions that can be performed on various targets such as:
NSP applications: These are the applications that run on NSP such as Network Insight, Service Assurance, Traffic Engineering and others. They can be accessed by using RESTful APIs2.
Network elements: These are the devices that are managed by NSP such as routers, switches and optical equipment. They can be accessed by using CLI, NETCONF, RESTCONF, SNMP or TL12.
UNIX servers: These are the servers that run UNIX-based operating systems such as Linux or Solaris. They can be accessed by using SSH or SCP2.

QUESTION 34
Which of the following scripting languages can be used to extend WFM actions and expressions?

A. PHP
B. Python
C. Perl
D. Groovy

Correct Answer: D
Section:
Explanation:
According to the Nokia NSP Programmable Network Automation website1, NSP API documentation and downloadable sample codes are available on the Nokia Network Developer Portal. The NSP Workflow Manager allows the design and management of workflows to automate network operations using Mistral DSL v2 which is based on YAML2. YAML definesexpressions in workflow and action definitions. The formatting of the YAML must comply with Mistral DSL v2 specifications3

QUESTION 35
Which syntax is used to reference a workflow variable when using Jlnja2?

A. {< ... >}
B. << ...>>
C. (* .- *)
D. {{...}}

Correct Answer: D
Section:
Explanation:
The {{...}} syntax is used to reference a workflow variable when using Jinja2. Jinja2 is a templating language used to generate dynamic text based on input variables, and the {{...}} syntax is used to access the value of a workflow variable within a Jinja2 template. The other syntaxes provided are not valid for referencing workflow variables in Jinja2.

QUESTION 36
Which of the following languages does Mistral Workflow support as Data Flow mechanisms?

A. Jaql
B. Jinja2
C. SQL
D. JSON

Correct Answer: B
Section:
Explanation:
According to the Mistral Workflow Language (v2) website1, Mistral Workflow Language supports YAQL and Jinja2 expression languages to reference workflow context variables and thereby implements passing data between workflow tasks. It's also referred to as Data Flow mechanism. YAQL is a simple but powerful query language that allows to extract needed information from JSON structured data1.

QUESTION 37
Which of the following is NOT a common workflow attribute defined by Mistral?

A. Type
B. Workflow-meta
C. Output
D. Input

Correct Answer: B
Section:
Explanation:
According to the Mistral Workflow Language (v2) website1, a workflow definition consists of several attributes that define its properties and behavior. The common workflow attributes are: name, description, type, input, output and vars1.

QUESTION 38
Which of the following best describes data flow in a workflow?

A. Transitioning between tasksB, Passing data between tasks
B. Dependency graph of tasks
C. Defines operation to perform

Correct Answer: B
Section:
Explanation:
According to the Nokia NSP Workflow Design and Management course12, a workflow is a sequence of tasks that are executed to achieve a certain goal. Data flow in a workflow refers to passing data between tasks12. Therefore, the correct answer is B.
Data flow can be defined using input, output, and publish parameters in a workflow definition3. Input parameters are used to pass data into a workflow, output parameters are used to return data from a workflow, and publish parameters are used to share data between tasks within a workflow3.

QUESTION 39
Which of the following is NOT a valid flow control attribute?

A. on-failure
B. on-complete
C. on-success
D. on-error

Correct Answer: A
Section:
Explanation:
According to the Mistral Workflow Language (v2) documentation1, which is one of the technologies that can be used in a NSP workflow2, flow control attributes are used to define how a task behaves depending on its execution status. The valid flow control attributes are on-success, on-error, oncomplete, and on-cancel1. Therefore, the correct answer is A.

QUESTION 40
Which Workflow state allows a Workflow to be executed?

A. Draft
B. Deprecated
C. Published
D. Released

Correct Answer: C
Section:
Explanation:
According to the Workflow Manager User Guide from Nokia, the correct answer is C. Published.
When a workflow is in the Published state, it can be executed by users who have the appropriate permissions. The Draft state is used during the creation of a new workflow, while the Deprecated state indicates that a workflow is no longer supported and should not be used. The Released state is not mentioned in the context of workflow execution.

QUESTION 41
Which of the following is the proper FULL syntax to describe a workflow task using the std.hrtp action to access a url using the GET method?
A)

```
my_task:
  action:  std.http
  input:
    url: http://test.org
    method:  GET
```

B)

```
my_task:
  action:  std.http
  input:
    html: http://test.org
    method:  GET
```

C)

```
my_task:
  action:  std.http url= "http://test.org" method:="GET"
```

D)

```
my_task:
  action:  std.http html= "http://test.org" method:="GET"
```

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

Correct Answer: A
Section:

QUESTION 42
Which of the following commands allows the action associated with a task to be run multiple times over a list of items?

A. with-items
B. concurrency
C. retry
D. count

Correct Answer: A
Section:
Explanation:
According to the Mistral Workflow Language (v2) documentation1, which is one of the technologies that can be used in a NSP workflow2, with-items is a task property that allows the action associated with a task to be run multiple times over a list of items1. The syntax for using with-items is:
task_name:
action:<action_name>
input:
<input_name>:<%item()%>
with-items:itemin<list>
You need to replace <action_name>, <input_name>, and <list> with your desired values. You can also use other properties such as concurrency, retry, or count to control how many iterations are executed in parallel, how many times an iteration is retried if it fails, or how many times an iteration is executed respectively1.

QUESTION 43
Which of the following timing attributes will halt the entire workflow and require user intervention to proceed?

A. wait-before
B. wait-after
C. timeout
D. pause-before

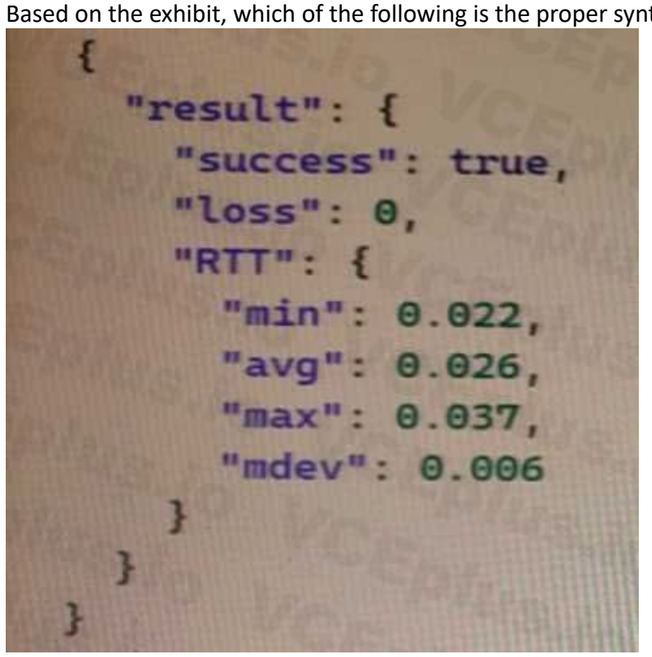
Correct Answer: D
Section:
Explanation:
This attribute specifies a manual approval step before executing a task1. The other attributes will either delay or abort the execution of a task, but not halt the entire workflow.

QUESTION 44
Which input is optional when using the std.ssh action to access a remote server?

A. cmd
B. host
C. password
D. username

Correct Answer: A
Section:
Explanation:
the input that is optional when using the std.ssh action is cmd. This parameter specifies the command to be executed on the remote server1. If this parameter is not provided, the action will only establish an SSH connection with the remote server and return its output1. The other parameters are required to authenticate and connect to the remote server.

QUESTION 45
Based on the exhibit, which of the following is the proper syntax to publish ONLY information about the RTT to the workflow context?



A)

```
publish:
  output: <% task().result %>
```

B)

```
publish:
  output: <% task().result.RTT %>
```

C)

```
publish:
  output: <% task().RTT %>
```

D)

```
publish:
  output: <% RTT %>
```

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

Correct Answer: C
Section:
Explanation:
This syntax assumes that there is a previous task that returns an object with an attribute named rtt that contains the round-trip time value1. The expression <% task().result.rtt %> evaluates to this value and assigns it to the variable rtt in the workflow context1.

QUESTION 46
Which feature can be used to make a workflow portableif the workflow needs to be executed on either a development or production lab)?

A. Conditional transactions
B. Environments
C. Forking
D. Joining

Correct Answer: B
Section:
Explanation:
a workflow can use environments to make it portable if the workflow needs to be executed on either a development or production lab. Environments are files that contain key-value pairs that can be used as input parameters for workflows1. Environments allow workflows to be executed with different settings without modifying the workflow definition1.

QUESTION 47
How long is the system token valid before expiring?

A. Never expires
B. 24 hours
C. 60 minutes
D. Configurable

Correct Answer: C
Section:
Explanation:
a system token is a string that is used to authenticate requests to the NSP REST API. A system token can be obtained by sending a POST request to the /token endpoint with a valid username and password1. a system token is valid for 60 minutes before expiring. After expiration, a new system token must be obtained by repeating the authentication process2.

QUESTION 48
Which of the following best describes an ad-hoc action?

A. Wrapper around an existing system action
B. Default action provided by Workflow Manager
C. Special action for NSP applications
D. Can only be used by one workflow

Correct Answer: A
Section:
Explanation:
Ad-hoc actions are wrappers around existing system actions that allow for more flexibility in terms of what can be done. They are not default actions provided by Workflow Manager, nor are they special actions for NSP applications. Ad-hoc actions can be used by multiple workflows.

QUESTION 49
Which of the following NSP CLI actions uses the network element's NE ID to establish communication?

A. nsp.cli
B. nsp.sr_cli
C. nsp.mdm_di
D. nsp.netconf

Correct Answer: B
Section:
Explanation:
nsp.sr_cli is a nodal communication action that uses the network element's NE ID to establish communication. It is one of the NSP actions and expression functions that can be used to design workflows for network automation

QUESTION 50
When using the nsp.netconf action, what does the host input represent?

A. L3 base router interface
B. System IP address
C. NSP server address
D. Management IP address

Correct Answer: D
Section:
Explanation:
nsp.netconf is a nodal communication action that uses NETCONF protocol to communicate with network devices. The host input represents the management IP address of the device that is being configured by NSP. It is one of the inputs required for nsp.netconf along with username, password, port and command.

QUESTION 51
Which directory or directories do the file actions provide accessto on the NSP server?

A. /tmp and /mnt
B. all directories
C. /home
D. /opt

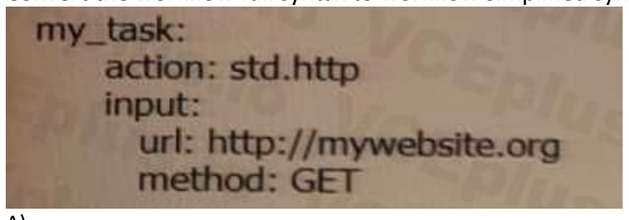
Correct Answer: B
Section:
Explanation:
file actions are NSP actions that provide access to files and folders on the NSP server. The file actions can access all directories on the NSP server, but they are restricted by the permissions of the user who runs them. For example, if a file action is run by a user who does not have write permission to a directory, the action will fail.

QUESTION 52
Which of the following data encoding/decoding formats is NOT supported by the Workflow
Manager?

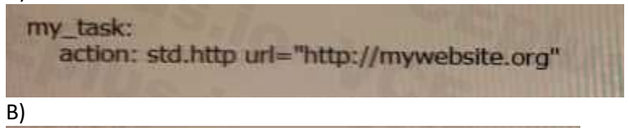
A. JSON
B. CSV
C. BER
D. YAML

Correct Answer: C
Section:
Explanation:
Workflow Manager is a tool that allows users to design and execute workflows for network automation using NSP actions and expression functions. The Workflow Manager supports data encoding/decoding formats such as JSON, CSV, XML and Base64. However, it does not support BER (Basic Encoding Rules), which is a format used for encoding data structures for transmission or storage.

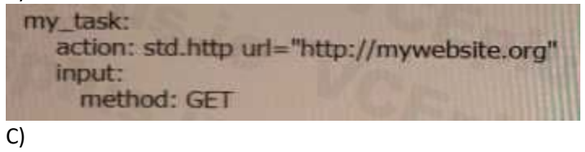
QUESTION 53
Convert the workflow full syntax to workflow simplified syntax. Which of the following is correct?



A)



B)



C)

```
my_task:
    action: url="http://mywebsite.org"
```

D)

```
my_task:
    action: std.http url="http://mywebsite.org" method="GET"
```

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

Correct Answer: D
Section:

QUESTION 54
Which of the following system actions will pause a workflow at some point and wait for an operator to confirm or deny a particular course of action?

A. std. sleep
B. nsp.wait
C. nsp.user_input
D. nsp.pause_before

Correct Answer: C
Section:
Explanation:
This system action allows you to pause a workflow and prompt the user for input. You can use this action to confirm or deny a course of action, or to enter some data that isrequired for the workflow1.
For example, you can use nsp.user_input to ask the user if they want to continue with a service deployment or rollback.
The other options are not correct because:
std.sleep is a standard Python function that pauses the execution of a script for a specified number of seconds2.
nsp.wait is a system action that waits for an event or condition to occur before resuming the workflow1. For example, you can use nsp.wait to wait for a service activation status change or a network element alarm.
nsp.pause_before is not a valid system action. There is no such action defined in the NSP documentation1.

QUESTION 55
Which of the following best describes intent-based networking?

A. Manual process of configuring networks and reacting to network Issues
B. Dynamically changing the network infrastructure in real-time through one centralized location
C. Comparing the actual and desired state of a network and taking action if they are not in sync
D. Automatic discovery of cross domain links between IP and optical networks

Correct Answer: C
Section:
Explanation:
Comparing the actual and desired state of a network and taking action if they are not in sync. Intentbased networking is a method of managing a network by defining the intent of the network and then continuously comparing the actual and desired state of the network. If the two states are not in sync, the system will take action to bring the actual state in line with the desired one. This is different from manual processes of configuring

networks or reacting to network issues. It also differs from dynamically changing the network infrastructure in real-time through one centralized location, or automatic discovery of cross domain links between IP and optical networks.

QUESTION 56
Which of the following configures the network based on input provided by the user?

A. Intent
B. Intent Type
C. YANG module
D. Framework files

Correct Answer: A
Section:
Explanation:
Intent is a high-level description of the desired outcome or state of the network. It allows users to specify what they want to achieve rather than how to achieve it. The intent is then translated into network configurations and policies that are used to configure the network infrastructure. Intentbased networking provides a higher level of abstraction than traditional network configuration methods, making it easier for users to specify their requirements and automate the configuration process.

QUESTION 57
Whatare the main sections of an abstract YANG module file?

A. Arguments and statements
B. Structures and statements
C. Arguments and leaves
D. Structure and arguments

Correct Answer: A
Section:
Explanation:
The main sections of an abstract YANG module file are arguments and statements.
An argument is a string that provides additional information about a statement. A statement is a keyword followed by an argument and optionally enclosed by braces ({ }) containing substatements.
For example, an abstract YANG module file could start with:
module ibn-intent { namespace "urn:nokia.com:ibn:intent"; prefix ibn;
This defines the module name, namespace and prefix as arguments for the module, namespace and prefix statements respectively.

QUESTION 58
Which of the following files contains all the back end implementations required for Intent configurations to be performed?

A. script-content.js
B. meta-info.json
C. yang-patch.json
D. util.js

Correct Answer: A
Section:
Explanation:
The script-content.js file contains all the back end implementations required for Intent configurations to be performed.
The script-content.js file is a JavaScript file that defines the logic for creating, updating, deleting and synchronizing intents. It also defines the validation rules and error handling mechanisms for intents.

For example, a script-content.js file could contain:
function createIntent(intent) { // logic for creating an intent }
function updateIntent(intent) { // logic for updating an intent }

QUESTION 59
Which of the following files contains helper functions that can be leveraged by the scripts of many different Intent types?

A. Framework
B. Mapping script
C. Tern plate-mapping
D. Configuration template

Correct Answer: A
Section:
Explanation:
The Framework file contains helper functions that can be leveraged by the scripts of many different
Intent types.
The Framework file is a JavaScript file that provides common utility functions for Intent operations. It is located in the /opt/nokia/nsp/intent/scripts directory on the NSP server. It can be imported by other script files using the require() function.
For example, a Framework file could contain:
function getNfmpTemplate(templateName) { // logic for getting an NFM-P template by name }
function getMdTemplate(templateName) { // logic for getting an MD template by name }