OMG

Exam OMG-OCSMP-MBA400

OMG-Certified Systems Modeling Professional - Model Builder – Advanced

Version: 4.0

[Total Questions: 90]

Question No : 1

Choose the coned answer.

A department director is responsible (or monitoring the system development processes in a large systems engineering company. In a few systems engineering projects, irritation developed recently between the specialists department's requirements analysts and the system engineering design team, although the methodology had been introduced a couple of years ago.

How could the director resolve this conflict?

A. Tell the teams' supervisors to encourage better teamwork, and check every other week to see how the teams have improved
B. Let each team decide on its individual development methodology. The teams' supervisors will have to budge gaps where they occur
C. Note if the systems engineering methodology still works with the company's business processes, and make modifications where needed
D. Repeat the methodology training tor the people involved and check every other week to see if the methodology usage by the teams is improving

Answer: C

Explanation: A systems engineering methodology is a collection of related processes, methods, and tools that support the discipline of systems engineering in a specific context. A systems engineering methodology should be aligned with the company's business processes and goals, and should be updated and improved as needed to reflect changes in the environment, technology, customer needs, etc. By noting if the systems engineering methodology still works with the company's business processes, and making modifications where needed, the director canresolve the conflict between the requirements analysts and the system engineering design team by ensuring that they follow a consistent and effective approach to systems engineering

Question No : 2

Choose the correct answer

A project is developing a distributed information system that will be "open" in the following ways.

(a) The system-level models will be published for the world to see.

(b) Others will be encouraged to submit change requests to the system models. (Changes will be identified by stereotypes.)

(c) Others will be encouraged to develop additional subsystems and plug-ins

The information system is expected to be in use for at least ten years

What is(are) the most important consideration(s) in selecting a SysML modeling tool for this project?

A. the ability to enforce strict compliance with XMI. AP233 and SysML standards
B. compatibility with XMI. the ability to enforce strict compliance with UML4SysML. and the ability to query models based on user-defined criteria
C. compatibility with XMI. the ability to enforce strict compliance with the SysML standard and the ability to query models based on user-
defined criteria
D. compatibility with AP233; the ability to enforce strict compliance with the SysML standard; and the ability to query models based on user-defined criteria

Answer: C

Explanation: These are the most important considerations in selecting a SysML modeling tool for this project because they ensure that the tool can support the openness and longevity of the distributed information system. XMI (XML Metadata Interchange) is a format specification that enables the interchange of objects and models through an XML formatted file. It is based on a metamodel that defines the mapping of MOF concepts to XML concepts. By having compatibility with XMI, the tool can import and export SysML models in terms of XML elements and attributes. This allows the tool to publish the system-level models for the world to see and to receive change requests from others in a standardized format. The tool can also use stereotypes to identify changes made by others. The SysML standard is an extension of the UML standard that defines a modeling language for systems engineering. It specifies the abstract syntax, semantics, and notation for SysML concepts and diagrams. By having the ability to enforce strict compliance with the SysML standard, the tool can ensure that the system-level models are consistent and interoperable with other tools and models that follow the same standard. The tool can also support others to develop additional subsystems and plug-ins using SysML concepts and diagrams. By having the ability to query models based on user-defined criteria, the tool can enable users to search and filter system-level models according to their needs and interests. The tool can also support visualization and analytics of system-level models using queries. References: https://www.omg.org/ocsmp/ocsmp-adv-exam.htmhttps://sysml.org/tutorials/sysml-diagram-tutorial/

Question No : 3

Choose the correct answer

How does SysML support systems engineering methodologies?

A. The generalization mechanism enables fitting of SysML to a methodology
B. The stereotype and profile mechanisms enable lilting of SysML to a methodology.
C. SysML can only support a systems engineering methodology if it is used at the starting point of the project
D. SysML does not support system engineering methodologies, as it is a language

Answer: B

Explanation: SysML is a general-purpose modeling language for systems engineering that can support various systems engineering methodologies. The stereotype and profile mechanisms are features of SysML that enable customizing and extending the language for a specific domain or purpose. By using stereotypes and profiles, SysML can be adapted to fit different methodologies and conventions without changing the core language semantics

Question No : 4

Choose the correct answer

The main diagram type in Modelica corresponds most closely to which SysML diagram type?
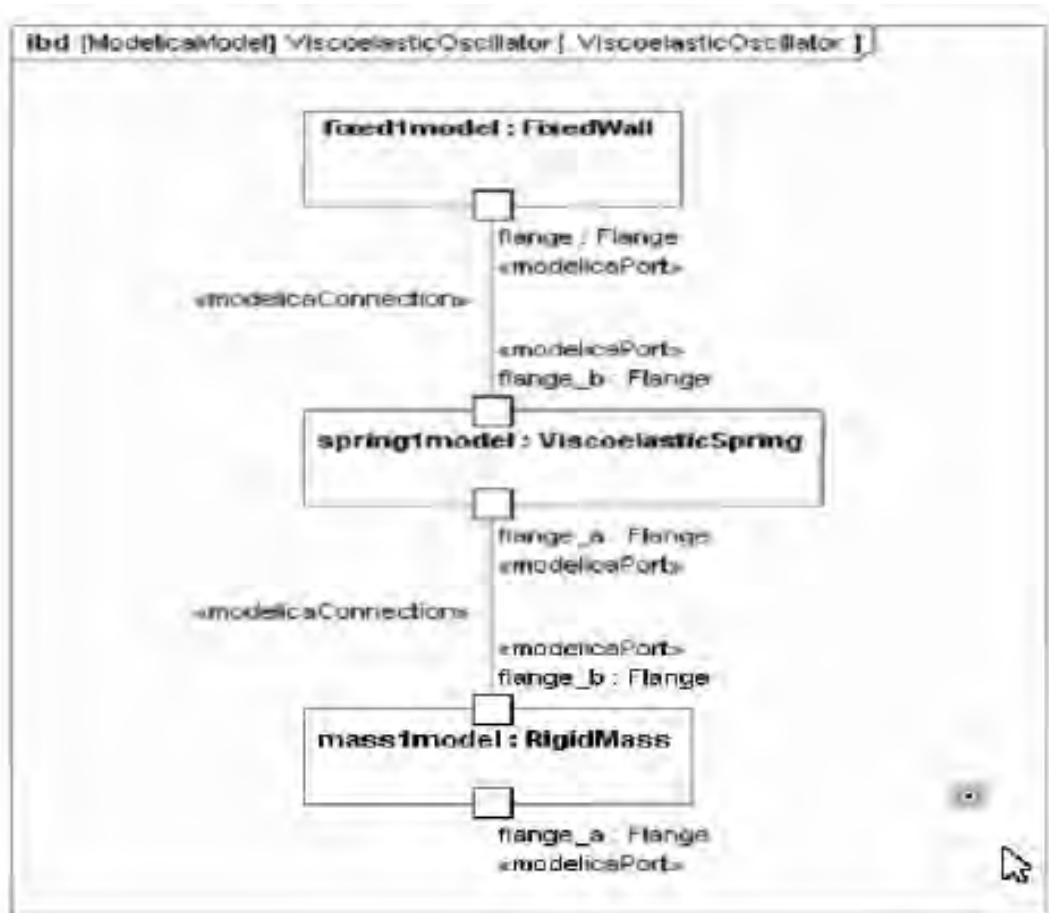
A. act
B. bdd
C. ibd
D. par

Answer: C

Explanation: The main diagram type in Modelica corresponds most closely to the ibd (internal block diagram) in SysML. An ibd shows the internal structure of a block in terms of its parts, ports, connectors, and flows. It is similar to a Modelica diagram, which shows the components of a model in terms of their connectors and equations. Both diagram types can be used to represent physical systems composed of interconnected elements with defined behaviors and properties. References: https://www.omg.org/ocsmp/ocsmp-adv-exam.htmhttps://modelica.org/documents/ModelicaSpec34.pdf

Question No : 5

Choose the correct answer.

Given the following diagram:

Assume that all stereotypes required by the SysML-Modehca Transformation specification (if any) have been applied but are not necessarily shown here Assume that FixedWall. ViscoelasticSpring. and RigidMass are fully defined in a Modelica library.

What else must be done to get this model ready for solving according to the SysML-Modelica Transformation specification?

A. Provide specific values. Also define a parametric diagram that includes equations for Kirchhoffs Laws consistent with the above ibd.
B. Provide specific values Nothing else is required, as Kirchhoff's I laws are automatically taken care of consistent with the above ibd
C. Nothing - it is ready as-is
D. Modelica cannot handle this type of nonlinear model

Answer: A

Explanation: To get this model ready for solving according to the SysML-Modelica Transformation specification, one must provide specific values for the parameters and properties of the blocks, such as resistance, capacitance, voltage, etc. Also, one must define a parametric diagram that includes equations for Kirchhoff's Laws consistent with the above ibd. A parametric diagram is a SysML diagram that shows constraints and

parameters on blocks and their properties. Kirchhoff's Laws are physical laws that describe how electric currents and voltages behave in a circuit. By defining a parametric diagram with these equations, one can specify how the blocks and connectors in the ibd are related mathematically. References: https://www.omg.org/ocsmp/ocsmp-adv-exam.htmhttps://www.omg.org/spec/SyM/1.0/About-SyM/

Question No : 6

Choose the correct answer

Which statement about working in UPDM compliance level 1 is true?

A. It allows users to express all the views in the architecture using only SysML elements
B. It allows users to bring SysML elements into the architecture to enhance the hand-off between Systems of Systems and Systems.
C. SysML elements are only used in the Systems view to enhance the hand-off process between Systems of Systems and Systems.
D. There is no benefit jas SysML is not used in compliance level 1

Answer: B

Explanation: Working in UPDM compliance level 1 allows users to bring SysML elements into the architecture to enhance the hand-off between Systems of Systems and Systems. Compliance level 1 is based on UML and SysML concepts and provides integration with system modeling using SysML. Users can use SysML elements, such as blocks, ports, connectors, parametrics, etc., to model system components and their interactions in more detail and precision than using UML elements alone. This can facilitate the transition from architecture modeling to system design and analysis. References: https://www.omg.org/ocsmp/ocsmp-adv-exam.htmhttps://www.ibm.com/docs/bg/rhapsody/8.3.1?topic=function-designing-updm-profiles

Question No : 7

Choose the correct answer

Modehca solvers can produce large volumes of time-based results (such as time-based power usage), but requirements are often based on scalar values such as "maximum peak power" and 'average power usage".

Which of the following is generally the most effective way to verify such requirements?

A. Import the Modelica time-based power usage results into SysML Then use SysML parametncs to calculate these scalar values, and compare them to the requirements
B. ave the Modelica solver also compute these scalar values from its time-based power usage results Then import the resulting scalar values into SysML. and compare them to the requirements.
C. Use the SysML4Modelica profile to transform the Modelica time-based power usage results into these scalar values Then import the resulting scalar values into SysML, and compare them to the requirements.
D. Modelica models can only produce time-based results and thus cannot support scalar results like these, which must either be calculated using a different tool or measured on physical prototypes Then enter the resulting scalar values into SysML, and compare them to the requirements

Answer: B

Explanation: The most effective way to verify such requirements is to have the Modelica solver also compute these scalar values from its time-based power usage results. Then import the resulting scalar values into SysML, and compare them to the requirements. This way, the verification can be done at the same level of abstraction as the requirements, and avoid unnecessary transformations or calculations in SysML. Modelica solvers can provide various functions and operators to compute scalar values from time-based results, such as max, min, mean, integral, etc. References: https://www.omg.org/ocsmp/ocsmp-adv-exam.htmhttps://modelica.org/documents/ModelicaSpec34.pdf

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Question No : 8

Choose the correct answer

An engineer wants to place formal pre-conditions and post-conditions on an activity diagram.

Which language is suitable and most compatible with SysML?

A. BPMN
B. English
C. OCL
D. OWL
E. VSL
F. XMI
G. XML

Answer: C

Explanation: OCL is the most suitable and compatible language for placing formal pre-conditions and post-conditions on an activity diagram. OCL is part of the UML standard and

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can be integrated withSysML without any conflicts or inconsistencies. OCL can express complex logical expressions that can check the state of the system before and after an activity is executed. BPMN is a business process modeling language that is not compatible with SysML. English is a natural language that may not be precise or unambiguous enough for formal specifications. OWL is a web ontology language that is not designed for modeling activities or constraints. VSL is a value specification language that can only express simple values and expressions. XMI and XML are markup languages that are used for exchanging models between tools, not for specifying constraints on models. References: OMG-Certified Systems Modeling Professional - Model Builder – Advanced (OCUP2-ADV) Examination Guide Version 1.0, Section 4.3

Question No : 9

Choose the correct answer

Which aspect of a MBSE-based engineering project falls outside of the scope of AP233?

A. diagrams
B. slate machines
C. lifecycle stages
D. issue management

Answer: A

Explanation: This aspect of a MBSE-based engineering project falls outside of the scope of AP233 because AP233 does not cover diagrams. AP233 (Application Protocol 233) is a standard that defines an information model for systems engineering. It specifies the concepts and relationships for representing systems engineering data, such as requirements, functions, properties, etc. AP233 does not define any notation or presentation for diagrams, such as SysML diagrams. AP233 only defines the serialization and deserialization of systems engineering data using XMI (XML Metadata Interchange) format. Therefore, AP233 does not address how to exchange diagrams between tools or how to visualize diagrams in different tools. References: https://www.omg.org/ocsmp/ocsmp-adv-exam.htmhttps://www.omg.org/spec/AP233/About-AP233/

Question No : 10

Choose the correct answer

The director of field support for a company just found out that one of the company's systems engineers is a Model Based Systems Engineering expert, and wants to discuss how MBSE might impact how the company's products are supported In the field

What is the most important aspect of system development methodologies the engineer Is likely to discuss?

A. how field support operations can be modeled using MBSE methods
B. how software design patterns can be used to suggest Pre Planned Product Improvement (P3I) opportunities
C. how the system model can be used to facilitate change proposals, support plans, and training in the operational environment
D. how operational evaluation (OPEVAL) plans can be developed and cross-checked In a system modeling environment, using DoDAF operational views

Answer: C

Explanation: The most important aspect of system development methodologies that the engineer is likely to discuss with the director of field support is how the system model can be used to facilitate change proposals, support plans, and training in the operational environment. The system model can provide a consistent and comprehensive view of the system's structure, behavior and performance throughout its lifecycle, and can help identify and evaluate potential changes, improvements or issues in the field. The system model can also help document and communicate the support requirements, procedures and resources for the system's operation and maintenance. The system model can also help design and deliver effective training programs for the system's users and operators. How field support operations can be modeled using MBSE methods, how software design patterns can be used to suggest Pre Planned Product Improvement (P3I) opportunities, and how operational evaluation (OPEVAL) plans can be developed and cross-checked in a system modeling environment are less important aspects of system development methodologies that may not be relevant or applicable to the director of field support's concerns. References: OMG-Certified Systems Modeling Professional - Model Builder – Advanced (OCUP2-ADV) Examination Guide Version 1.0, Section 4.5

Question No : 11

Choose the correct answer

A bank manager and his core team want to consolidate internal processes, detect conflicts among processes, and improve customer experience. The core team includes the lead person from each of the process areas (such as transactions, customer management, and marketing). The manager wants to architect the overall system processes based on the following.

(1) Relationships among the internal processes should be clearly identifiable and managed.

(2) The core team members should be able to improve their processes simultaneously.

(3) The architecture should aid visualization and analytics

Which model organization approach would be most efficient?

A. create a SysML model for each of the core processes and for each relationship between processes
B. create a SysML model that contains only one diagram showing all the core processes and their relationships
C. create a SysML model for each of the core processes, and manage relationships between processes in a spreadsheet
D. create a SysML model that contains a package for each of the core processes, and a package for the overall consolidated process and related relationships
E. create a SysML model that contains a package for each of the core processes, a package for each of the relationships between processes, and a package for the overall consolidated process

Answer: E

Explanation: This model organization approach would be most efficient because it allows the bank manager and his core team to modularize and structure their system processes using SysML packages. A package is a grouping mechanism that can contain any kind of model element, such as diagrams, blocks, activities, etc. By creating a package for each of the core processes, the team members can work on their own processes independently and concurrently. By creating a package for each of the relationships between processes, the team can identify and manage the dependencies and interactions among the processes. By creating a package for the overall consolidated process, the team can have a holistic view of the system and perform visualization and analytics using SysML diagrams and parametrics. References: https://www.omg.org/ocsmp/ocsmp-adv-exam.htmhttps://sysml.org/tutorials/sysml-diagram-tutorial/

Question No : 12

Choose the correct answer

What information is required to define a viewpoint in SysML in addition to stakeholders?

A. affects, methods, process purpose
B. concerns, languages, methods, purpose
C. concerns languages, tools, purpose
D. methods, languages, rationale, responsibilities

Answer: B

Explanation: The information that is required to define a viewpoint in SysML in addition to stakeholders is concerns, languages, methods, and purpose. Concerns are aspects of interest about a system that are addressed by a viewpoint. Languages are notations or modeling techniques used by a viewpoint to represent a view. Methods are processes or guidelines for constructing or interpreting views that conform to a viewpoint. Purpose is an explanation of why and how a viewpoint addresses stakeholder concerns. References: https://www.omg.org/ocsmp/ocsmp-adv-exam.htmhttps://www.omg.org/spec/SysML/1.6/PDF

Question No : 13

Choose the correct answer

What distinguishes a software development methodology from a systems development methodology?

A. All current systems development methodologies are extensions of previous software development methodologies.
B. Software development methodologies employ formal architecting techniques, while systems development methodologies tend not to.
C. Systems development methodologies tend to focus on holistic issues, while software development methodologies tend to focus on high quality code.
D. For software intensive systems, there is effectively no difference between system development methodologies and software development methodologies
E. There is no difference Any methodology good for software development should be good for systems development.

Answer: C

Explanation: The main difference between software development methodologies and systems development methodologies is that software development methodologies tend to focus on high quality code, such as functionality, reliability, performance and maintainability, while systems developmentmethodologies tend to focus on holistic issues, such as stakeholder needs, system boundaries, interfaces, trade-offs and lifecycle management. Software development methodologies are usually applied to software-intensive systems or subsystems, while systems development methodologies are usually applied to complex systems that involve multiple disciplines and domains. It is not true that all current systems development methodologies are extensions of previous software development methodologies, as some systems development methodologies have different origins and foundations. It is not true that software development methodologies employ formal architecting techniques, while systems development methodologies tend not to, as

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both types of methodologies can use different levels of formality and rigor in their architecting approaches. It is not true that for software intensive systems, there is effectively no difference between system development methodologies and software development methodologies, as software intensive systems still require a broader and deeper perspective than software development methodologies can provide. It is not true that there is no difference between any methodology good for software development and any methodology good for systems development, as different types of systems may require different types of methodologies that suit their characteristics and challenges. References: OMG-Certified Systems Modeling Professional - Model Builder – Advanced (OCUP2-ADV) Examination Guide Version 1.0, Section 4.5
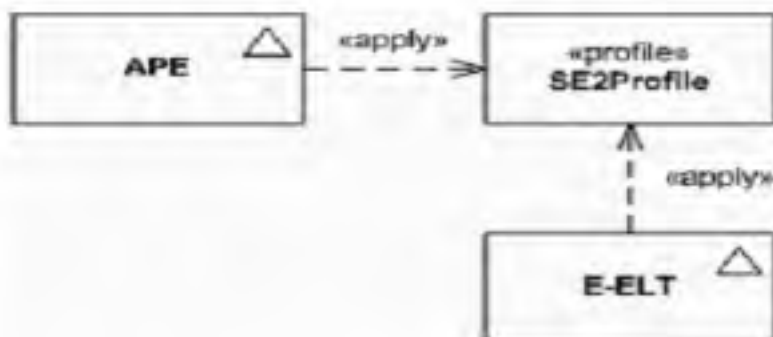
Question No : 14
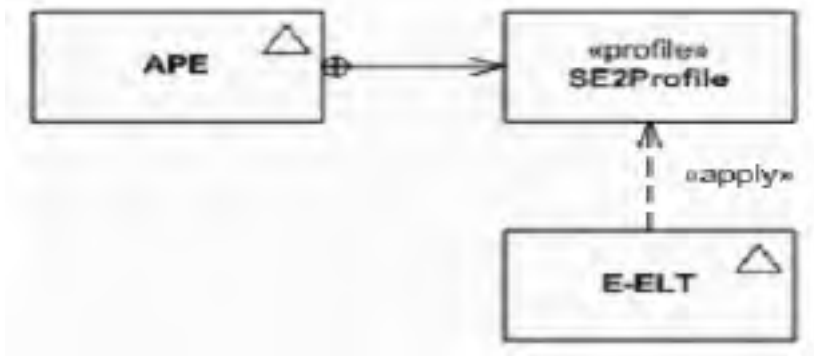
Choose the correct answer.

An engineer has defined a profile, SE2Profile, for the APE model. Another model, E-ELT, requires the same profile.
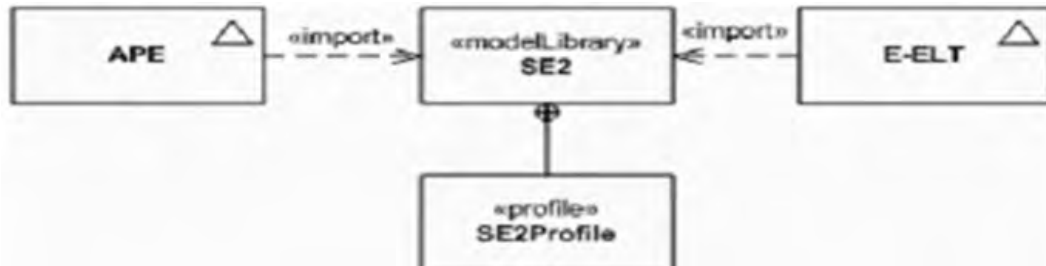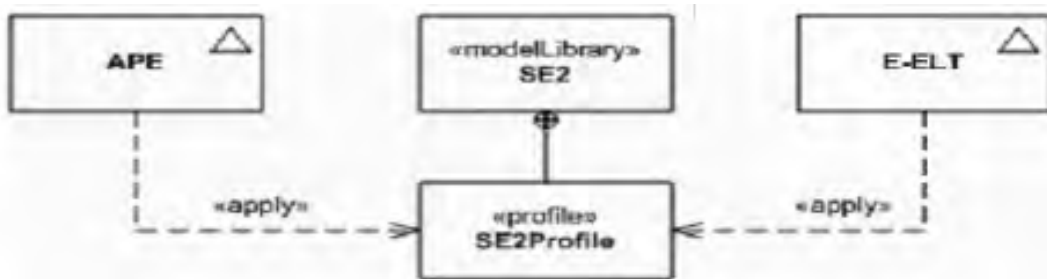
What is the best way to share the profile?

A)

B)

C)

D)

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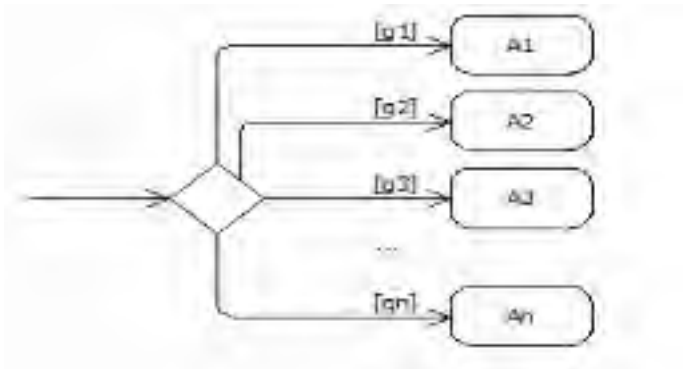**B.** Option B
C. Option C
D. Option D

Answer: B

Explanation: The best way to share the profile is to define it as a model library and import it into the other model. A model library is a package with the stereotype <<modelLibrary>> applied to it. It contains reusable model elements that can be imported into other models by using an «import» relationship. Option B shows this approach. References:
https://www.omg.org/ocsmp/ocsmp-adv-
exam.htmhttps://www.omg.org/spec/SysML/1.6/PDF

Question No : 15

Choose the correct answer.

Given the following diagram fragment:

Which criterion indicates that a decision node construct such as this is well-formed?

A. No activity Ai will negate the corresponding guard [gi]
B. Taken together, the guards cover all possibilities and are mutually exclusive.
C. Each guard legal can be evaluated without changing the state of any item referenced by the corresponding activity or action Ai
D. The guards are understandable by stakeholders in the development effort.

Answer: B

Explanation: A decision node is a construct in SysML that represents a branching point in an activity diagram where alternative paths are chosen based on some conditions. The guards are expressions that specify the conditions for each outgoing edge from the decision node. A criterion that indicates that a decision node construct is well-formed is that the guards cover all possibilities and are mutually exclusive, meaning that for any input value, exactly one guard evaluates to true and all others evaluate to false. This ensures that there is no ambiguity or conflict in choosing the next path in the activity.

Question No : 16

Choose the correct answer

Which SysML diagram type is a modification of the UML Class diagram?

A. Parametric Diagram
B. Internal Block Diagram
C. Package Diagram
D. Block Definition Diagram

Answer: D

Explanation: The SysML diagram type that is a modification of the UML Class diagram is

the Block Definition Diagram (BDD). A BDD shows the definition of blocks in terms of their features, such as properties, operations, ports, etc. It is similar to a UML Class diagram, but it adds some features specific to SysML, such as value types, units, flow properties, etc. A block is an extension of the UML Class metaclass that can be used to model any system component with structure and behavior. References: https://www.omg.org/ocsmp/ocsmp-adv-exam.htmhttps://sysml.org/tutorials/sysml-diagram-tutorial/

Question No : 17

Choose the correct answer

What is a fundamental goal of UPDM?

A. to define a common means of expressing DoDAF and MODAF architectures using the same underlying metamodel
B. to capture the common aspects of MODAF and DoDAF elements, removing the elements and views that are not common
C. to define a common means of expressing DoDAF and MODAF architectures so that they can be modeled solely in SysML
D. to separate the DoDAF and MOOAF metamodels but give them a common underpinning by creating a separate UML profile for each of them within UPDM

Answer: A

Explanation: A fundamental goal of UPDM is to define a common means of expressing DoDAF and MODAF architectures using the same underlying metamodel. UPDM is a UML profile that supports both DoDAF and MODAF, which are two main architectural frameworks used in the defense domain. UPDM provides a common set of elements and relationships that can be used to represent architectures in either framework, using a Domain Metamodel that captures the core concepts of both frameworks. UPDM also provides mappings to UML and SysML concepts to enable implementation and integration with other modeling languages and tools. References: https://www.omg.org/ocsmp/ocsmp-adv-exam.htmhttps://www.omg.org/updm/

Question No : 18

Choose the correct answer.

A project is evaluating several modeling tools which comply in vanous degrees to SysML abstract and concrete syntax The customer will allow some deviation from full compliance,

as long as technical risk is minimized.

Which tool characteristics are required for this project?

A. full compliance with abstract syntax, and limited deviations from concrete syntax
B. full compliance with concrete syntax, and limited deviations from abstract syntax
C. limited deviations from abstract and concrete syntax
D. full compliance with both abstract and concrete syntax, nothing less is adequate

Answer: A

Explanation: This tool characteristic is required for this project because it ensures that the modeling tool follows the SysML abstract syntax, which defines the metamodel elements and their semantics. The abstract syntax is essential for ensuring consistency and interoperability between different tools and models. The concrete syntax, which defines the notation and presentation of the elements, can have some deviations as long as they do not affect the meaning or interpretation of the model. For example, a tool can use different colors or shapes for some elements without changing their semantics. References: https://www.omg.org/ocsmp/ocsmp-adv-exam.htmhttps://sysml.org/docs/specs/OMG_SysML_1.6.pdf

Question No : 19

Choose the correct answer

Which technique is typically used to support the automated generation of development artifacts from a SysML model?

A. Define simple structures for artifacts and avoid complex layouts for office documents
B. Apply stereotypes to model elements to add the metainformation required for the generation process.
C. Adapt open-source model transformation tools originally developed for the software engineering discipline
D. SysML already includes a concept for model-driven generation of office documents

Answer: B

Explanation: A common technique for supporting the automated generation of development artifacts from a SysML model is to apply stereotypes to model elements to add the metainformation required for the generation process. Stereotypes can define tagged values that specify additional information about model elements, such as document templates, formatting options, traceability links, etc. These tagged values can be used by model transformation tools or scripts to generate artifacts from the model. References: https://www.omg.org/ocsmp/ocsmp-adv-

exam.htmhttps://docs.nomagic.com/display/SYSMLP190/Libraries+and+profiles

Question No : 20

Choose the correct answer

What is a common reason for extending SysML with a profile?

A. SysML requires the definition of a profile
B. A profile adds methodology- and domain-specific concepts to SysML.
C. A profile adds user-specific needs to the model in a systems engineering project
D. A profile overwrites unwanted SysML concepts and tool-vendor-specific extensions

Answer: B

Explanation: A profile is a mechanism for extending SysML with additional modeling elements that are not part of the standard language. A profile can add methodology- and domain-specific concepts to SysML, such as stereotypes, tagged values, constraints, etc. These concepts can be used to tailor SysML to specific engineering domains or modeling methods. References: https://www.omg.org/ocsmp/ocsmp-adv-exam.htmhttps://www.ibm.com/docs/SSB2MU_8.2.0/com.ibm.rhp.sysml.doc/topics/rhp_c_dm_sysml_profile_features.html

Question No : 21

Choose the correct answer

A large company uses SysML to design energy systems, and plans to use a specialized proprietary analysis tool (X) for evaluating and comparing the cost, performance, and reliability of energy system alternatives The engineers at the company want to automatically create analysis models in X from design models in SysML.

The achieve this, they will use the following process:

(1) Specify the appropriate module in X10 be used for each block m the SysML design model.

(2) Write scripts that use these mappings to automatically create analysis models in X

Which approach is most flexible when enabling this automation?

A. define a package that contains a note for each type of module in X. and anchor notes to the blocks in the design model
B. define a profile that contains a stereotype for each type of module m X. and assign the stereotype to the blocks in lite design model
C. define a profile that contains a tag for each type of X in the tool, and assign the stereotype to the blocks in the design model
D. define a profile that contains a stereotype with a tag that can store the name of the module in X. apply the stereotype to the blocks in the design model, and populate the tag
E. define a package that contains a block for each type of module m X (e g module_1 block) and create a dependency relationship from the module block to the blocks in the design model

Answer: D

Explanation: A profile is a mechanism for customizing SysML for a specific domain or purpose. A stereotype is a way of extending or modifying the semantics of a SysML element. A tag is an attribute of a stereotype that can store additional information. By defining a profile that contains a stereotype with a tag that can store the name of the module in X, the engineers can easily map the blocks in the design model to the corresponding modules in X, and use scripts to automate the creation of analysis models. This approach is more flexible than using notes, dependencies, or predefined tags, because it allows for more control and consistency over the mapping proces

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Question No : 22

Choose the correct answer

For a system with stringent real-time requirements and power-consumption constraints, which concern would lead the designer to employ the MARTE profile?

A. ensuring traceability between structure and behavior
B. ensuring traceability between requirements and structure
C. ensuring that the structure could be precisely modeled and that analysis was supported
D. ensuring that the relationship between system response time and power consumption could be captured in a parametric diagram

Answer: A

Explanation: For a system with stringent real-time requirements and power-consumption constraints, the concern that would lead the designer to employ the MARTE profile is ensuring that the structure could be precisely modeled and that analysis was supported.

MARTE provides concepts and annotations for modeling the structure of real-time and embedded systems in terms of components, ports, connectors, flows, etc., as well as for modeling their behavior in terms of state machines, activities, etc. MARTE also provides concepts and annotations for performing analysis of system properties, such as schedulability, performance, power consumption, etc., using various methods and tools. References: https://www.omg.org/ocsmp/ocsmp-adv-exam.htmhttps://www.omg.org/spec/MARTE/1.2/About-MARTE/

Question No : 23

Choose the correct answer.

What is one of the most common reasons to utilize a SysML-Modehca integration?

A. to solve and analyze system advanced statistics models
B. to solve and analyze system dynamics models
C. to execute and analyze system activity models
D. to execute and analyze system state machine models

Answer: B

Explanation: One of the most common reasons to utilize a SysML-Modelica integration is to solve and analyze system dynamics models. Modelica is a language for modeling complex physical systems based on equations and components. SysML is a language for modeling complex systems based on diagrams and textual notations. By integrating SysML and Modelica, system dynamics models can be defined in SysML using parametric diagrams and constraint blocks, and then solved and analyzed using Modelica tools and solvers. References: https://www.omg.org/ocsmp/ocsmp-adv-exam.htmhttps://modelica.org/publications/newsletters/2011-1/index_html#sysml-modelica-integration

Question No : 24

Choose the correct answer

What happens to the elements of a model when a profile is applied to the model?

A. The stereotypes defined in the profile are applied to the model's metamodel elements
B. The stereotypes defined in the profile are available to be applied to any element in the model.
C. The stereotypes defined in the profile may be applied to elements sharing compatible

metaclasses

D. The stereotypes defined in the profile ate automatically applied lo the elements sharing compatible metaclasses

Answer: C

Explanation: A profile is a mechanism for extending the UML or SysML metamodel with domain-specific concepts. A profile defines stereotypes, which are extensions of existing metaclasses. A metaclass is a modeling construct that defines the properties and behavior of a set of model elements. For example, the metaclass Class defines the properties and behavior of all classes in a model. When a profile is applied to a model, the stereotypes defined in the profile may beapplied to elements sharing compatible metaclasses. For example, if a profile defines a stereotype <<device>> as an extension of the metaclass Class, then the stereotype <<device>> may be applied to any class in the model. References: https://www.omg.org/ocsmp/ocsmp-adv-exam.htm https://www.omg.org/spec/UML/About-UML/https://www.omg.org/spec/SysML/About-SysML/

Question No : 25

Choose the correct answer.

A modeling team supervisor has defined a stereotype of block named *projectBlock» and wants to prevent any use of an unstereotyped block

What must the supervisor do?.

A. delete «block» from the profile
B. give * blocks the (abstract) keyword in the profile
C. mark the extending stereotype with the {strict} keyword
D. mark the extending stereotype with the {required} keyword
E. attach a note to «block» in the profile forbidding its use

Answer: C

Explanation: To prevent any use of an unstereotyped block, the supervisor must mark the extending stereotype with the {strict} keyword. This keyword indicates that only elements with this stereotype can be created as instances of the extended metaclass. In this case, only blocks with the stereotype <<projectBlock>> can be created as instances of Block. References: https://www.omg.org/ocsmp/ocsmp-adv-exam.htmhttps://www.ibm.com/docs/SSB2MU_8.2.0/com.ibm.rhp.sysml.doc/topics/rhp_c_dm_sysml_profile_features.html