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Autosar Interview Questions

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Q1. What is AUTOSAR?

AUTOSAR (Automotive Open System Architecture) is an open and standardized automotive software architecture that is developed by automobile manufacturers, suppliers, and tool developers. The AUTOSAR enables the use of a component-based software design model for the design of a vehicular system.

Q2. What is the full form of AUTOSAR?

The full form of the AUTOSAR is Automotive Open System Architecture.

Q3. What is AUTOSAR ECU?

AUTOSAR ECU is used to create and establish an open and standardized software architecture for automotive electronic control units (ECUs). It has some goals such as scalability to different vehicle and platform variants, transferability of software, the consideration of availability and safety requirements, a collaboration between various partners, sustainable use of natural resources, and maintainability during the whole product lifecycle. AUTOSAR Architecture was introduced to promote standardization in the software development process of Automotive Electronic Control Units (ECU).

Q4. List some uses of AUTOSAR?

AUTOSAR is used for providing intrinsic advantages to the associates to handle more complex electrical and electronic systems in a vehicle like simple integration, switch the functions within complex engine control (ECU) network & to control over the lifecycle of the whole product. It is also used for microcontrollers which target applications mostly in automotive space which utilizes CAN, Flex Ray, Ethernet, etc. Being used in applications based on microcontrollers, it is developed with a view to using the least memory possible as microcontrollers have resource constraints.

Q5. What is ComStack?

ComStack stands for Communication Stack. In the AUTOSAR layered architecture, Communication Stack or ComStack facilitates vehicle network communication. In other words, ComStack can be defined as a software stack that provides communication services to the basic software modules and application Layer/application Software. AUTOSAR Communication Stack is a part of the BSW (Basic Software).

A typical AUTOSAR Communication Stack has its modules in three sub-layers as follows:
1. Services Layer
2. ECU Abstraction Layer
3. MCAL

Q6. Explain the AUTOSAR architecture?

AUTOSAR architecture is accepted as the world wide standard for automotive basic software specification. It supports the development of global automotive software products. AUTOSAR helps in managing product modifications, reliable upgrades, reusability and scalability in software development.

Q7. What is AUTOSAR meta model?

The AUTOSAR metamodel is a UML2.0 model. The UML2.0 model defines the language for describing AUTOSAR systems and related artifacts. It is also a graphical representation of a template sometimes known as class diagram. UML2.0 is used to describe the attributes and their interrelationships.

Q8. What is AUTOSAR MCAL?

In the context of embedded software, **MCAL(Microcontroller Abstraction Layer)** is a software module that has direct access to all the on-chip MCU peripheral modules and external devices, which are mapped to memory. It enables a very significant advantage of the layered architecture of the AUTOSAR-compliant design.

Q9. What is basic software in AUTOSAR?

Basic Software is the standardized software layer. It provides services to the AUTOSAR Software Components that are necessary to run the functional part of the software. It does not fulfill any functional job itself and is situated below the AUTOSAR RTE (Runtime Environment).

Q10. What is CAN? Explain its uses?

The AUTOSAR CAN Network Management is a hardware-independent protocol tool that can only be used on the CAN network. It coordinates the transition between normal operation and bus-sleep mode of the network.

Q11. What is the role of RTE in AUTOSAR?

AUTOSAR RTE is the Run-Time Environment (RTE) that is the heart of the AUTOSAR ECU architecture. It provides the infrastructure services that enable communication between AUTOSAR software components. It is acting as the means by which AUTOSAR software-components access basic software modules including the OS and communication service.

Q12. What is AUTOSAR Blockset?

AUTOSAR Blockset provides an AUTOSAR editor, dictionary, and blocks for developing Classic Platform as well as blocks and constructs for Basic Software services, including NVRAM Manager and Diagnostics Event Manager, for simulating the BSW services together with your application software model. AUTOSAR editor helps to define AUTOSAR software component properties, interfaces, and data types, and map them to existing Simulink models. It allows you to scale your atomic software components to composition software components and to ECUs.

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