Model-Based Development (MBD) in the Automotive Industry Quiz

Total points   16/21   ?

The respondent's email (**amlali98eg@gmail.com**) was recorded on submission of this form.

✗   **Name** *   ···/1

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✓   **What does MBD stand for in the context of software development?** *   1/1

○ A) Model-Based Deployment

○ B) Manual-Based Design

◉ C) Model-Based Development   ✓

○ D) Machine-Based Debugging

✓   **What do models represent in Model-Based Development?** *   1/1

○ A) System cost

○ B) Hardware specifications

◉ C) System behavior   ✓

○ D) Production timelines

✓ Which tier of suppliers provides complete systems or major components *1/1
directly to OEMs?

◉ A) Tier 1 suppliers ✓

◯ B) Tier 2 suppliers

◯ C) OEMs

◯ D) Tier 3 suppliers1

✓ What is the primary focus of Model-Based Development (MBD)? * 1/1

◯ a) Writing code directly

◉ b) Creating mathematical models ✓

◯ c) Designing hardware components

◯ d) Manufacturing physical prototypes

✓ How does MBD generate system code? * 1/1

◯ a) Manually, by writing code line by line

◉ b) Automatically, from the mathematical models ✓

◯ c) By assembling physical components

◯ d) Through handwritten specifications

✓ In which industry is Model-Based Development increasingly popular? *   1/1

○ a) Healthcare

○ b) Aerospace

◉ c) Automotive   ✓

○ d) Agriculture

✓ How does MBD contribute to reducing time-to-market? *   1/1

○ a) By increasing development complexity

○ b) By skipping testing phases

◉ c) By automating code generation   ✓

○ d) By avoiding error detection

✓ What advantage does MBD offer in terms of error detection? *   1/1

○ a) It introduces errors in the development process

○ b) It detects errors only after product release

◉ c) It ensures early error detection   ✓

○ d) It doesn't focus on error detection

✕   What does OEM stand for in the context of the automotive industry? *   0/1

  ⦿ a) Original Engine Manufacturers   ✕

  ○ b) Original Equipment Manufacturers

  ○ c) Original Electrical Manufacturers

  ○ d) Original Exhaust Manufacturers

Correct answer

  ⦿ b) Original Equipment Manufacturers

✓   What is the primary role of Tier 1 suppliers in the automotive industry? *   1/1

  ○ a) Assemble vehicles

  ○ b) Produce generic parts

  ○ c) Manufacture components for Tier 2 suppliers

  ⦿ d) Provide complete systems or major components to OEMs   ✓

✕   How do Tier 1 suppliers' components typically integrate into the vehicle   *0/1
     assembly process?

○   a) They require extensive modifications.

○   b) They are plug-and-play and seamlessly integrate.

○   c) They are discarded during assembly.

◉   d) They need custom adapters for integration.   ✕

Correct answer

◉   b) They are plug-and-play and seamlessly integrate.

✓   What software development methodology does Model-Based   *1/1
     Development (MBD) follow?

○   a) Agile

◉   b) V-shaped   ✓

○   c) Waterfall

○   d) Scrum

✗   What is the initial phase in the MBD process? *   0/1

○ a) Code generation

○ b) Model development

◉ c) Requirement gathering and analysis   ✗

○ d) Integration testing

Correct answer

◉ b) Model development

✓   How does MBD differ from manual C coding? *   1/1

○ a) MBD uses a waterfall approach.

○ b) MBD starts with requirement maturation.

○ c) MBD emphasizes code over models.

◉ d) MBD involves auto-generation of code from the model.   ✓

✓   At which stage in MBD does testing occur? *   1/1

○ a) Only at the beginning

○ b) Only at the end

◉ c) At every step in an iterative approach   ✓

○ d) Never

✓ What does MBD aim to identify and resolve before progressing to the   *1/1
next step?

○ a) Hardware issues

○ b) Code optimization

◉ c) Bugs and errors   ✓

○ d) Integration challenges

✓ What is one advantage of MBD in the hardware development phase? *   1/1

○ a) It increases the need for costly prototypes.

○ b) It requires extensive field testing.

◉ c) It reduces the need for costly prototypes.   ✓

○ d) It prolongs the development timeline.

✓ How can successful MBD trials impact other project areas? *   1/1

○ a) By requiring complete project overhauls

◉ b) By extending models to other project areas   ✓

○ c) By leading to frequent project failures

○ d) By increasing the cost of development

✕   What valuable information do the results of MBD simulations provide? *   0/1

◉   a) Marketing insights   ✕

○   b) Legal documentation

○   c) Hardware design parameters

○   d) Project management reports

Correct answer

◉   c) Hardware design parameters

✓   What is one benefit of storing MBD models for future use? *   1/1

○   a) It reduces the need for testing.

○   b) It eliminates the need for documentation.

○   c) It facilitates collaboration with competitors.

◉   d) It can be reused in different development projects.   ✓

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