Online Exam Questions

RESCUE 1st Winter Workshop

Dec 11, 2017

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Exam code: **E625**

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TT-I (M. Schölzel) - 1: What are the means for improving the system dependability? Explain them briefly!

TT-I (M. Schölzel) - 2: Consider a professor that has to give a tutorial, but gets a cold. Explain the terms fault, error, failure using this example!

TT-I (M. Schölzel) - 3: Give the elementary fault classes to which a hardware bug in a processor belongs.

TT-II (S. Hamdioui) - 1: What are the possible means that can be used to extend the lifetime of electronics as their lifetime becomes shorter with smaller technology nodes? What are the best three means that you recommend to use? Justify your answers.

TT-II (S. Hamdioui) - 2: What are the possible means that can be used to reduce the failure rate of electronics (ICs) as this increases with technology scaling? What are the best three means that you recommend to use? Justify your answers.

TT-III (M. Sonza Reorda) - 1: What is the purpose of test? What is the difference between test and diagnosis?

TT-III (M. Sonza Reorda) - 2: You are requested to summarize what burn-in is and why it is used.

TT-III (M. Sonza Reorda) - 3: What is Design for Testability and why is it used? Please provide some examples of DfT.

TT-V (H.T. Vierhaus) - 1: What is the main difference in requirements between production testing and on-line testing?

TT-V (H.T. Vierhaus) - 2: Which are the standard methods for on-line error detection / correction?

TT-V (H.T. Vierhaus) - 3: What is the main reason for transient faults / errors in hardware?

TT-VI (J. Raik) - 1: List the main advantages and limitations of simulation-based and formal verification.

TT-VI (J. Raik) - 2: What is the difference between verification, validation and manufacturing testing?

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TT-VII (G. Selimis) - 1: Name the main factors that have impact on the stability of SRAM PUF.

TT-VII (G. Selimis) - 2: Name two types of PUF technology.

TT-VIII (M. Krstic) - 1: Name and explain one low-power technique which goes beyond the margins of the worst case timing. What are the advantages and disadvantages of such technique?

TT-VIII (M. Krstic) - 2: What are the limits of the utilization of standard low-power techniques in space applications?

TT-VIII (M. Krstic) - 3: What we can consider as resilience of the electronic systems?

TT-IX (P. Langendörfer) - 1: Name the most important security properties and explain how they can be ensured by cipher.

TT-IX (P. Langendörfer) - 2: Explain in your own words why mathematically secure cipher means can be broken.

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