Question 1 0.75 / 1 point

The authors (Michael W. Godfrey and Daniel M. German) provide their own interpretation of Lehman's Laws. Mark all the options that characterize their interpretation.

Select 4 correct answer(s)

- [ ] Self-regulation is a consequence of the conservation of organization stability.
- [x] Software must grow in fixed increments or else developers run the risk of losing understanding of the system.
- [x] Law 8, about feedback system, being so relevant and pervading the other laws, should have been the first law to be stated.
- [ ] Additional effort to manage growth in complexity is not capable to reduce the declining quality of software systems.
- [x] Continuing change of software systems is a result that may be derived from Law 8 (feedback system), and software's continuing growth can be seen as a direct consequence of continuing change.
- [ ] Changes required in software system evolution to respond to the pressures of the feedback system may lead to increasing complexity and declining quality.
- [x] Software systems' continuing change can be seen as a direct consequence of its continuing growth.

Question 2 1 / 1 point

In the paper, the authors (Michael W. Godfrey and Daniel M. German) describe limitations of Lehman's Laws in the context of the emergence of software architecture. Mark all the options where they assert those limitations.

Select 2 correct answer(s)

- [x] When internal interfaces emerge, the complexity of a software system is probably not a simple sum of the size of its components.
- [x] Lehman's models are typically based on absolute numbers to measure effort, size and complexity, but software systems evolution analysis requires more sensitive models that are better tuned to software design.
- [ ] The growth of device drivers in the Linux kernel that use a narrow interface make it clear that their internal complexity affects the general complexity of the rest of the Linux system.
- [ ] Even though interfaces may be well designed, they are not capable of lessening the amount of knowledge that developers must understand about other parts of the system.

Question 3 1 / 1 point

In the paper, the authors (Michael W. Godfrey and Daniel M. German) describe limitations of Lehman's Laws in the context of the demonolithization of software systems. Mark all the options where they assert those limitations.

Select 2 correct answer(s)

- [x] The complexity of contemporary software development may not be captured by traditional software metrics.
- [ ] Contemporary software systems are designed as monoliths, which is different from the way they were done in the past.
- [x] Contemporary software systems are immersed in an environment of software reuse that makes software development less about writing source code than other tasks of understanding, specification and evaluation.
- [ ] Empirical models must recognize that relevant factors such as software complexity may be measure easily.

Question 4 1 / 1 point

In the paper, the authors (Michael W. Godfrey and Daniel M. German) describe limitations of Lehman's Laws in the context of open source development and agile processes. Mark all the options where they assert those limitations.

Select 2 correct answer(s)

- [ ] The reuse of open source systems in modern software requires changes to current source code size metrics, having them explicitly adding the source code library size to the final software system size in the context of software evolution.
- [x] Adapting an open source software system instead of developing a system from scratch makes it hard to measure some characteristics of a product (used in traditional software metrics).
- [x] Contemporary industrial software developers embrace the development of open source software system, reusing them as part of their own systems, which makes the current measures of developer effort limited.
- [ ] Lehman's laws are only valid in the context of big design up front such as waterfall-like supporting processes.

Question 5 0 / 1 point

In the paper, the authors (Michael W. Godfrey and Daniel M. German) describe Manny Lehman's background as instrumental in his creation of the laws of software evolution. Mark all the options where they assert such elements of his background.

Select 2 correct answer(s)

- [ ] Lehman's experience as developer of civilian radio software.
- [x] Lehman's experience as developer of IBM S/360 and IBM S/370 operating systems.
- [x] Lehman's background as a student of one of the first software engineering programs in the world, at Imperial College London.
- [ ] Lehman's engineering background, which allowed him to view software from a non-programmer's point of view.
- [ ] Lehman's investigation of programming practices at IBM.