



UNIVERSITY OF COLOMBO, SRI LANKA

UNIVERSITY OF COLOMBO SCHOOL OF COMPUTING

DEGREE OF BACHELOR OF INFORMATION TECHNOLOGY (EXTERNAL)

Academic Year 2008/2009 – 2nd Year Examination – Semester 3

IT3203 Software Engineering 1
PART 1 - Multiple Choice Question Paper

21st March, 2009
(ONE HOUR)

Important Instructions:

- The duration of the paper is 1 (one) hour.
- The medium of instruction and questions is English.
- The paper has 25 questions and 6 pages.
- All questions are of the MCQ (Multiple Choice Questions) type.
- All questions should be answered.
- Each question will have 5 (five) choices with one or more correct answers.
- All questions will carry equal marks.
- There will be a penalty for incorrect responses to discourage guessing.
- The mark given for a question will vary from 0 to +1 (All the correct choices are marked & no incorrect choices are marked).
- Answers should be marked on the special answer sheet provided.
- Note that questions appear on both sides of the paper.
If a page is not printed, please inform the supervisor immediately.
- Mark the correct choices on the question paper first and then transfer them to the given answer sheet which will be machine marked. Please completely read and follow the instructions given on the other side of the answer sheet before you shade your correct choices.

- 1) Consider the following comment. "The software which I bought won't run on windows and when it runs I can't use WORD at the same time". Which of the following do you think are violated by the newly bought software?
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|---|
| (a) dependability
(b) platform independence
(c) reliability
(d) interoperability
(e) safety |
|---|
- 2) Which of the following are ethical issues which a software engineer should think about in his professional carrier?
- | | | |
|--------------------------------------|---|-----------------|
| (a) confidentiality
(d) usability | (b) portability
(e) intellectual property rights | (c) reliability |
|--------------------------------------|---|-----------------|
- 3) Windows mobile is a popular mobile operating system which seen commonly on PDAs. Which of the following category pair(s) best describe(s) it?
- | |
|--|
| (a) application software, embedded software
(b) system software, web-based software
(c) application software, scientific software
(d) system software, embedded software
(e) embedded software, web-based software |
|--|
- 4) Which of the following is a/are software products which is suitable for an agile process?
- | |
|--|
| (a) a user interface for an iPod
(b) a word processor for the blind
(c) life support system
(d) missile guidance system
(e) virtual reality game |
|--|
- 5) Which of the following are constituents of extreme programming?
- | |
|---|
| (a) pair programming
(b) simple design
(c) risk analysis
(d) formal transformation
(e) prototypes |
|---|
- 6) Which of the following represent a correct ordering of the stages of the Rational Unified process (RUP)?
- | |
|--|
| (a) inception, transition, elaboration, production, construction
(b) elaboration, transition, construction, inception, production
(c) inception, elaboration, construction, transition, production
(d) production, elaboration, construction, inception, transition
(e) transition, elaboration, production, construction, inception |
|--|

7) Which of the systems can best be developed using the waterfall model?

- (a) a new game
- (b) user-interface of a word processor
- (c) a stock control system
- (d) a school library system
- (e) a virtual reality system

8) Which of the following is an/are advantage(s) of evolutionary prototyping over throw-away prototyping?

- (a) Initial effort to construct a prototype is not wasted.
- (b) Can be used to capture changing requirements of a system.
- (c) Suitable for systems which require a rigid design.
- (d) Can be applied when requirements are vague.
- (e) Can be applied when requirements are stable once captured.

9) Which of the following is a/are external requirements of a credit management system of a bank?

- (a) Credit information must be held for 6 years from when a customer account has been closed.
- (b) The system should be developed in JAVA.
- (c) The system must have menu items to create new user accounts and delete accounts.
- (d) The system should only provide 3 login attempts.
- (e) The bank's credit management system should be interoperable with the CRIB system.

10) Consider the following dialog between an analyst Kamal and a project manager Sarath.

Sarath: Kamal, how is the progress of the project now?

Kamal: These days I am evaluating if the system could be developed with the technology we have and if we could meet the price what client can offer.

What types of feasibility Kamal is talking about?

- (a) financial feasibility
- (b) technical and financial feasibility
- (c) technical, legal and financial feasibility
- (d) technical and legal feasibility
- (e) legal and financial feasibility

11) Which of the following is/are correct statements?

- (a) The requirements engineering process is more often a sequential process.
- (b) Requirements validation is important to make sure the system caters for the user needs correctly and completely.
- (c) Feasibility study is always done after the requirements are captured completely.

- (d) Requirement validation may be assisted by CASE tools.
- (e) Requirement specifications can be used to form a contract between a software development company and a client.

12) Which of the following is/are included in a requirement specification?

- (a) project plan
- (b) users of the system
- (c) scope
- (d) system models
- (e) screen shots

13) Which of the following is a/are good design principle(s)?

- | | | |
|-----------------|----------------------------|----------------|
| (a) coupling | (b) structured programming | (c) modularity |
| (d) maintenance | (e) encapsulation | |

14) Consider a car security system designed to reduce car thefts. Suppose you as a quality assurance engineer engaged in its testing has found the following code fragment in it.

CarAlarmFunction

// This function activates when someone other than the owner uses a key to open a door.

{

SwitchOnLights()

Horn ()

NotifyOwner ()

}

What is its level of cohesion?

- (a) sequential
- (b) procedural
- (c) communicational
- (d) logical
- (e) temporal

15) Which of the following interaction style(s) best suit(s) the design of an interface for visually impaired users?

- (a) direct manipulation
- (b) form filling
- (c) natural language
- (d) command line
- (e) menu-based

16) Select the correct statement(s) from among the following.

- (a) Use of design patterns is an example of reuse.
- (b) Reuse enhances rigidity of a design and in turn increases reliability of software.
- (c) Design patterns are reusable code fragments which can be assembled to produce reliable software.
- (d) Design patterns are efficient design solutions, which has been used over and over again across designs.
- (e) Standard compliance is not a benefit of reusing design elements.

17) Which of the following problems can best be detected by code inspections?

- (a) inefficient code
- (b) usability problems
- (c) reliability problems
- (d) uninitialized variables
- (e) incompatible assignments

18) Which of the following testing(s) involve(s) purely black box testing?

- (a) unit testing
- (b) acceptance testing
- (c) beta testing
- (d) integration testing
- (e) interface testing

19) Test cases should be generated for unit testing and system testing during

- (a) design and requirement analysis respectively.
- (b) coding and design respectively.
- (c) testing and maintenance respectively.
- (d) requirement analysis
- (e) coding

20) The CASE tools in column X have to be matched with an activity in column Y.

	Column X		Column Y
1	compilers	A	testing
2	version management systems	B	requirement analysis
3	prototyping tools	C	project management
4	scheduling tools	D	coding
5	static analysers	E	configuration management

Which of the following is a/are correct match(es)?

- (a) 1 & C 2 & E 3 & B 4 & C 5 & D
- (b) 1 & C 2 & C 3 & B 4 & A 5 & E
- (c) 1 & D 2 & B 3 & A 4 & C 5 & E

- | |
|---|
| (d) 1 & D 2 & E 3 & B 4 & C 5 & A |
| (e) 1 & B 2 & C 3 & E 4 & A 5 & D |

21) Which of the following is a/are proper ordering(s) of the levels defined in the Capability Maturity Model (CMM)?

- | |
|--|
| (a) initial, defined, repeatable, managed, optimized |
| (b) defined, initial, repeatable, managed, optimized |
| (c) initial, repeatable, defined, managed, optimized |
| (d) optimized, managed, repeatable, initial, defined |
| (e) defined, managed, initial, optimized, repeatable |

22) Which of the following is/are activities of project management?

- | | |
|----------------------|-----------------------|
| (a) project planning | (b) code walkthroughs |
| (c) test planning | (d) cost estimation |
| (e) scheduling | |

23) Which of the following is a/are risk(s) a software project could encounter?

- | |
|--|
| (a) management change |
| (b) competition from similar projects in the case of commercial products |
| (c) staff turnover |
| (d) underestimating costs |
| (e) requirements change |

24) Which of the following is a/are correct statement(s) about software maintenance?

- | |
|---|
| (a) Corrective maintenance is concerned with repairing software faults after they have been detected during operation. |
| (b) Adaptive maintenance is performed when software is changed to incorporate new user requirements. |
| (c) It may be difficult to maintain a system when the original developers are no longer working with the company. |
| (d) Old systems are easier to maintain than newly built software because they have been built several years before and have been maintained since then. |
| (e) Maintenance may cause software to lose its design integrity. |

25) Which of the following best defines the term 'version'?

- | |
|---|
| (a) It is an instance of the software which is both functionally and non-functionally identical. |
| (b) It is an instance of the software which is released outside of the development house. |
| (c) It is an instance of the software which is functionally identical but different in performance. |
| (d) It is an instance of the software usually developed few years later. |
| (e) It is an instance of the software which is functionally different. |

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