

Software Eng. Final Exam, 2019, Istanbul University, Computer Eng. Dept. (Mark the wrong option unless specified otherwise)
First 3 questions are 12 points. Remaining test questions are 2 points each (48 points total).

1. (4 points) (Ch1) List the 4 fundamental software activities

- a. Development
- b. Specification
- c. Validation
- d. evolution

2. (4 points) Fill in the blanks for agile manifesto principles

- a. Individuals and interactions over process and tools
- b. Working software over comprehensive documentation
- c. Customer collaboration over contract negotiation
- d. Responding to change over following a plan

3. (4 points) The principles of agile methods are

- a. Customer involvement
- b. Incremental delivery
- c. People not process
- d. Embrace change
- e. Maintain simplicity

4. (Ch2) Which one is a software process model

- a. River
- ☒ b. Waterfall
- c. Sea
- d. Rose
- e. Camel

5. (Ch22) List the 4 success criterias for Project management

- a. Finishing project on time ✓
- b. Finishing project within budget ✓
- c. Software meeting customer expectation ✓
- ☒ d. Software projects are one-off projects
- e. Maintaining a good team ✓

6. (Ch22) List the 4 project management activities

- a. Project planning ✓
- b. Reporting ✓
- c. Risk management ✓
- d. People management ✓
- e. Software Management ✓

7. List the 4 principal dependability properties

- a. Availability
- b. Reliability
- c. Maintainability
- d. Safety
- e. Security

8. List the 3 reasons for software maintenance

- ☒ a. Fault repair
- b. Software testing
- c. Environmental adaptation
- d. Add/modify functionality ✓

9. Which one has the main reasons for testing?

- a. meeting requirements & discover defects
- b. maintaining software & removing defects
- ☒ c. meeting requirements & maintaining software
- d. adapting software & discovering defects

10. Which one is the correct order of software testing?

- a. User, Development, Release tests
- ☒ b. Development, Release, User tests
- c. Development, Release, User tests
- d. Release, User, Development tests
- e. Release, Development, User tests

11. (Ch22) Which one is not a risk management process activity?

- a. Risk identification
- b. Risk analysis
- c. Risk evaluation
- d. Risk mitigation
- e. Risk monitoring

- ☒ c. Risk planning
- d. Risk reduction
- ☒ e. Risk monitoring

12. Which one is not a security term?

- a. Asset
- b. Expenditure
- c. Vulnerability
- d. Threat
- ☒ e. Control

13. Which one is not safety term?

- a. Mishap
- b. Hazard
- c. Hazard probability
- ☒ d. Damage

14. Which one is not a reason for software change?

- a. New requirements
- b. Errors
- ☒ c. Testing
- d. New equipments
- e. Need to improve performance

15. (Ch9) Which one is not a major part of software life cycle?

- ☒ a. Initial development
- b. Evolution
- c. Servicing
- d. Phase in
- e. Phase out

16. (Ch8) Which one is not a Software Testing term?

- ☒ a. Verification
- b. Validation ✓
- c. Testing ✓
- d. Specification ✓
- e. Inspections ✓

17. (Ch8) Development tests doesn't include which one?

- a. Unit test ✓
- b. Release test ✓
- ☒ c. System test
- d. Component test ✓

18. (Ch19) Which one is not benefit of SOA architecture?

- a. Services can be outsourced to providers
- b. Services are language-independent
- c. legacy systems can be preserved
- ☒ d. Inter-organisational computing made possible
- e. Services are executed on local servers

19. (Ch19) Which one is not SOA technology?

- a. SOAP
- b. WSDL
- ☒ c. HTTPS
- d. WS-BPEL

20. (Ch19) Services... (Mark the wrong choice)

- a. are independent of apps using them
- b. are a way of developing distributed software
- c. execute on service providers' computer
- ☒ d. execute on service users' computer

21. (Ch22) Which one is not in human needs hierarchy?

- ☒ a. Self-realization needs
- b. Esteem needs
- c. Social needs

22. What is the difference between functional (FR) and nonfunctional requirements (NR)?

- ☒ a. FR are services & NF are constraints
- b. FR are constraints & NF are services
- c. Both FR & NR are services
- d. Both FR & NR are constraints

23. (Ch.4) Which is not a non-functional product requirement

- a. Usability
- ☒ b. Reusability
- c. Efficiency
- d. Dependability
- e. Security

24. After you fix an issue assigned to you in JIRA, it becomes...?

- a. Closed
- b. Link

- c. Move
- ☒ d. Resolved

25. Who can create issue in JIRA?

- a. User
- ☒ b. Project Admin
- c. Developer
- d. All of Above

26. In JIRA, an issue can be anything like a

- a. A project branch
- ☒ b. A software bug
- c. A project task
- d. A help-desk ticket
- e. A leave request form

QUESTIONS:

1 (10 points) Design a class diagram (not an ER) for the following problem to store and represent all the info:

- All people have id, name, birth date, death date, gender, marital status(single, married, divorced, widowed), living status(alive, deceased/dead), a father, a mother.
- A man and a woman get married on a date to start a family with two witnesses. They can have any number of children.
- Mothers, fathers, children and witnesses are all people.
- Couples sometimes get a divorce on date. When a person get a divorce, his/her marital status become *divorced*.
- When a person is born, his living status is alive. Everybody dies eventually on a death date. His living status become deceased.
- When somebody dies his/her children loose a parent and his wife/her husband loose a spouse. (What a pity. But it is a fact life.) His/her marital status become widowed.

2 (10 points) Draw a use case diagram for the above problem (use only the following actors and tasks).

- Actors: people, man, women
- Tasks: born, die, get married, get divorced

3 (10 points) Draw a state diagram for the marital status (single, married, divorced, widowed) of people using the following states and events::

- States: single, married, divorced, widowed
- Events: born, die, get married, get divorced

4) Give only the git commands for the following tasks:

1. Verify that you are now on the temp branch _____

2. Switch to the master branch _____

3. Add the changes and make a second commit _____

4. Put your local repository on the GitHub server _____