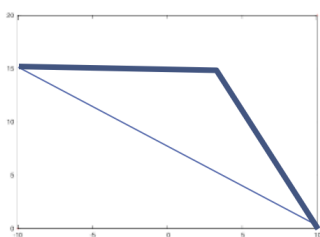**Directions**:
This exam is closed book. The use of any electronics, notes, books, or other resources is not permitted.
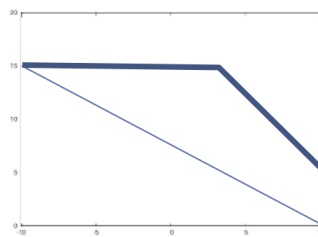**If something is not 100% true then it is false.**

Write the letter for each multiple-choice question on the answer sheet. Answers marked on this exam document will NOT be scored. Read carefully each question.

1. You are developing a university accounting system that replaces an existing system. The new one provides the same functionality but provides technological updates (i.e., new non-functional requirements but the functional requirements are the same). As soon as the new system is finished, it will completely replace the current system. A partially finished system is not useful and will not be paid in full. A complete system with 100% the functionalities is required. The new system's scheduled release date is Oct 4, 2019. Which software process model would be best?

2. Which process model would you recommend to allow changes (both in requirements and technical implementation) during the development process and make it cheaper and easier to make these changes?

3. True or False: Are these statements true or false? Write the entire word *true* or *false* on your answer sheet.
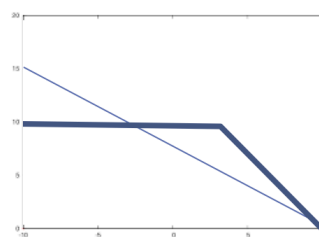
    A. Daily work tracking is a characteristic of Agile processes.
    B. Agile is the best process model to develop a Pac-Man video game for iPhone.
    C. Agile allows to break down a product into a set of manageable and understandable chunks.
    D. Agile allows to provide customers with on-time delivered of increments and gain feedback.
    E. Agile is most appropriate for new software development rather than for software maintenance.

4. True or false. **Planning Poker** is consensus-based estimating technique that is used to estimate the relative size of stories stored in the product backlog.

5. What was the velocity of your team in project 2? (write the number in your answer sheet)

6. Write 3 characteristics of clean code. There are 3 lines for that in your answer sheet.

7. In a Burndown chart what could be in the X-axis?

8. Which of the following is/are correct Burndown charts? List all the option that apply (the letters separated by commas) in your answer sheet
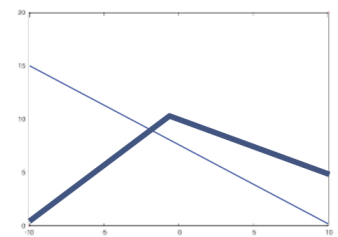

A   B   C   D

9. Which of the following are Agile principles? Write the corresponding letter(s) (separated by commas) on your answer sheet.

    A. Welcome changing requirements, even late in development.
    B. Continuous attention to technical excellence and good design.
    C. The best software emerges from self–organizing teams.
    D. Continuous attention to documentation and design models.
    E. Deliver working software frequently.

10. Are these statements true or false? <u>Write the entire word</u> ***true* or *false*** on your answer sheet.

    A. Good programmers write code that humans can understand.
    B. Clean code is any code that works.
    C. The ratio of time spent reading vs writing code is well over 10:1.

11. Write 3 clean code principles. There are 3 lines for that in your answer sheet.

12. Write 3 characteristics of good stories according with the INVEST principle. There are 3 lines for that in your answer sheet.

13. List 3 (of the 4) types of PBIs. There are 3 lines for answer this in your answer sheet.

14. The DEEP key characteristics apply to

A. User stories	B. Story points	C. Product backlog	D. Sprint backlog	E. Code

15. _____ is a prioritized list of desired product functionalities? (write your answer in the answer sheet).

16. Write "Epic" or "Story", or "Theme" in your answer sheet.

    A. It is difficult to estimate
    B. It is long
    C. It has technical unknowns and/or unclear details

17. Are the following stories correct? <u>Write the entire word</u> ***Yes* or *No*** on your answer sheet for each case.

    A. As a student, I need to save my quiz so that later I can review, print, or email it for other uses.
    B. As a student, I need to **review, print, and email** my quizzes so that I can request a revision or study.
    C. As a student, I want to see each question in my quiz displayed clearly so that I can quickly identify my errors.

18. Mention 1 of the 3 tasks included in the grooming process. There is a line for answer this in your answer sheet.

19. Which of the following are characteristics of a Sprint? (write **Yes**, or **No** in the answer sheet).

    A. Time-boxed
    B. Short and with consistent duration
    C. Emergent
    D. Detailed appropriately

20. What information does team members share during the daily scrum meeting (daily stand-up)?
    Write your answer in the answer sheet – one line.

21. Are the following lines of code good examples of clean code? (write **Yes**, or **No** in the answer sheet).

    A. JLabel lblToggle;
    B. for (;;) { // this is an infinite loop
    C. int age;

22. How many lines are recommended to be in a method?