

# Introdução à Engenharia de Software

## 1º Semestre, 2023/24

Exame Época Normal  
15 de janeiro de 2024

Número mecanográfico: \_\_\_\_\_

Nome: \_\_\_\_\_

O exame tem 20 perguntas, sendo que 17 são de escolha múltipla e 03 de preenchimento de espaços vazios. As perguntas de escolha múltipla tem apenas uma resposta correta, devem ser respondidas na grelha presente nesta página do enunciado com um **X**. Para anular uma resposta, o aluno deve preencher a célula. As respostas anuladas não descontam, mas as erradas **descontam** (cotação/(hipóteses – 1)). As perguntas de preenchimento de espaços vazios não descontam. A duração total do exame é de **1h30**. A pergunta adicional, no final, servirá **apenas** para lidar com situações próximas da nota mínima.

*The exam has 20 questions, with 17 being multiple-choice and 03 being focused on completing empty spaces. The multiple-choice questions have only one correct answer.*

*The multiple-choice questions have only one correct answer and should be answered in the grid provided on this page of the exam with an X. To cancel an answer, the student should fill in the cell. Canceled answers do not result in deductions, but incorrect answers deduct (score/(options – 1)).*

*The fill-in-the-blank questions do not result in deductions.*

*The total duration of the exam is 1h30.*

*The additional question, at the end, will be used **only** to tackle situations close to the minimum grade.*



	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17
A																	
B																	
C																	
D																	

1. (1.2 pts) What is the derivative of e to the x?

- A.  $1/x$
- B. e to the x
- C. x times e to the  $x-1$
- D.  $\ln x$

2. (0.9 pts) Area of triangle base 6, height 4?

- A. 10
- B. 20
- C. 12
- D. 24

3. (1.2 pts) What is  $d/dx(x)$ ?

- A. x
- B. 0
- C. 1
- D. undefined

4. (0.9 pts) Variance is the square of what?

- A. Standard deviation
- B. Median
- C. Range
- D. Mean

5. (1.2 pts) Solve:  $2x + 5 = 13$

- A.  $x = 8$
- B.  $x = 4$

- C.  $x = 9$
- D.  $x = 3$

6. (1.2 pts) What is the slope of  $y = 3x + 2$ ?

- A. 3
- B. 5
- C. 1
- D. 2

7. (0.6 pts) What is  $\cos(90 \text{ degrees})$ ?

- A.  $1/2$
- B. -1
- C. 1
- D. 0

8. (1.2 pts) What is the power rule for  $x$  to the  $n$ ?

- A.  $n$  times  $x$
- B.  $x$  to the  $n+1$
- C.  $n$  times  $x$  to the  $n-1$
- D.  $x$  to the  $n$

9. (1.2 pts) What is  $d/dx(5x \text{ squared})$ ?

- A.  $5x$
- B.  $10x$
- C. 10
- D.  $5x$  squared

10. (0.9 pts) Probability of rolling a 3 on a die?

- A.  $1/12$
- B.  $1/6$
- C.  $1/3$
- D.  $1/2$

11. (0.6 pts) What is  $\tan(45 \text{ degrees})$ ?

- A. 1
- B.  $\sqrt{3}$
- C. 0
- D.  $1/2$

12. (0.9 pts) Complementary angle to 30 degrees?

- A. 150 degrees
- B. 90 degrees
- C. 60 degrees
- D. 120 degrees

13. (1.2 pts) Factor:  $2x \text{ squared} + 8x$

- A.  $2x(x+4)$
- B.  $2(x \text{ squared} + 4x)$
- C.  $x(2x+8)$
- D.  $2x \text{ squared } (1+4x)$

14. (0.6 pts) What is  $\tan(0 \text{ degrees})$ ?

- A. undefined
- B. 0
- C. 1
- D. infinity

15. (1.2 pts) What is the chain rule result?

- A.  $f \text{ times } g$
- B.  $f \text{ prime of } g \text{ times } g \text{ prime}$

- C. f prime times g prime
- D. f prime plus g prime

16. (1.2 pts) Simplify:  $(x^2)^3$

- A.  $x^5$
- B.  $x^6$
- C.  $x^9$
- D.  $x^8$

17. (1.2 pts) Solve:  $x^2 - 5x + 6 = 0$

- A.  $x = 1, 6$
- B.  $x = -2, -3$
- C.  $x = 0, 5$
- D.  $x = 2, 3$

18. (0.9 pts) What is the sample space of a coin flip?

- A. H,T
- B. H,T,E
- C. 0,1
- D. 1,2

19. (0.9 pts) Sum of angles in a quadrilateral?

- A. 270 degrees
- B. 180 degrees
- C. 360 degrees
- D. 540 degrees

20. (0.9 pts) What percentile is the median?

- A. 75th
- B. 100th
- C. 50th
- D. 25th