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 de escolha múltipla.
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 da pergunta × 0.25).
A duração total do exame é de **1h30**.

The exam has 20 *multiple-choice questions.*
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*** *(question score × 0.25).*
The total duration of the exam is ***1h30****.*

	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20
A	X					X	X								X					
B		X			X							X							X	X
C								X			X			X			X	X		
D			X	X					X	X			X			X				

1. (0.90 pts) Probability of certain event?
   A. 1
   B. 0.5
   C. infinity
   D. 0
2. (0.90 pts) Area of a circle with radius 5?
   A. 50 pi
   B. 25 pi
   C. 10 pi
   D. 5 pi
3. (0.90 pts) Median of 2,4,6,8?
   A. 6
   B. 4
   C. 7
   D. 5
4. (1.19 pts) What is d/dx(x to the 4th)?
   A. x to the 4th
   B. x cubed
   C. 4x
   D. 4x cubed
5. (0.60 pts) What is cos(60 degrees)?
   A. 0
   B. 1/2

C. 1
D. sqrt3/2

6. (1.19 pts) Solve: x/3 = 4
   A. x = 12
   B. x = 7
   C. x = 4
   D. x = 1

7. (0.60 pts) What is sin(30 degrees)?
   A. 1/2
   B. sqrt3/2
   C. 1
   D. 0

8. (1.19 pts) What is the chain rule result?
   A. f prime times g prime
   B. f prime plus g prime
   C. f prime of g times g prime
   D. f times g

9. (1.19 pts) What is d/dx(2x)?
   A. x
   B. 0
   C. 2x
   D. 2

10. (1.19 pts) Expand: (x-3)(x+3)
    A. x squared + 6x - 9
    B. x squared - 6x + 9
    C. x squared + 9
    D. x squared - 9

11. (0.60 pts) sin squared theta + cos squared theta = ?
    A. 2
    B. 0
    C. 1
    D. theta

12. (0.90 pts) Variance is the square of what?
    A. Median
    B. Standard deviation
    C. Mean
    D. Range

13. (1.19 pts) What is (x cubed) to the 0?
    A. x
    B. x cubed
    C. 0
    D. 1

14. (1.19 pts) Simplify: (x squared) cubed
    A. x to the 5th
    B. x to the 9th
    C. x to the 6th
    D. x to the 8th

15. (1.19 pts) What is d/dx(sin x)?
    A. cos x
    B. sin x

C. -sin x

D. -cos x

16. (0.90 pts) Volume of sphere radius 3?

A. 27 pi

B. 12 pi

C. 9 pi

D. 36 pi

17. (1.19 pts) Solve: x squared - 5x + 6 = 0

A. x = -2, -3

B. x = 1, 6

C. x = 2, 3

D. x = 0, 5

18. (0.90 pts) In a normal distribution, mean equals?

A. Neither

B. Mode

C. Median

D. Both

19. (1.19 pts) What is d/dx(x)?

A. 0

B. 1

C. x

D. undefined

20. (0.90 pts) Volume of a cube with side 3?

A. 9

B. 27

C. 18

D. 81