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	X	X			
B			X				X	X			X	X						X	X	
C		X											X	X						
D	X					X			X											X

1. (0.90 pts) Probability of rolling a 3 on a die?
   A. 1/2
   B. 1/3
   C. 1/12
   D. 1/6

2. (1.19 pts) Expand: (x-3)(x+3)
   A. x squared + 9
   B. x squared + 6x - 9
   C. x squared - 9
   D. x squared - 6x + 9

3. (1.19 pts) What is d/dx(x)?
   A. x
   B. 1
   C. 0
   D. undefined

4. (1.19 pts) What is the derivative of x cubed?
   A. 3x squared
   B. 3x
   C. x squared
   D. x cubed

5. (0.90 pts) What is P(A union B) if A,B disjoint?
   A. P(A)+P(B)
   B. P(A)-P(B)

C. 1
D. P(A) times P(B)

6. (0.60 pts) What is cos(90 degrees)?
   A. 1/2
   B. 1
   C. -1
   D. 0

7. (1.19 pts) What is the product rule?
   A. (fg) prime = fg
   B. (fg) prime = f prime g + fg prime
   C. (fg) prime = f prime g - fg prime
   D. (fg) prime = f prime g prime

8. (0.60 pts) What is cos(60 degrees)?
   A. 0
   B. 1/2
   C. sqrt3/2
   D. 1

9. (1.19 pts) Solve: 2x + 5 = 13
   A. x = 9
   B. x = 8
   C. x = 3
   D. x = 4

10. (1.19 pts) What is d/dx(sin x)?
    A. cos x
    B. -sin x
    C. -cos x
    D. sin x

11. (0.90 pts) Diagonal of square side 1?
    A. 1
    B. sqrt 2
    C. sqrt 3
    D. 2

12. (0.90 pts) Area of a rectangle 5 by 3?
    A. 18
    B. 15
    C. 30
    D. 8

13. (0.60 pts) What is tan(0 degrees)?
    A. infinity
    B. undefined
    C. 0
    D. 1

14. (0.90 pts) What is the sample space of a coin flip?
    A. 1,2
    B. 0,1
    C. H,T
    D. H,T,E

15. (0.90 pts) Median of 2,4,6,8?
    A. 5
    B. 7

C. 4
D. 6

16. (1.19 pts) Factor: 2x squared + 8x
    A. 2x(x+4)
    B. 2(x squared + 4x)
    C. x(2x+8)
    D. 2x squared (1+4x)

17. (1.19 pts) Solve: x squared = 16
    A. x = plus or minus 4
    B. x = 256
    C. x = 4
    D. x = 8

18. (1.19 pts) What is the power rule for x to the n?
    A. n times x
    B. n times x to the n-1
    C. x to the n+1
    D. x to the n

19. (0.90 pts) Volume of sphere radius 3?
    A. 9 pi
    B. 36 pi
    C. 12 pi
    D. 27 pi

20. (1.19 pts) What is (x cubed) to the 0?
    A. x cubed
    B. 0
    C. x
    D. 1