

Introdução à Engenharia de Software

1º Semestre, 2023/24

Exame Época Normal

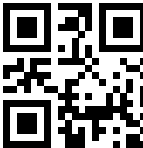
15 de janeiro de 2024

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 $\cos(90 \text{ degrees})$?
- A. $1/2$
 - B. 1
 - C. -1
 - D. 0
7. (1.19 pts) What is the product rule?
- A. $(fg)' = fg'$
 - B. $(fg)' = f'g + fg'$
 - C. $(fg)' = f'g - fg'$
 - D. $(fg)' = f'g'g'$
8. (0.60 pts) What is $\cos(60 \text{ degrees})$?
- A. 0
 - B. $1/2$
 - C. $\sqrt{3}/2$
 - 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 $\tan(0 \text{ degrees})$?
- 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: $2x^2 + 8x$

A. $2x(x+4)$

B. $2(x^2 + 4x)$

C. $x(2x+8)$

D. $2x^2(1+4x)$

17. (1.19 pts) Solve: $x^2 = 16$

A. $x = \text{plus or minus } 4$

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. 9π

B. 36π

C. 12π

D. 27π

20. (1.19 pts) What is (x^0) to the 0?

A. x^0

B. 0

C. x

D. 1