

Iniziato	venerdì, 26 giugno 2020, 12:03
Stato	Completato
Terminato	venerdì, 26 giugno 2020, 12:18
Tempo impiegato	15 min.
Punteggio	6,00/10,00
Valutazione	18,60 su un massimo di 31,00 (60%)

Domanda **1**

Risposta  
corretta

Punteggio  
ottenuto 2,00 su  
2,00

Let  $f, g$  be the functions defined as  $f(n) = 10^3 \frac{n}{\log n}$  and  $g(n) = 10^{-3} \frac{\log n}{n}$ .

Scegli una o più alternative:

- ☒  $f \in \Omega(g)$  ✓
- ☐  $f \in O(g)$
- ☐  $f \in \Theta(g)$

Your answer is correct.

La risposta corretta è:  $f \in \Omega(g)$

Domanda **2**

Risposta errata

Punteggio  
ottenuto 0,00 su  
2,00

Nondeterministic Turing Machines:

Scegli una o più alternative:

- ☐ Always work in polynomial time
- ☒ Can be simulated by deterministic TMs. ✓
- ☐ If working in polynomial time, can be used to characterize **NP**
- ☒ Are essential to define the complexity class **NP** ✗

Your answer is incorrect.

Le risposte corrette sono: If working in polynomial time, can be used to characterize **NP**, Can be simulated by deterministic TMs.



Domanda **3**  
Risposta  
corretta  
  
Punteggio  
ottenuto 2,00 su  
2,00

The universal Turing machine:

Scegli una o più alternative:

- ☒ Is an essential ingredient of in the proof of existence of uncomputable problems. ✓
- ☐ Works in polynomial time.
- ☐ Can simulate every Turing machine, but not itself
- ☒ Can simulate every Turing machine, with a polynomial overhead. ✓

Your answer is correct.

Le risposte corrette sono: Can simulate every Turing machine, with a polynomial overhead., Is an essential ingredient of in the proof of existence of uncomputable problems.

Domanda **4**  
Risposta errata  
  
Punteggio  
ottenuto 0,00 su  
2,00

Suppose a language  $\mathcal{L}$  is in **EXP** but not in **P**. Then:

Scegli una o più alternative:

- ☒ There could be a nondeterministic polytime TM computing  $\mathcal{L}$  ✓
- ☐  $\mathcal{L}$  is necessarily **NP**-complete.
- ☐  $\mathcal{L}$  can be computed in polynomial time.
- ☒ The classes **NP** and **P** are different. ✗

Your answer is incorrect.

Le risposte corrette sono:  $\mathcal{L}$  can be computed in polynomial time., There could be a nondeterministic polytime TM computing  $\mathcal{L}$

Domanda **5**  
Risposta  
corretta  
  
Punteggio  
ottenuto 2,00 su  
2,00

The notion of PAC-learnable concept class:

Scegli una o più alternative:

- ☒ Needs to hold for every distribution **D** on the instance class. ✓
- ☐ Cannot be reached when the underlying concept class is the one conjunctions of literals.
- ☒ Does not make any reference to the time complexity of the learning algorithm ✓
- ☐ Requires the output concept to have probability of error  $\epsilon$ , in all cases

Your answer is correct.

Le risposte corrette sono: Needs to hold for every distribution **D** on the instance class., Does not make any reference to the time complexity of the learning algorithm



