Quiz on Section 3 Results for SevdanurGenc

Correct answers are hidden.

Score for this attempt: **11.33** out of 12

Submitted Jun 22 at 10:38pm

This attempt took 13 minutes.

Question 1

1 / 1 pts

How do you create a simulated annealing sampler in D-Wave assuming we have the following statement?

```
from neal import SimulatedAnnealingSampler
```

- sampler = Simulated
- sampler = SimulatedAnnealler
- sampler = SimulatedAnnealingSampler
- sampler = SimulatedAnnealingSampler()

Question 2

1 / 1 pts

Which one is not a valid parameter for the `sample` function ?

- number of reads
- binary quadratic model
- beta schedule
- ising model

Question 3

1 / 1 pts

Suppose we created a simulated annealing sampler named `sampler`. By using which function can you sample directly from an Ising model without creating a bqm?

- sample
- **sample_ising**
- ising_sample
- ising_sampler

Question 4

1 / 1 pts

Suppose that we have a binary quadratic model named `bqm`.

Which function do you use to add a quadratic objective function?

- **bqm.add_quadratic**
- bqm.add_quadratic_objective
- bqm.add_objective
- bqm.add

Partial

Question 5

0.33 / 1 pts

```
p = []
    for t in range(N):
        for i in range(N):
            if sample[f"x_{i}_{t}"] == 1:
                p.append(i)
```

Given that `x_i_t=1` if node i is visited at time t and 0 otherwise and a sample obtained as a result of solving a TSP instance with N cities using simulated annealing, suppose we execute the above piece of code. Which one of the following(s) is(are) true about `p`?

- [x] If the sample is feasible, p contains the list of visited cities.
- [ ] p may contain less than N integers
- [x] p may contain more than N integers
- [x] p is always a permutation of integers between 0,..N-1

Question 6

1 / 1 pts

```
def sample_to_coloring(sample, colors, N):
    coloring = {}
    for i in range(N):
        for c in colors:
            if sample[f"x_{i}_{c}"] == 1:
                coloring[i]=c
    return coloring
```

Given that `x_i_c=1` if node i is colored with color c and 0 otherwise and a sample obtained as a result of solving a graph coloring instance with N nodes using simulated annealing, suppose we execute the above piece of code. Which one of the following(s) is(are) true about coloring?

- [x] coloring is a dictionary with keys as nodes and values as colors
- [ ] All colors appear exactly ones as the values of the coloring
- [ ] coloring can have more than N keys
- [x] coloring can have less than N keys

Question 7

1 / 1 pts

Suppose that we have a binary quadratic model named `bqm`.

Which function do you use to add a linear inequality constraint?

- (•) bqm.add_linear_inequality_constraint
- ( ) bqm.add_constraint
- ( ) bqm.add_linear_inequality
- ( ) bqm.add_inequality_constraint

Question 8

1 / 1 pts

Adiabatic quantum computing is universal, i.e. you can simulate gate based quantum computers using adiabatic quantum computing.

- (•) True
- ( ) False

Question 9

1 / 1 pts

In D-Wave, interactions of the form $J_{ijk}s_is_js_k$can be implemented.

- ○ True
- ◉ False

Question 10

1 / 1 pts

How do you create a sampler to sample from D-Wave QPU with built-in minor embedding?

- ◉ sampler = EmbeddingComposite(DWaveSampler())
- ○ sampler = MinorEmbedding(DWaveSampler())
- ○ sampler = MinorEmbedding()
- ○ sampler = EmbeddingComposite()

Question 11

1 / 1 pts

Select the true statement(s).

- ☐ One should set the chain_strength as high as possible to obtain good results.
- ☐ Chain break fraction is same for all samples in a sampleset

- [x] Chains are needed because not all qubits are connected in D-Wave QPUs.

- [x] chain_strength paraemeter determines the coupling coefficient between qubits in a chain.

Question 12

1 / 1 pts

How do you create a sampler to sample from D-Wave default QPU?

- ( ) sampler = DWaveSampler("default"))
- ( ) sampler = DWave()
- ( ) sampler = DWaveQPU()
- (•) sampler = DWaveSampler()

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