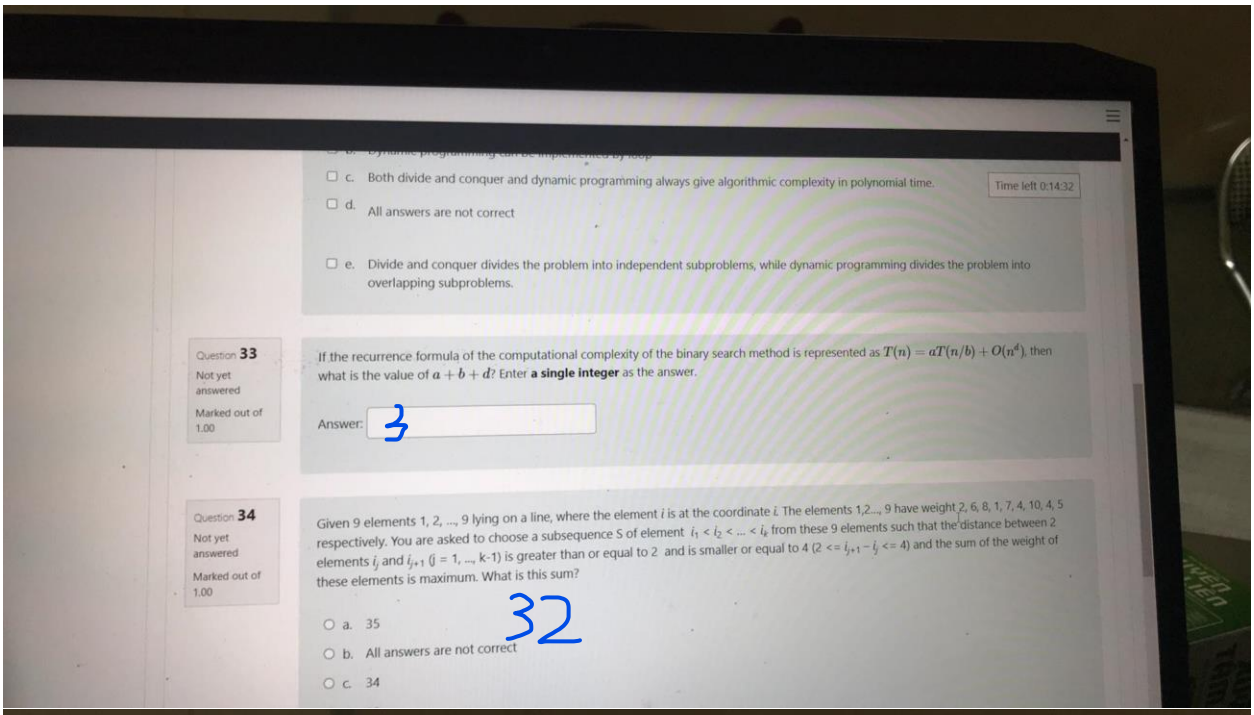


c. Both divide and conquer and dynamic programming always give algorithmic complexity in polynomial time.

Time left 0:14:32

d. All answers are not correct

e. Divide and conquer divides the problem into independent subproblems, while dynamic programming divides the problem into overlapping subproblems.

Question **33**
Not yet answered
Marked out of 1.00

If the recurrence formula of the computational complexity of the binary search method is represented as $T(n) = aT(n/b) + O(n^d)$, then what is the value of $a + b + d$? Enter **a single integer** as the answer.

Answer: 3

Question **34**
Not yet answered
Marked out of 1.00

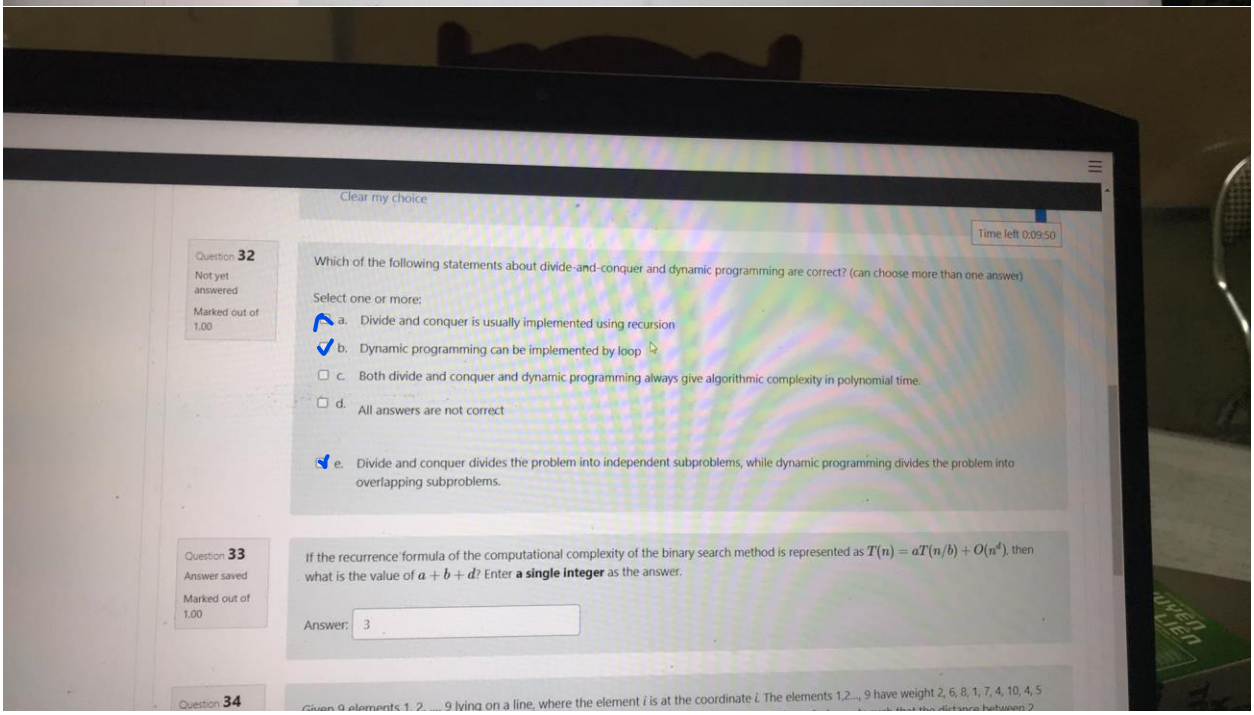
Given 9 elements 1, 2, ..., 9 lying on a line, where the element i is at the coordinate i. The elements 1,2..., 9 have weight 2, 6, 8, 1, 7, 4, 10, 4, 5 respectively. You are asked to choose a subsequence S of element $i_1 < i_2 < ... < i_k$ from these 9 elements such that the distance between 2 elements i_j and i_{j+1} (j = 1, ..., k-1) is greater than or equal to 2 and is smaller or equal to 4 ($2 <= i_{j+1} - i_j <= 4$) and the sum of the weight of these elements is maximum. What is this sum?

32

a. 35

b. All answers are not correct

c. 34



Clear my choice

Time left 0:09:50

Question **32**
Not yet answered
Marked out of 1.00

Which of the following statements about divide-and-conquer and dynamic programming are correct? (can choose more than one answer)

Select one or more:

a. Divide and conquer is usually implemented using recursion

b. Dynamic programming can be implemented by loop

c. Both divide and conquer and dynamic programming always give algorithmic complexity in polynomial time.

d. All answers are not correct

e. Divide and conquer divides the problem into independent subproblems, while dynamic programming divides the problem into overlapping subproblems.

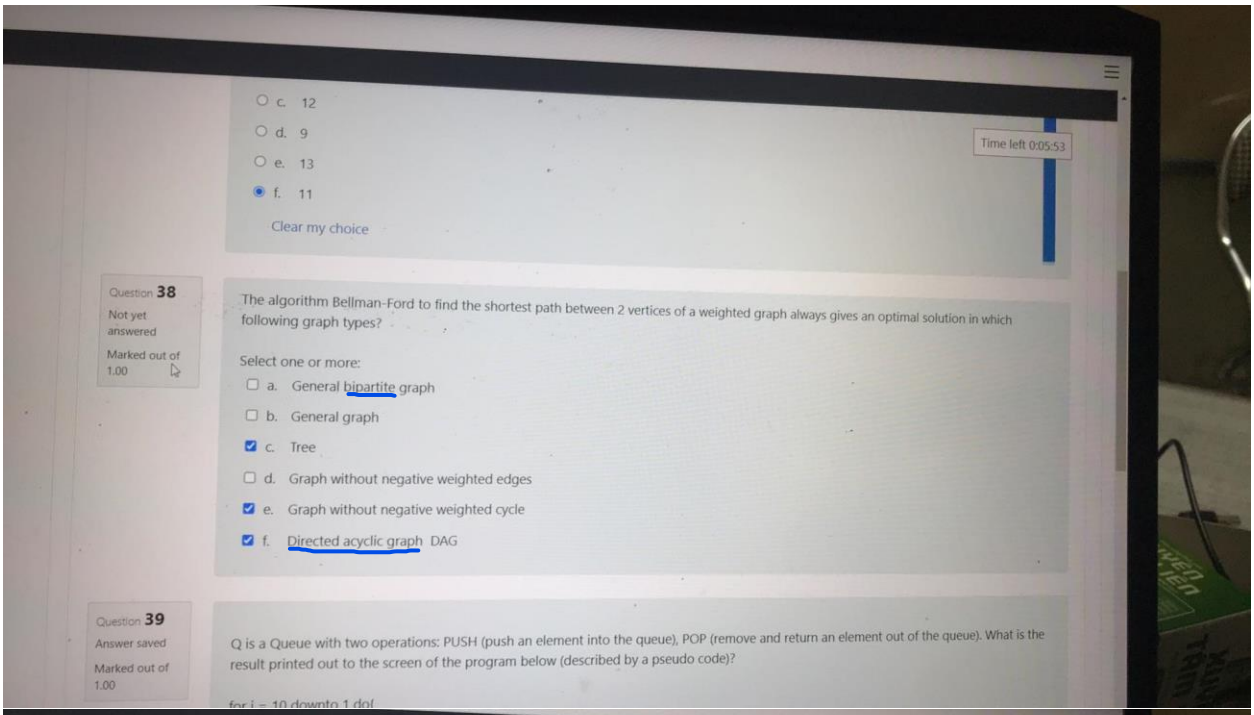
Question **33**
Answer saved
Marked out of 1.00

If the recurrence formula of the computational complexity of the binary search method is represented as $T(n) = aT(n/b) + O(n^d)$, then what is the value of $a + b + d$? Enter **a single integer** as the answer.

Answer: 3

Question **34**

Given 9 elements 1, 2, ..., 9 lying on a line, where the element i is at the coordinate i. The elements 1,2..., 9 have weight 2, 6, 8, 1, 7, 4, 10, 4, 5



c. 12
d. 9
e. 13
f. 11

Time left 0:05:53

Clear my choice

Question 38
Not yet answered
Marked out of 1.00

The algorithm Bellman-Ford to find the shortest path between 2 vertices of a weighted graph always gives an optimal solution in which following graph types?

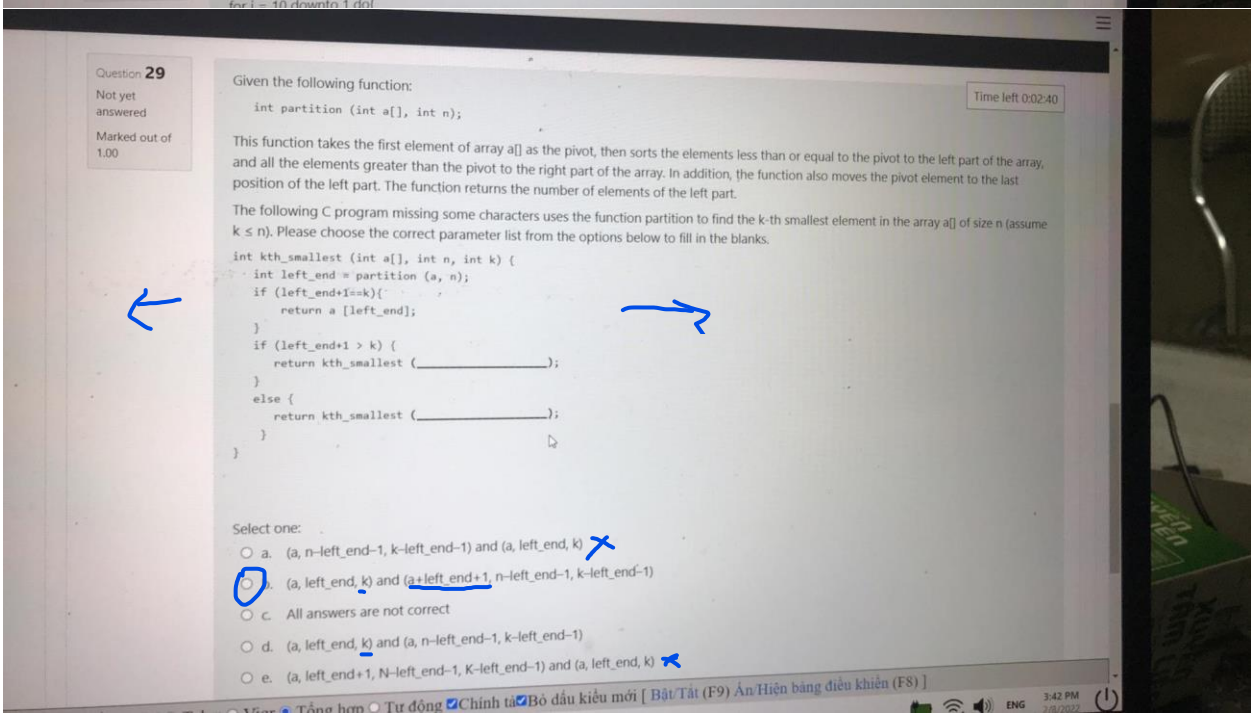
Select one or more:

- [ ] a. General bipartite graph
- [ ] b. General graph
- [x] c. Tree
- [ ] d. Graph without negative weighted edges
- [x] e. Graph without negative weighted cycle
- [x] f. Directed acyclic graph DAG

Question 39
Answer saved
Marked out of 1.00

Q is a Queue with two operations: PUSH (push an element into the queue), POP (remove and return an element out of the queue). What is the result printed out to the screen of the program below (described by a pseudo code)?

for i = 10 downto 1 do{



Question 29
Not yet answered
Marked out of 1.00

Given the following function:

Time left 0:02:40

```
int partition (int a[], int n);
```

This function takes the first element of array a[] as the pivot, then sorts the elements less than or equal to the pivot to the left part of the array, and all the elements greater than the pivot to the right part of the array. In addition, the function also moves the pivot element to the last position of the left part. The function returns the number of elements of the left part.

The following C program missing some characters uses the function partition to find the k-th smallest element in the array a[] of size n (assume k ≤ n). Please choose the correct parameter list from the options below to fill in the blanks.

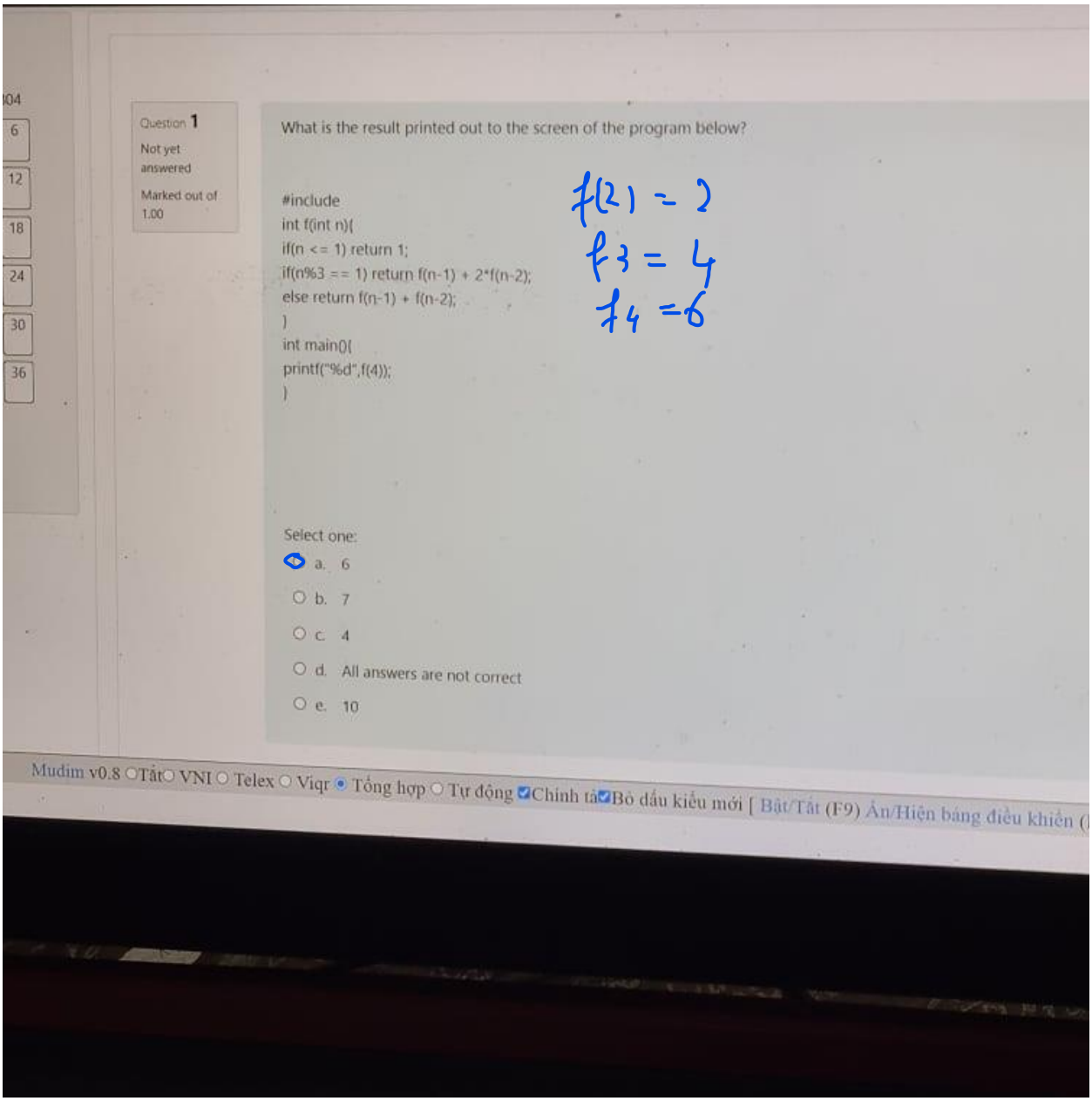
```
int kth_smallest (int a[], int n, int k) {
  int left_end = partition (a, n);
  if (left_end+1==k){
     return a [left_end];
  }
  if (left_end+1 > k) {
     return kth_smallest (_____________);
  }
  else {
     return kth_smallest (_____________);
   }
}
```

Select one:

- a. (a, n–left_end–1, k–left_end–1) and (a, left_end, k)
- b. (a, left_end, k) and (a+left_end+1, n–left_end–1, k–left_end–1)
- c. All answers are not correct
- d. (a, left_end, k) and (a, n–left_end–1, k–left_end–1)
- e. (a, left_end+1, N–left_end–1, K–left_end–1) and (a, left_end, k)

Tổng hợp Tự động Chính tả Bỏ dấu kiểu mới [Bật/Tắt (F9) Ẩn/Hiện bảng điều khiển (F8)]

ENG 3:42 PM



Question 1

Not yet answered

Marked out of 1.00

What is the result printed out to the screen of the program below?

```
#include
int f(int n){
if(n <= 1) return 1;
if(n%3 == 1) return f(n-1) + 2*f(n-2);
else return f(n-1) + f(n-2);
}
int main(){
printf("%d",f(4));
}
```

f(2) = 2
f3 = 4
f4 = 6

Select one:

- a. 6
- b. 7
- c. 4
- d. All answers are not correct
- e. 10

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Time left 0:58

3

ut of

Given the following program (described by a pseudo code) in which array a (elements are indexed from 1 to n), variables n, m, T, cnt are declared as global variables (a, n, m are the input data).

```
solve(k){
  for v = 0 to 1 do{
    T = T + v*a[i];
    if k = n then{
      if T = m then
        cnt = cnt + 1;
    }else
      solve(k+1);
  }
}
main{
  T = 0;
  cnt = 0;
  solve(1);
  print(cnt);
}
```

Which of the following statements are correct?

a. The given program computes the number of ways to select elements from a such that the sum of the selected elements is equal to m

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ENG 2:47 P

```
    if k = n then{
      if T = m then
        cnt = cnt + 1;
    }else
      solve(k+1);
  }
}
main(
  T = 0;
  cnt = 0;
  solve(1);
  print(cnt);
}
```

Time le

Which of the following statements are correct?

- a. The given program computes the number of ways to select elements from a such that the sum of the selected elements is equa to m ✓
- b. The given program check if the sum of elements of a is equal to m? ✗
- c. All statements are not correct
- d. The given program computes the number of times the value m appears in the array a ✗

What is the most suitable method to efficiently compute the equation $x^3 + 2021x + 2 = 0$ where $-1000 < x < 1000$ with an acceptable

What is the most suitable method to efficiently compute the equation $x^3 + 2021x + 2 = 0$ where $-1000 \leq x \leq 1000$ with an acceptable error of 10^{-6}?

Select one:

- a. Graph algorithm
- b. Dynamic programming
- c. All answers are not correct
- d. Specific algorithm
- e. Exhaustive search
- f. Divide and conquer

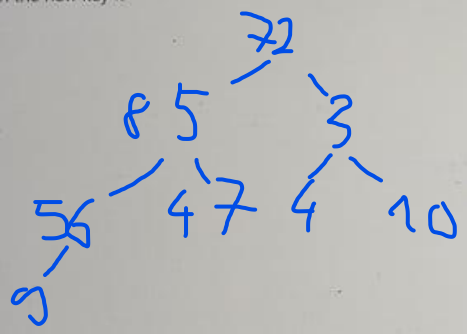
Each element of a Min-Heap (represented by a complete tree) has two fields (id, k) in which id is the identifier and k is the key of the element.
The Min-Heap has following operations:

Time left 0:53:00

- insertHeap(id, k): insert an element with identifier id and key k into the Min-Heap
- deleteMin(): return the element (id, k) having minimal key and remove this element from the Min-Heap
- updateKey(id, k): update the element having identifier id with the new key k

Perform the sequence of operations over the Min-heap:

- insertHeap(1,4)
- insertHeap(2,9)
- insertHeap(3,3)
- insertHeap(4,7)
- insertHeap(5,6)
- insertHeap(6,1)
- insertHeap(7,2)
- insertHeap(8,5)
- insertHeap(9,10)
- deleteMin()



Which of the following statements are correct?

- a. Element having identifier 1 is the left-child of the element having identifier 7
- b. Element having identifier 4 is the right-child of the element having identifier 8
- c. Element having identifier 1 is the right-child of the element having identifier 7
- d. Element having identifier 2 is the left-child of the element having identifier 8
- e. Element having identifier 2 is the right-child of the element having identifier 8
- f. Element having identifier 4 is the left-child of the element having identifier 8

Given an undirected graph G = (V,E) in which V is the set of nodes and E is the set of edges. Denote A[x] the set of adjacent nodes of x (for all x in V).

Time left 0:50:

Given a function process (described by a pseudo code) that receives two nodes s and t of V as parameters

```
process(s, t){
 Init an empty queue Q;
 for x in V do
  d[x] = -1;
 Q.push(s);// push an element into the queue Q
 d[s] = 0;
 while Q not empty do{
  u = Q.pop();// pop an element out of the queue Q
  for v in A(u) do{
   if d[v] = -1 then{
    Q.push(v);
    d[v] = d[u] + 1;
   }
  }
 }
 return d[t];
}
```

Which following statements are correct?

○ a. The function process always returns the length (number of edges) of the longest path from s to t on G

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```
Q.push(s);// push an element into the queue Q*
d[s] = 0;
while Q not empty do{
 u = Q.pop();// pop an element out of the queue Q
 for v in A(u) do{
  if d[v] = -1 then{
   Q.push(v);
   d[v] = d[u] + 1;
  }
 }
}
return d[t];
}
```

Which following statements are correct?

- a. The function process always returns the length (number of edges) of the longest path from s to t on G
- b. If G is connected, then the function process returns the length (number of edges) of the longest path from s to t on G
- c. All statements are not correct
- d. If G is connected, then the function process returns the length (number of edges) of the shortest path from s to t on G
- e. The function process always returns the length (number of edges) of the shortest path from s to t on G

Which of the following statements are correct for a queue?

```
Q.push(s);// push an element into the queue Q*
d[s] = 0;
while Q not empty do{
  u = Q.pop();// pop an element out of the queue Q
  for v in A(u) do{
    if d[v] = -1 then{
      Q.push(v);
      d[v] = d[u] + 1;
    }
  }
}
return d[t];
}
```

Which following statements are correct?

- a. The function process always returns the length (number of edges) of the longest path from s to t on G
- b. If G is connected, then the function process returns the length (number of edges) of the longest path from s to t on G
- c. All statements are not correct
- d. If G is connected, then the function process returns the length (number of edges) of the shortest path from s to t on G
- e. The function process always returns the length (number of edges) of the shortest path from s to t on G

Which of the following statements are correct for a queue?

Which of the following statements are correct for a queue?

Time left 0:47:0

Select one:

- a. Queue is a hierarchical structure (as trees)
- b. All statement are not correct
- c. Queue is a linear structure ✓

Clear my choice

Given a tree T = (V,E), in which V = {1,2,3,4,5,6,7,8,9,10,11,12,13} is the set of nodes and E = {(1,2), (1,12), (1,13), (2,3), (2,4), (3,7), (3,8), (3,9), (4,5), (4,6), (5,10), (5,11)} is the set of edges. Nodes 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13 have respectively weights 8, 6, 9, 1, 9, 2, 10, 2, 4, 3, 2, 5, 7. Find a subset S of nodes of V having maximal total weights such that 2 two any nodes of S are not adjacent on T. What is the sum of weights of nodes in S ?

- a. 35
- b. 37
- c. No answer is correct
- d. 43
- e. 46
- f. 39
- g. 38
- h. 45 ✓

O e. 46

O f. 39

O g. 38

O h. 45

Question **9**

Not yet answered

Marked out of 1.00

An exhaustive search algorithm is called efficient when:

Select one or more:

☐ a. its amortized time is constant

☐ b. its running time is constant

☐ c. its amortized time is polynomial

☐ d. All answers are not correct

☐ e. its amortized time is linear

☐ f. its running time is polynomial

☐ g. its running time is exponential

Question **10**

Not yet answered

Marked out of 1.00

There are $n = 3$ jobs, j jobs starting at S_j and ending at F_j. Two jobs are compatible if they do not overl
subset of mutually compatible jobs.

Consider the following greedy algorithm:

• Sort the jobs in ascending order of starting time S_j.

Given a undirected graph G=(V,E) in which V = {1,2,3,4,5,6,7,8,9} is the set of nodes and E = {(1, 3),(1, 8),(1, 9),(2, 3),(2, 4),(2, 6),(3, 5),(4, 6),(4, 7),(5, 6),(5, 7),(8, 9)} is the set of edges. Run the DFS algorithm of Tarjan (nodes are considered in a lexicographic order) for finding low and num of each node in which: num[v] is the index (time-point) of node v in the visit order and low[v] is defined as follows: if there exists a back edge (y,x) in which y is a descendant of v and x is an ancestor of v then low[v] is equal to the minimum value of num[x] (among nodes x described above). Otherwise, if there does not exist such a back edge (y,x) then low[v] = num[v]

Which statements are correct?

Select one:

- a. low[7] = 3 và num[7] = 5
- b. low[7] = 6 và num[7] = 7
- c. low[7] = 7 và num[7] = 7
- d. All statements are not correct
- e. low[7] = 4 và num[7] = 7
- f. low[7] = 5 và num[7] = 7

There are $n = 3$ jobs, j jobs starting at S_j and ending at F_j. Two jobs are compatible if they do not overlap. Requirements: Find the maximum subset of mutually compatible jobs.

Consider the following greedy algorithm:

- Sort the jobs in ascending order of starting time S_j;
- At each step, select in turn the sorted priority jobs that are compatible with all the selected jobs.

What sets of values GIVE the optimal solution with the above algorithm?

Select one or more:

- a. $S_1 = 3, S_2 = 7, S_3 = 2, F_1 = 5, F_2 = 10, F_3 = 7$
- b. $S_1 = 3, S_2 = 7, S_3 = 4, F_1 = 5, F_2 = 10, F_3 = 15$
- c. $S_1 = 3, S_2 = 7, S_3 = 1, F_1 = 5, F_2 = 10, F_3 = 15$
- d. $S_1 = 3, S_2 = 7, S_3 = 2, F_1 = 5, F_2 = 10, F_3 = 8$

Time left 0:39:41

Given a undirected graph $G = (V, E)$ in which $V = \{1, 2, 3, 4, 5\}$ is the set of nodes and $E = \{(1, 2), (1, 5), (2, 3), (2, 4),$ [illegible] set of edges. What is the sequence of nodes visited by the Breadth-First Search (BFS) from the node 2 on G?

Select one:

- a. All answers are not correct
- b. 2,1,3,4,5
- c. 2,1,5,3,4
- d. 2, 5, 4, 1, 3
- e. 2, 3, 4, 1, 5

There are 6 cities 1, 2, 3, 4, 5, 6. There are connections between these cities including:

Time left 0:32:2

- City 1 is connected with city 2
- City 1 is connected with city 5
- City 3 is connected with city 5
- City 3 is connected with city 6
- City 4 is connected with city 5
- City 4 is connected with city 6

From each city, there is a bus going to other cities along the connections above:

- Bus of city 1 has price 30 and can move to at most 2 other cities
- Bus of city 2 has price 40 and can move to at most 4 other cities
- Bus of city 3 has price 90 and can move to at most 1 other cities
- Bus of city 4 has price 50 and can move to at most 3 other cities
- Bus of city 5 has price 20 and can move to at most 1 other cities
- Bus of city 6 has price 20 and can move to at most 5 other cities

To travel from city a to city b, we can use multiple buses: use the bus of city a and go directly to city i1, then, use the bus of city i1 and go directly to city i2, ... finally, use the bus of city ik and go directly to city b.

What is the minimal amount of money paid to travel from city 1 to city 6?

- a. All answers are not correct
- b. 50
- c. 60
- d. 90
- e. 70

Time left 0:29:27

Given following program described by a pseudo code in which the function **P** receives an array a, n, W, T, k as parameters (elem
are indexed from 1 to n) and **cnt** is a global variable.

```
P(a, n, W, T, k){
  for v = 0 to 1 do {
    if (k = n) then{
      if (T + v*a[k] = W) then cnt = cnt + 1;
    }else
      P(a, n, W, T + v*a[k], k+1);
  }
}
Main { // main function
  a = {2,3,6,7,4,5}; // array indexed from 1 to 6
  cnt = 0;
  P(a, 6, 12, 0, 1);
  print(cnt); // print the value cnt to the screen
}
```

What is the value of **cnt** printed out to the screen in the **Main** function?

- a. 8
- b. 5
- c. 2
- d. No answer is correct

√ 0.4

Time left 0:24:17

There are $n = 3$ objects. The object i has weight W_i and values C_i, $i = 1, \ldots, n$. Requirements: Find a way to put these objects into a bag of capacity $b = 4$ such that the total weight of the objects loaded in the bag is not more than b, and their total value is maximum.

Consider the following greedy algorithm:

- Sort objects in non-increasing order of the value of an weight unit (C_i/W_i), i.e.

$$\frac{C_{i_1}}{W_{i_1}} \geq \frac{C_{i_2}}{W_{i_2}} \geq \ldots \leq \frac{C_{i_n}}{W_{i_n}};$$

;

- Consider the items in turn in the sorted order, and put the item under consideration into the bag if the remaining capacity of the bag is enough to hold it (i.e. the sum of the weights of the items packed in the bag and the weight of the object under consideration) does not exceed b).

Which tuples do NOT give the optimal solution with the above algorithm?

Select one or more:

- ☐ a. $C_1 = 8, C_2 = 15, C_3 = 8, W_1 = 2, W_2 = 4, W_3 = 2$ 15
- ☐ b. All answers are not correct
- ☐ c. $C_1 = 8, C_2 = 15, C_3 = 8, W_1 = 3, W_2 = 4, W_3 = 1$ 16
- ☑ d. $C_1 = 8, C_2 = 15, C_3 = 8, W_1 = 2, W_2 = 4, W_3 = 3$
- ☑ e. $C_1 = 8, C_2 = 10, C_3 = 8, W_1 = 2, W_2 = 4, W_3 = 3$

Question 21

Not yet answered

Marked out of 1.00

Which statements are correct for the insertion sort (sắp xếp lựa chọn) on a sequence of n elements?

Time left 0:

Select one:

- a. Worst-case time complexity is $O(n^2)$ and best-case time complexity is O(nlogn)
- b. All statements are not correct
- c. Worst-case and best-case time complexity are both $O(nlogn)$
- d. Worst-case and best-case time complexity are both $O(n^2)$
- e. Worst-case time complexity is $O(n^2)$ and best-case time complexity is O(n)
- f. Worst-case and best-case time complexity are both $O(n^2logn)$

Question 22

Not yet answered

Marked out of 1.00

Given a sequence $a = a_1, a_2, \ldots, a_n$. The subsequence of a is defined as the sequence obtained by removing some elements of a.

Given the sequence a = 1, 2, 4, 5, 7, 8, 9, 2, 5, 6 and b = 2, 3, 1, 5, 4, 6, 8, 7, 8, 3. You are asked to compute the length of the longest subsequence (i.e. the maximum number of elements) that is both a subsequence of a and a subsequence of b.

- a. All answers are not correct
- b. 5
- c. 3
- d. 4
- e. 6

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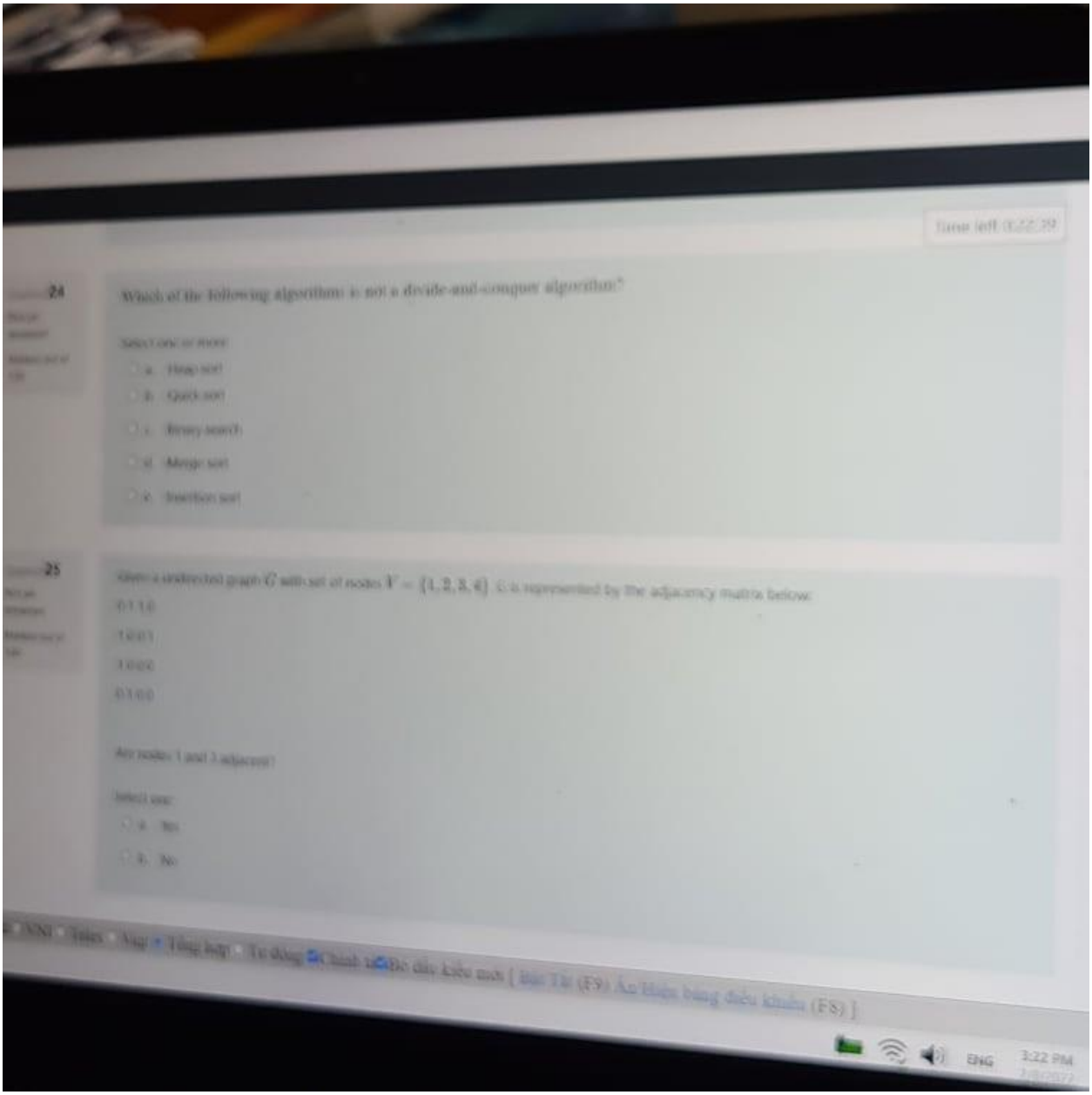
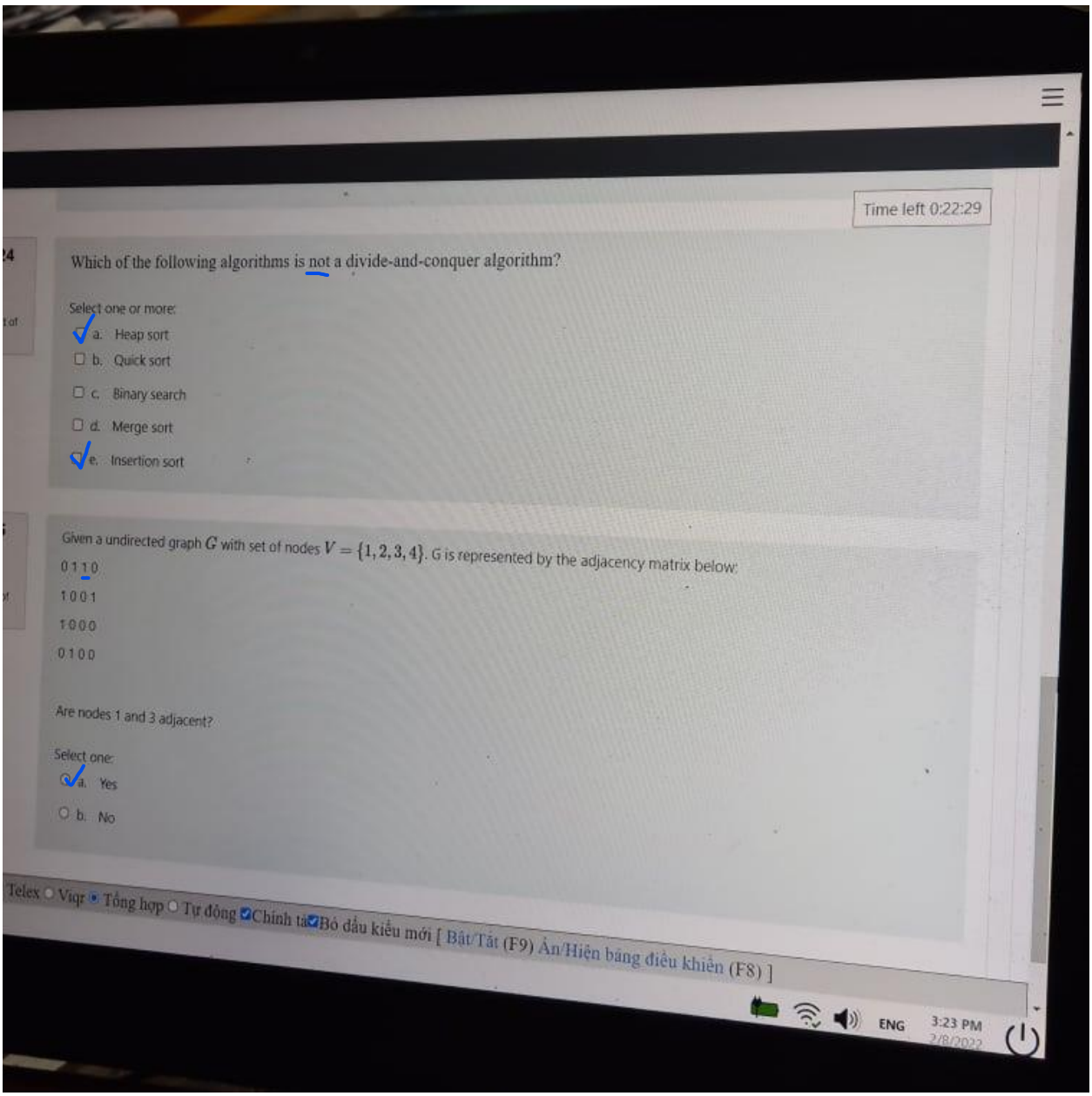
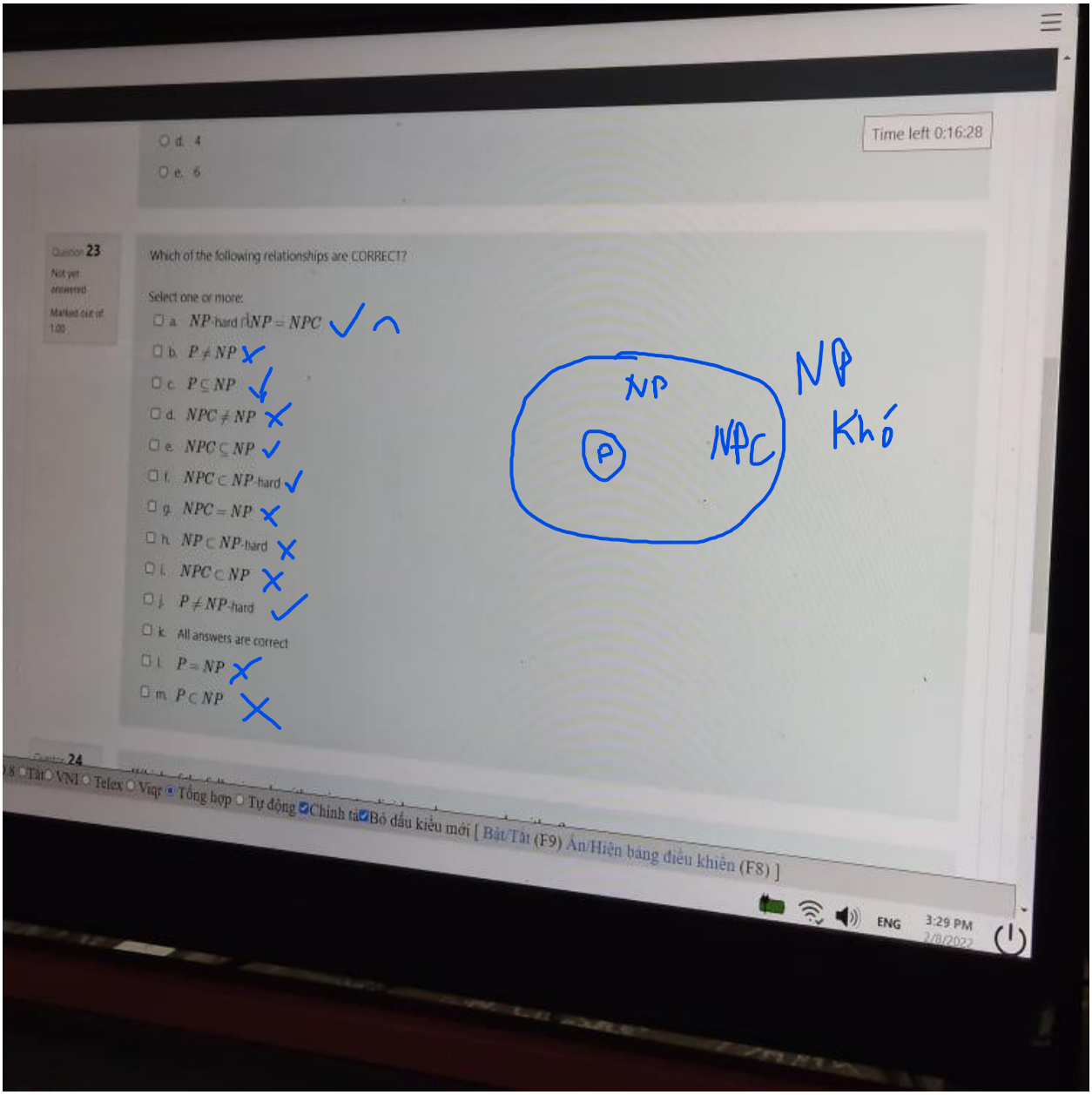
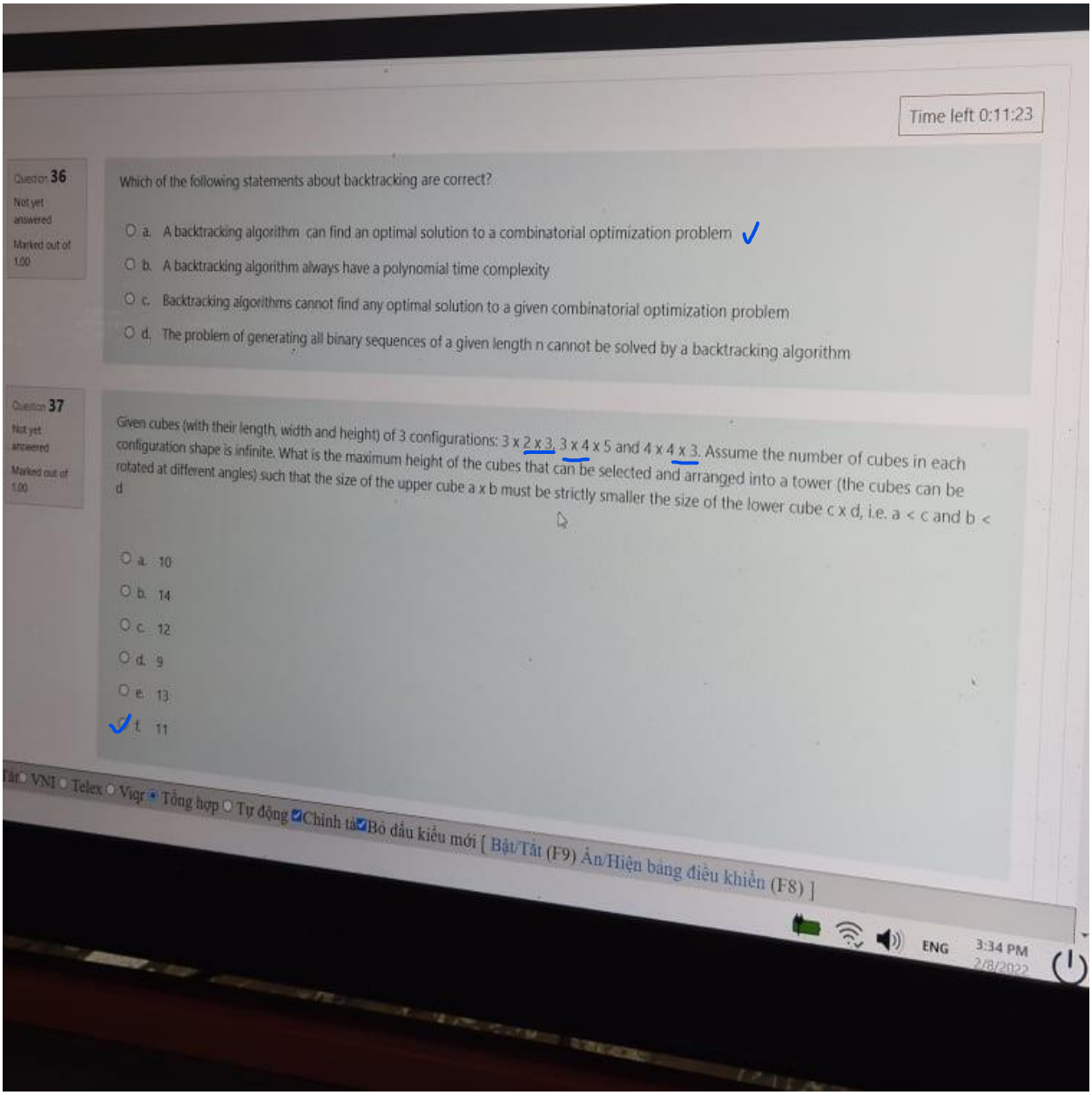
ENG


24
Which of the following algorithms is not a divide-and-conquer algorithm?
Select one or more:
a. Heap sort
b. Quick sort
c. Binary search
d. Merge sort
e. Insertion sort
25
0 1 1 0
1 0 0 1
1 0 0 0
0 1 0 0
Are nodes 1 and 3 adjacent?
Select one:
a. Yes
b. No
ENG
3:22 PM


Time left 0:22:29
Which of the following algorithms is not a divide-and-conquer algorithm?
Select one or more:
a. Heap sort
b. Quick sort
c. Binary search
d. Merge sort
e. Insertion sort
Given a undirected graph G with set of nodes $V = \{1, 2, 3, 4\}$. G is represented by the adjacency matrix below:
0 1 1 0
1 0 0 1
1 0 0 0
0 1 0 0
Are nodes 1 and 3 adjacent?
Select one:
a. Yes
b. No
Telex Viqr Tổng hợp Tự động Chính tả Bỏ dấu kiểu mới [Bật/Tắt (F9) Ẩn/Hiện bảng điều khiển (F8)]
ENG
3:23 PM


d. 4
e. 6
Time left 0:16:28
Question 23
Not yet answered
Marked out of 1.00
Which of the following relationships are CORRECT?
Select one or more:
a. NP-hard ∩ NP = NPC
b. P ≠ NP
c. P ⊆ NP
d. NPC ≠ NP
e. NPC ⊆ NP
f. NPC ⊂ NP-hard
g. NPC = NP
h. NP ⊂ NP-hard
i. NPC ⊂ NP
j. P ≠ NP-hard
k. All answers are correct
l. P = NP
m. P ⊂ NP
NP
P
NPC
NP
Khó
Question 24
Tắt VNI Telex Viqr Tổng hợp Tự động Chính tả Bỏ dấu kiểu mới [Bật/Tắt (F9) Ẩn/Hiện bảng điều khiển (F8)]
ENG
3:29 PM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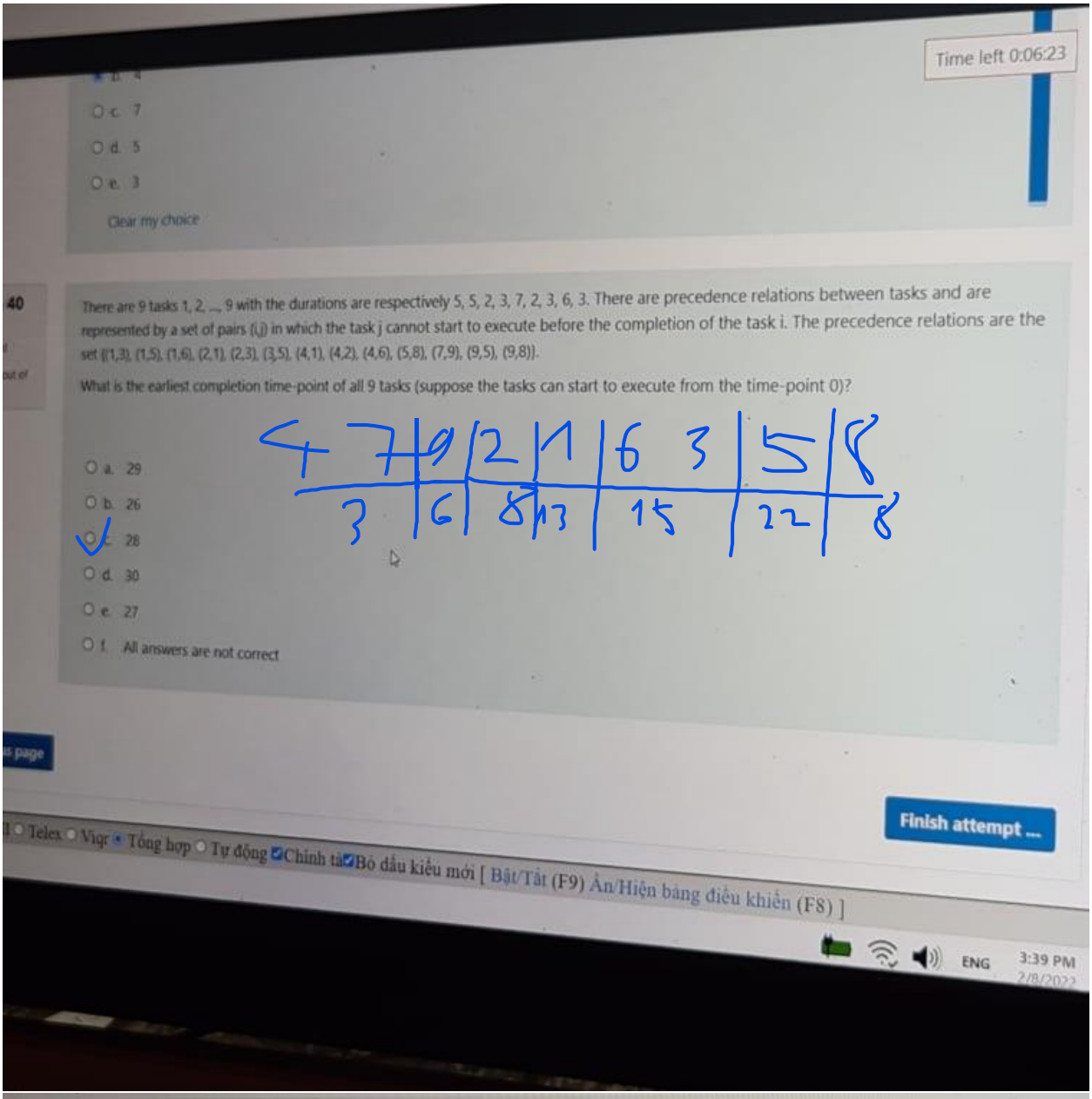
Question 36
Not yet answered
Marked out of 1.00
Which of the following statements about backtracking are correct?
a. A backtracking algorithm can find an optimal solution to a combinatorial optimization problem
b. A backtracking algorithm always have a polynomial time complexity
c. Backtracking algorithms cannot find any optimal solution to a given combinatorial optimization problem
d. The problem of generating all binary sequences of a given length n cannot be solved by a backtracking algorithm
Question 37
Not yet answered
Marked out of 1.00
Given cubes (with their length, width and height) of 3 configurations: 3 x 2 x 3, 3 x 4 x 5 and 4 x 4 x 3. Assume the number of cubes in each configuration shape is infinite. What is the maximum height of the cubes that can be selected and arranged into a tower (the cubes can be rotated at different angles) such that the size of the upper cube a x b must be strictly smaller the size of the lower cube c x d, i.e. a < c and b < d
a. 10
b. 14
c. 12
d. 9
e. 13
f. 11
Tắt VNI Telex Viqr Tổng hợp Tự động Chính tả Bỏ dấu kiểu mới [Bật/Tắt (F9) Ẩn/Hiện bảng điều khiển (F8)]
ENG
3:34 PM
2/8/2022



Given 9 elements 1, 2, ..., 9 lying on a line, where the element i is at the coordinate i. The elements 1,2..., 9 have weight 2, 6, 8, 1, 7, 4, 10, 4, 5 respectively. You are asked to choose a subsequence S of element $i_1 < i_2 < ... < i_k$ from these 9 elements such that the distance between 2 elements i_j and i_{j+1} (j = 1, ..., k-1) is greater than or equal to 2 and is smaller or equal to 4 ($2 <= i_{j+1} - i_j <= 4$) and the sum of the weight of these elements is maximum. What is this sum?

a. 35
b. All answers are not correct
c. 34
d. 30
e. 32

The COVID19 pandemic is complicated all over the world. Vietnam is no exception. Many people have died from the disease. Data analysis company XTEC wants to calculate the number of deaths by age: under 15, from 15 to 20, from 20 to 40, from 40 to 60 and over 60. Given a list of people disease deaths and the ages of these people, you are required compute the number of deaths according to the ages above.

What is the most suitable algorithm type to solve this problem?

Select one:

- a. Divide and conquer
- b. Graph algorithm
- c. All answers are not correct
- d. Adhoc
- e. Specific algorithm
- f. Dynamic programming

Each element of a Min-Heap (represented by a complete tree) has two fields (id, k) in which id is the identifier and k is the key of the element.
The Min-Heap has following operations:

Time left 0:53:00

- insertHeap(id, k): insert an element with identifier id and key k into the Min-Heap
- deleteMin(): return the element (id, k) having minimal key and remove this element from the Min-Heap
- updateKey(id, k): update the element having identifier id with the new key k

Perform the sequence of operations over the Min-heap:

- insertHeap(1,4)
- insertHeap(2,9)
- insertHeap(3,3)
- insertHeap(4,7)
- insertHeap(5,6)
- insertHeap(6,1)
- insertHeap(7,2)
- insertHeap(8,5)
- insertHeap(9,10)
- deleteMin()

Which of the following statements are correct?

a. Element having identifier 1 is the left-child of the element having identifier 7

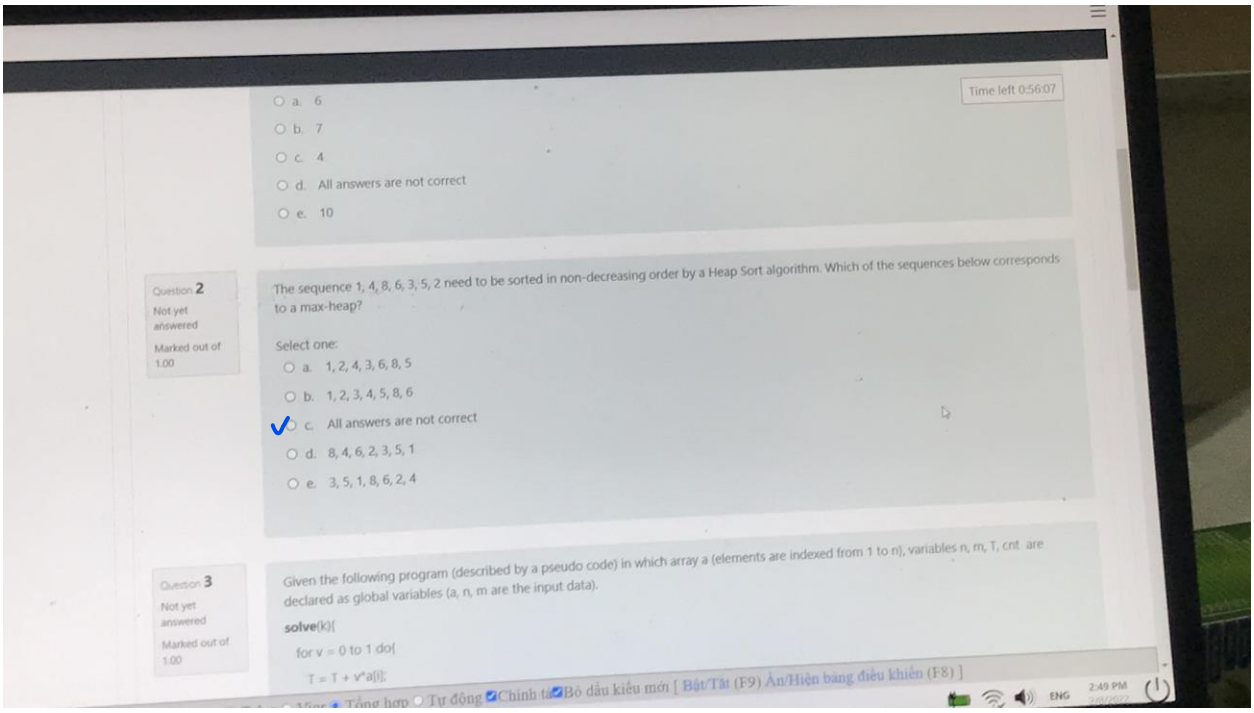
b. Element having identifier 4 is the right-child of the element having identifier 8

c. Element having identifier 1 is the right-child of the element having identifier 7

d. Element having identifier 2 is the left-child of the element having identifier 8

e. Element having identifier 2 is the right-child of the element having identifier 8

f. Element having identifier 4 is the left-child of the element having identifier 8



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a. 6
b. 7
c. 4
d. All answers are not correct
e. 10

Question 2
Not yet answered
Marked out of 1.00

The sequence 1, 4, 8, 6, 3, 5, 2 need to be sorted in non-decreasing order by a Heap Sort algorithm. Which of the sequences below corresponds to a max-heap?

Select one:
a. 1, 2, 4, 3, 6, 8, 5
b. 1, 2, 3, 4, 5, 8, 6
c. All answers are not correct
d. 8, 4, 6, 2, 3, 5, 1
e. 3, 5, 1, 8, 6, 2, 4

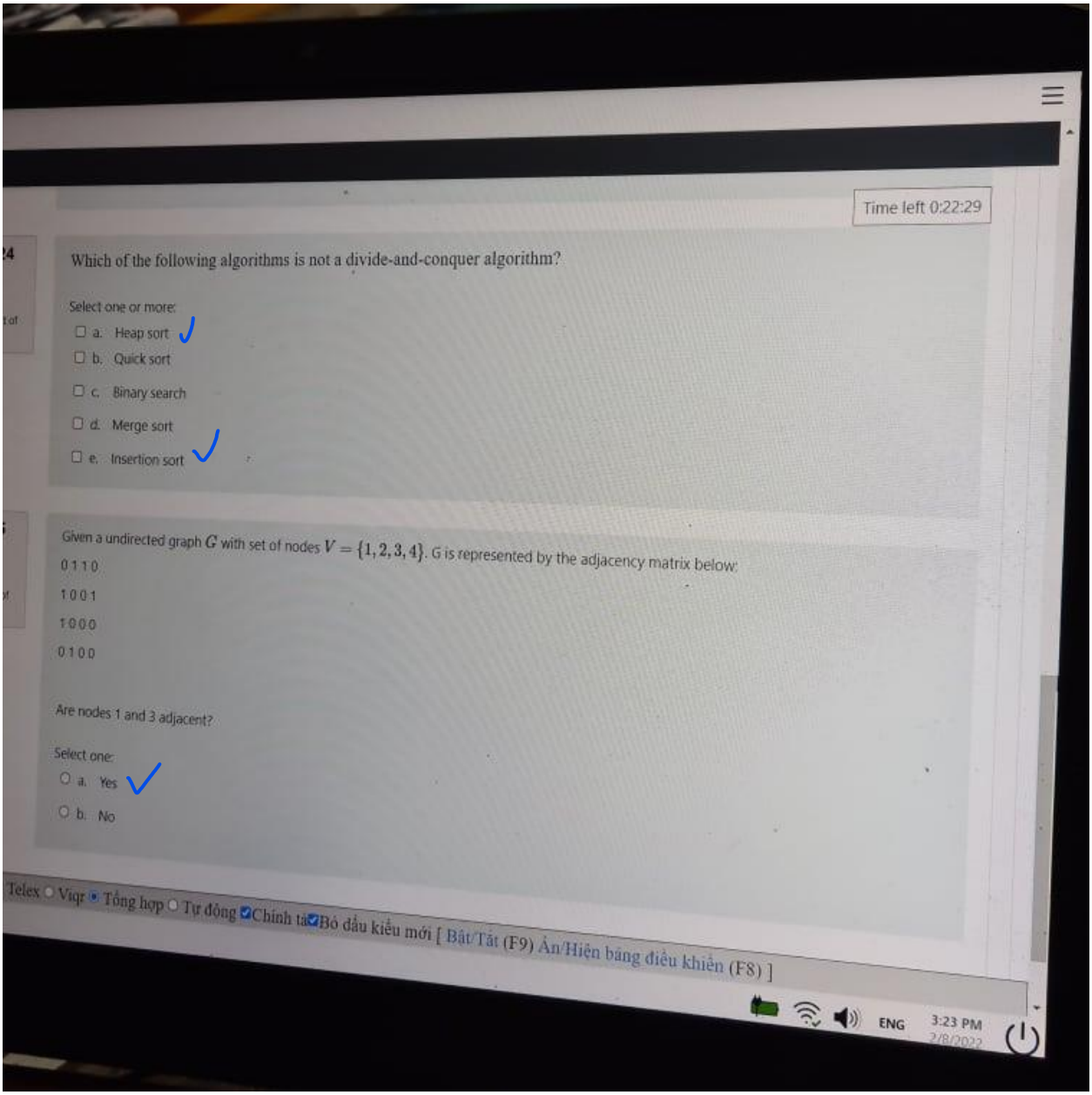
Question 3
Not yet answered
Marked out of 1.00

Given the following program (described by a pseudo code) in which array a (elements are indexed from 1 to n), variables n, m, T, cnt are declared as global variables (a, n, m are the input data).

```
solve(k){
  for v = 0 to 1 do{
    T = T + v*a[i];
```

Tổng hợp Tự động Chính tả Bỏ dấu kiểu mới [Bật/Tắt (F9) Ẩn/Hiện bảng điều khiển (F8)]

ENG 2:49 PM


Time left 0:22:29
Which of the following algorithms is not a divide-and-conquer algorithm?
Select one or more:
a. Heap sort
b. Quick sort
c. Binary search
d. Merge sort
e. Insertion sort
Given a undirected graph G with set of nodes $V = \{1, 2, 3, 4\}$. G is represented by the adjacency matrix below:
0 1 1 0
1 0 0 1
1 0 0 0
0 1 0 0
Are nodes 1 and 3 adjacent?
Select one:
a. Yes
b. No
Telex Viqr Tổng hợp Tự động Chính tả Bỏ dấu kiểu mới [Bật/Tắt (F9) Ẩn/Hiện bảng điều khiển (F8)]
ENG
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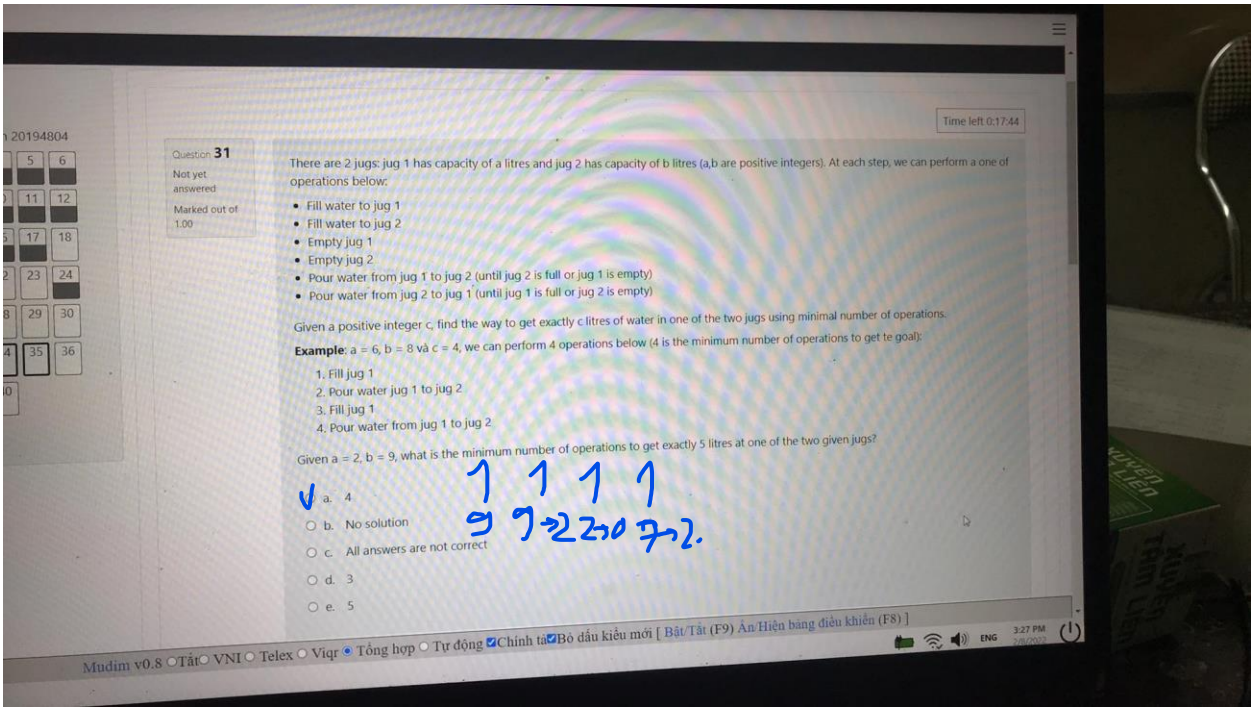
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Question 31
Not yet answered
Marked out of 1.00
There are 2 jugs: jug 1 has capacity of a litres and jug 2 has capacity of b litres (a,b are positive integers). At each step, we can perform a one of operations below:
Fill water to jug 1
Fill water to jug 2
Empty jug 1
Empty jug 2
Pour water from jug 1 to jug 2 (until jug 2 is full or jug 1 is empty)
Pour water from jug 2 to jug 1 (until jug 1 is full or jug 2 is empty)
Given a positive integer c, find the way to get exactly c litres of water in one of the two jugs using minimal number of operations.
Example: a = 6, b = 8 và c = 4, we can perform 4 operations below (4 is the minimum number of operations to get te goal):
1. Fill jug 1
2. Pour water jug 1 to jug 2
3. Fill jug 1
4. Pour water from jug 1 to jug 2
Given a = 2, b = 9, what is the minimum number of operations to get exactly 5 litres at one of the two given jugs?
a. 4
b. No solution
c. All answers are not correct
d. 3
e. 5
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ENG
3:27 PM