

Question 1

Not answered

Marked out of 1.00

🚩 Flag question

What is the height of spanning tree obtained from W_n by the breadth-first search, starting at the central vertex of W_n ?

Select one:

- ☐ a. n
- ☐ b. None of the other choices is correct
- ☐ c. 1
- ☐ d. $n-1$

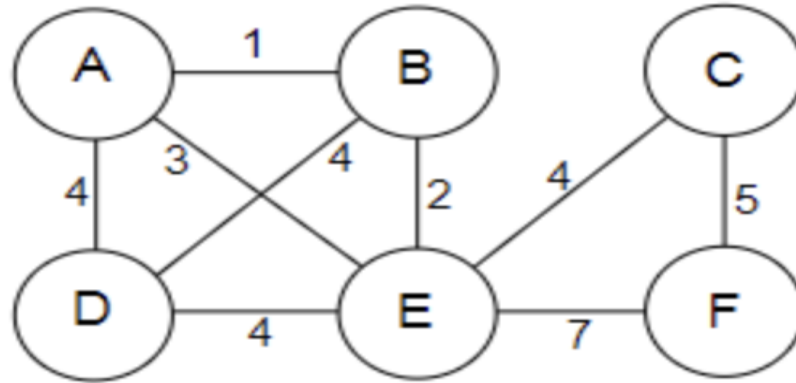
Question 2

Not answered

Marked out of 1.00

Flag question

What is the total weight of the minimum spanning tree produced by the graph below:




Select one:

- ☐ a. None of the other choices is correct
- ☐ b. 14
- ☐ c. 15
- ☐ d. 16
- ☐ e. 19

Question 3

Not answered

Marked out of 1.00

 Flag question

Find the height of a balanced full 4-ary tree with 125 leaves.


Answer:



Question 4

Not answered

Marked out of 1.00

 Flag question

Find the value of the prefix expression

$$* + 3 + 3 * 3 \uparrow 3 - 3 3 3$$


Answer:



Question 5

Not answered

Marked out of 1.00

 Flag question

How many leaves are there in a decision tree representing the sorting of a list of 5 elements?


Answer:



Question 6

Not answered

Marked out of 1.00

 Flag question

Find the value of the postfix expression

$1\ 2\ *\ 3\ \uparrow\ 4\ 5\ -\ 6\ 7\ -\ *\ -$


Answer:



Question 7

Not answered

Marked out of 1.00

 Flag question

Does there exist a simple undirected graph with 5 vertices whose degrees are:

1,2,1,2,1

Choose...



1,2,1,3,1

Choose...



1,0,1,2,4

Choose...



Question 8

Not answered

Marked out of 1.00

Flag question

Consider the undirected graph G with the adjacency matrix (in the order of vertices A, B, C, D)

$$\begin{bmatrix} 1 & 1 & 0 & 0 \\ 1 & 0 & 1 & 0 \\ 0 & 1 & 1 & 1 \\ 0 & 0 & 1 & 0 \end{bmatrix}$$

Determine if the statement is True.

Deg(B) = 2

Choose...



The graph has no loop.

Choose...



A is adjacent to C

Choose...



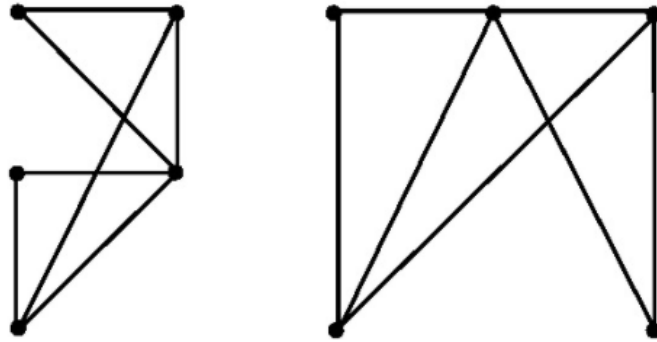
Question 9

Not answered

Marked out of 1.00

Flag question

Given two graphs. Choose the correct statement.



Select one:

- ☐ a. None of the other choices is correct
- ☐ b. They are not isomorphic because they do not have the same number of circuits of length 3
- ☐ c. They are not isomorphic because they do not have the same number of connected components
- ☐ d. They are isomorphic
- ☐ e. They are not isomorphic because they do not have the same degrees

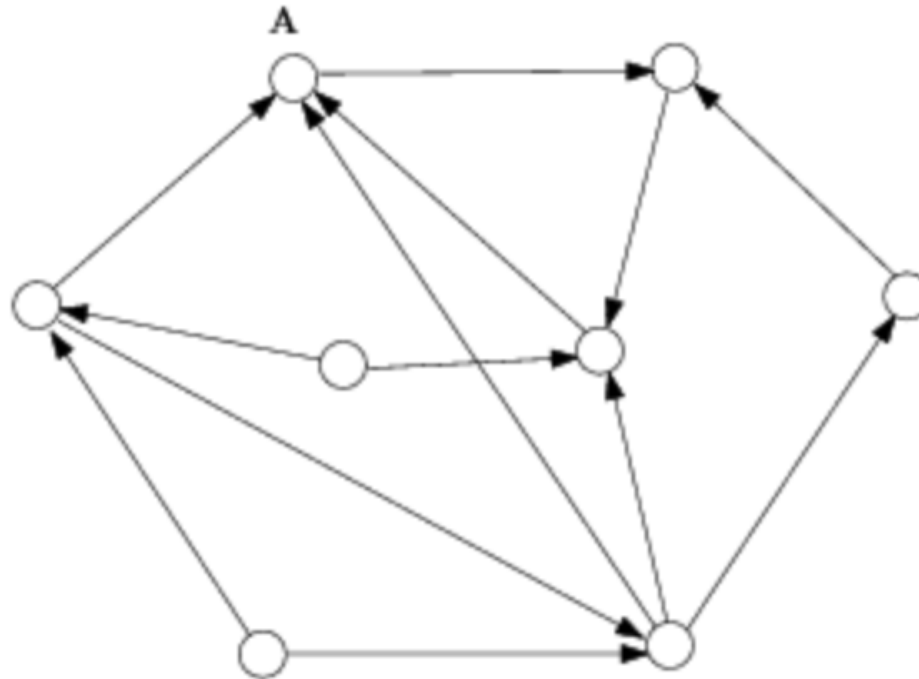
Question 10

Not answered

Marked out of 1.00

Flag question

How many strong connected components are there in this graph?



Answer:

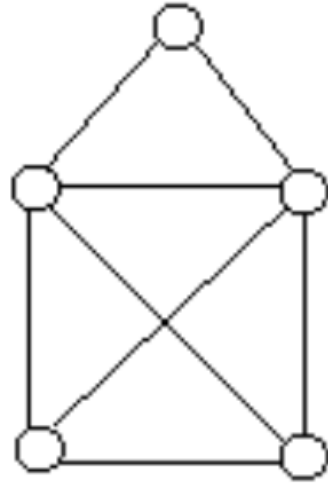
Question 11

Not answered

Marked out of 1.00

🚩 Flag question

Given the graph. Choose correct statement.



Select one:

- ☐ a. The graph has Hamilton paths but no Hamilton circuits
- ☐ b. The graph has Hamilton circuits
- ☐ c. The graph does not have Hamilton paths

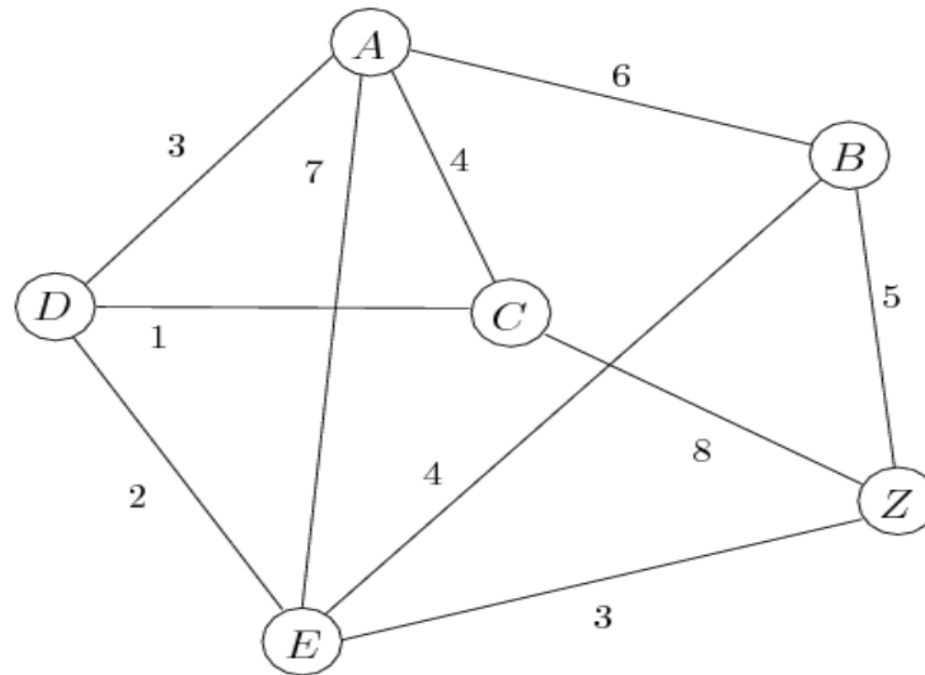
Question 12

Not answered

Marked out of 1.00

Flag question

Given a weighted graph. Which are the first 3 vertices chosen when using Dijkstra algorithm to find the shortest path from D to Z?



Select one:

- ☐ a. D, C, A
- ☐ b. None of the other choices is correct
- ☐ c. D, E, Z
- ☐ d. D, E, C
- ☐ e. D, C, E

Question 13

Not answered

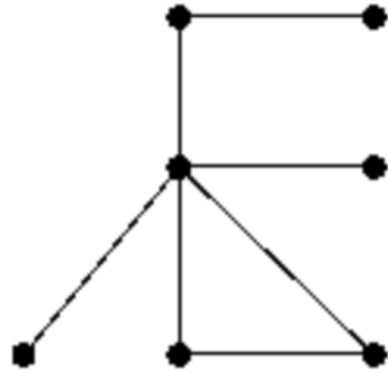
Marked out of 1.00

Flag question

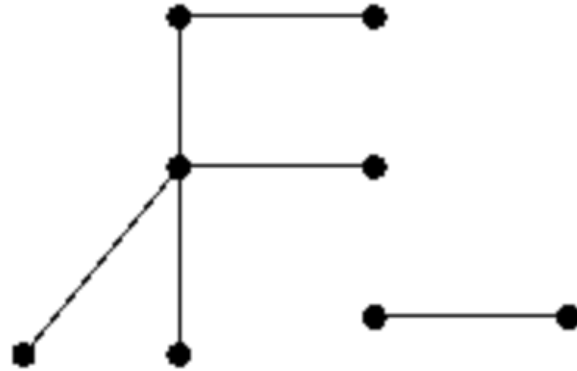
Which graph is a tree?

Select one:

☐ a.



☐ b.



☐ c.



☐ d.



Question 14

Not answered

Marked out of 1.00

Flag question

Given a message 5 letters A, 10 letters B, 15 letters C, 20 letters D, 50 letters E. Find the length of the bit string when encoding this message by a Huffman coding.


Answer:



Question 15

Not answered

Marked out of 1.00

 Flag question

Find the value of the prefix expression

$* + 4 - 4 \uparrow 3 / 4 2 3$

Answer:

