

Unit 4 - Week 2

Course outline

How does an NPTEL online course work?

Week 0

Week 1

Week 2

- Lecture 3 Part 1 - Bipartite Graph
- Lecture 3 Part 2 - Bipartite Graph
- Lecture 4 Part 1 - Diameter of a graph; Isomorphic graphs
- Lecture 4 Part 2 - Diameter of a graph; Isomorphic graphs
- Week 2 Lecture material
- Quiz : Assignment 2
- Week 2 Feedback
- Assignment 2 solutions

Week 3

Week 4

Week 5

Week 6

Week 7

Week 8

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Assignment 2

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2020-02-12, 23:59 IST.

1) Every Eulerian simple graph with an even number of vertices has an even number of edges

1 point

- True
 False

No, the answer is incorrect.

Score: 0

Accepted Answers:

False

2) Let G be a connected graph. A vertex $v \in V(G)$ is said to be a cut vertex of G if $G - v$ results in a disconnected graph. Let v be a cut vertex of a simple graph G . Then

1 point

- $\bar{G} - v$ is connected

 $\bar{G} - v$ is disconnected

No, the answer is incorrect.

Score: 0

Accepted Answers:

$\bar{G} - v$ is connected

3) Let G be a bipartite graph with $|X| = |Y| = n$ and the degree of every vertex is more than $\frac{n}{2}$, then

1 point

- G is Hamiltonian

 G is not Hamiltonian

No, the answer is incorrect.

Score: 0

Accepted Answers:

G is Hamiltonian

4) An independent set is a set of vertices in a graph, no two of which are adjacent. Every graph with diameter 10 has an independent set with

1 point

- at least 6 vertices
 at least 7 vertices
 at least 8 vertices

No, the answer is incorrect.

Score: 0

Accepted Answers:

at least 6 vertices

5) If G is a regular graph and $diam(G) = 3$, then

1 point

- $diam(\bar{G}) = 2$

 $diam(\bar{G}) = 3$

 $diam(\bar{G}) = 4$

No, the answer is incorrect.

Score: 0

Accepted Answers:

$diam(\bar{G}) = 2$

6) A k -dimensional cube or hypercube Q_k is the simple graph whose vertices are the k -tuples with entries in $\{0, 1\}$ and whose edges are the pair of k -tuples that differ in exactly one position. Is Q_3 isomorphic to the bipartite graph $G = (A \cup B, E)$ where $A = \{u, v, s, t\}$, $B = \{y, z, w, x\}$ and $E = \{(u, z), (u, w), (u, x), (v, y), (v, w), (v, x), (s, y), (s, z), (s, x), (t, y), (t, z), (t, w)\}$

1 point

- Yes
 No

No, the answer is incorrect.

Score: 0

Accepted Answers:

Yes

7) Compute the diameter of Q_6

1 point

- 3
 4
 5
 6

No, the answer is incorrect.

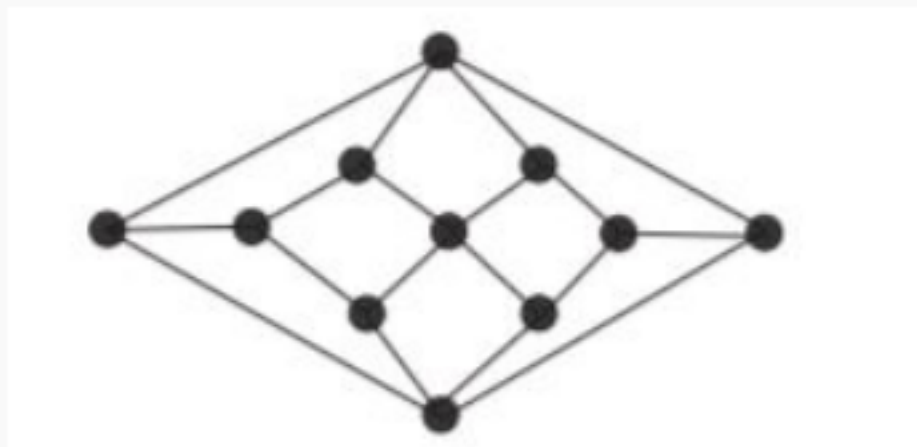
Score: 0

Accepted Answers:

6

8) Is the graph below Hamiltonian?

1 point



- Yes
 No

No, the answer is incorrect.

Score: 0

Accepted Answers:

No