

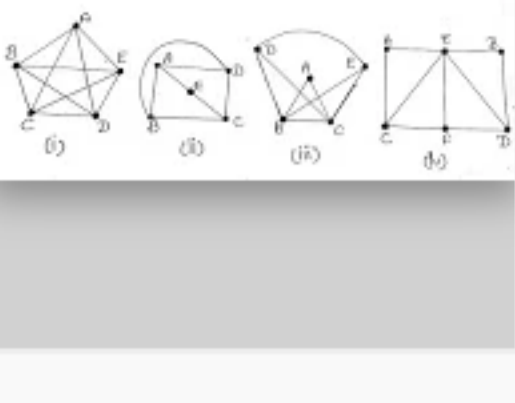
# Unit 8 - Week 7

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## Assignment 7

The due date for submitting this assignment has passed. **Due on 2019-09-18, 23:59 IST.**  
As per our records you have not submitted this assignment.

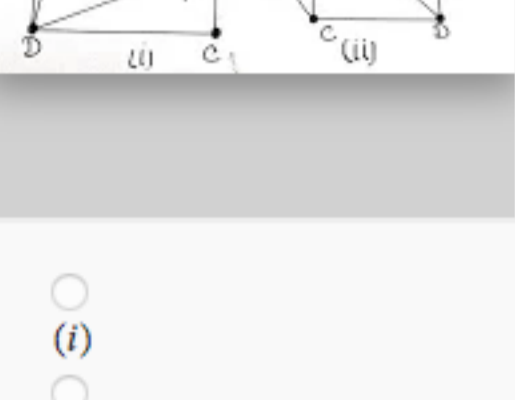
1) Which of the following graphs(s) is/are Hamiltonian? 1 point



- (i), (ii) and (iv) only
- (ii) and (iii) only
- (ii), (iii) and (iv) only
- (i), (ii), (iii) and (iv)

No, the answer is incorrect.  
Score: 0  
Accepted Answers: (i), (ii), (iii) and (iv)

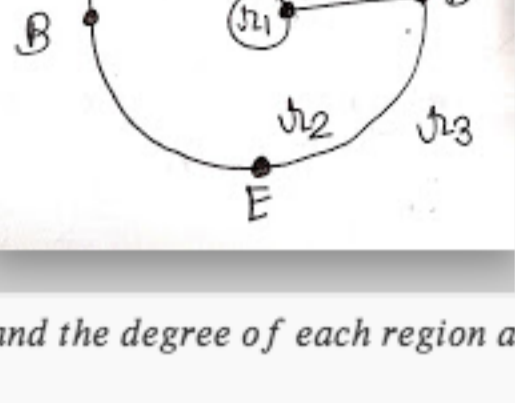
2) Which of the following graphs(s) is/are Eulerian but not Hamiltonian 1 point



- (i)
- (ii)
- (i) and (ii)
- none

No, the answer is incorrect.  
Score: 0  
Accepted Answers: (i)

3) The cycle or closed path that borders each region of the map shown below 1 point

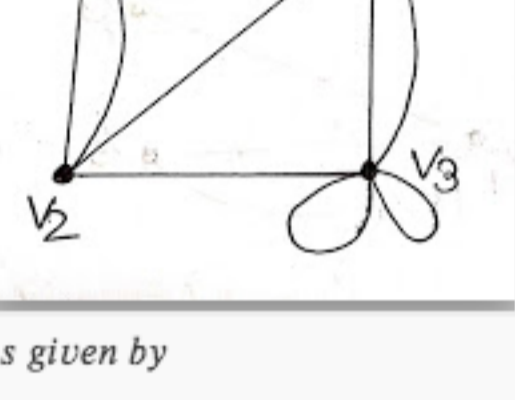


and the degree of each region are given by

- $r_1 = (C, C), r_2 = (A, D, C, C, D, E, B, A), r_3 = (A, D, E, B, A)$   
 $deg(r_1) = 1, deg(r_2) = 7, deg(r_3) = 4$
- $r_1 = (C, C), r_2 = (A, D, E, B, A), r_3 = (A, D, E, B, A)$   
 $deg(r_1) = 1, deg(r_2) = 4, deg(r_3) = 4$
- $r_1 = (C, C), r_2 = (A, D, C, D, E, B, A), r_3 = (A, D, E, B, A)$   
 $deg(r_1) = 1, deg(r_2) = 6, deg(r_3) = 4$
- $r_1 = (C, C), r_2 = (A, D, C, C, D, E, B, A), r_3 = (A, D, E, B, A)$   
 $deg(r_1) = 1, deg(r_2) = 6, deg(r_3) = 4$

No, the answer is incorrect.  
Score: 0  
Accepted Answers:  $r_1 = (C, C), r_2 = (A, D, C, C, D, E, B, A), r_3 = (A, D, E, B, A)$   
 $deg(r_1) = 1, deg(r_2) = 7, deg(r_3) = 4$

4) The adjacency matrix of the graph in the figure below : 1 point

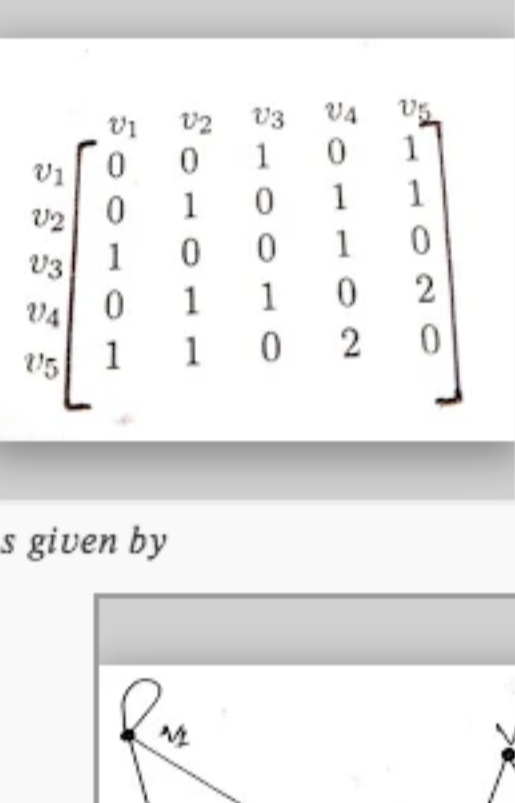


is given by

- $\begin{bmatrix} 1 & 2 & 0 & 0 \\ 2 & 0 & 1 & 1 \\ 0 & 1 & 2 & 2 \\ 0 & 1 & 2 & 0 \end{bmatrix}$
- $\begin{bmatrix} 1 & 2 & 0 & 0 \\ 2 & 0 & 1 & 1 \\ 0 & 1 & 1 & 2 \\ 0 & 1 & 2 & 0 \end{bmatrix}$
- $\begin{bmatrix} 1 & 1 & 0 & 0 \\ 2 & 0 & 1 & 1 \\ 0 & 1 & 2 & 2 \\ 0 & 1 & 2 & 0 \end{bmatrix}$
- $\begin{bmatrix} 2 & 2 & 0 & 0 \\ 2 & 0 & 1 & 1 \\ 0 & 1 & 4 & 2 \\ 0 & 1 & 2 & 0 \end{bmatrix}$

No, the answer is incorrect.  
Score: 0  
Accepted Answers:  $\begin{bmatrix} 1 & 2 & 0 & 0 \\ 2 & 0 & 1 & 1 \\ 0 & 1 & 2 & 2 \\ 0 & 1 & 2 & 0 \end{bmatrix}$

5) The undirected graph corresponding to the adjacency matrix 1 point

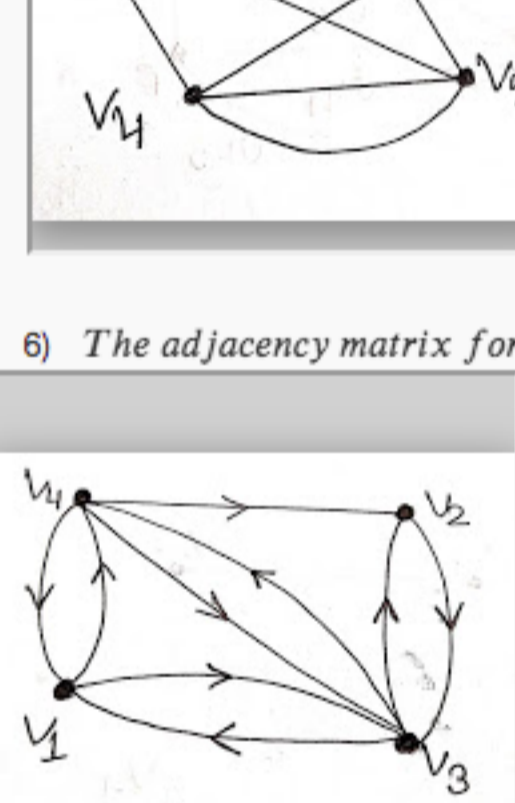


is given by

- 
- 
- 
- 

No, the answer is incorrect.  
Score: 0  
Accepted Answers:

6) The adjacency matrix for the directed graph 1 point

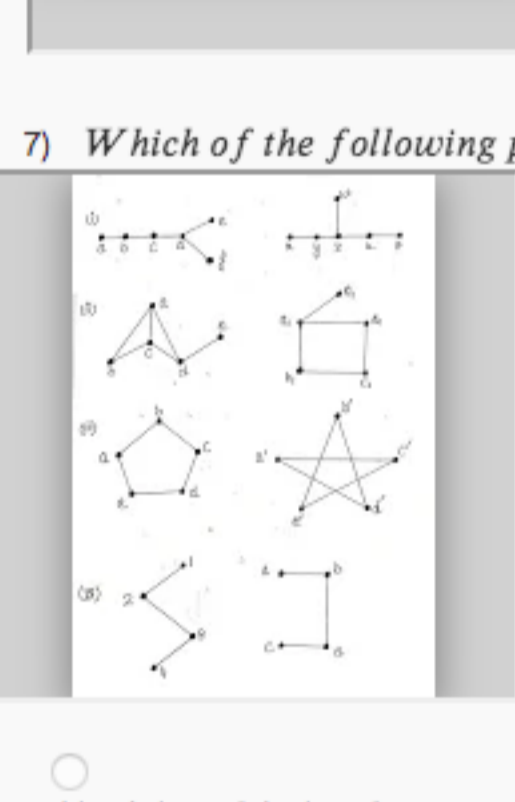


is given by

- $\begin{bmatrix} v_1 & v_2 & v_3 & v_4 \\ v_1 & 0 & 0 & 1 & 1 \\ v_2 & 0 & 0 & 1 & 0 \\ v_3 & 1 & 1 & 0 & 1 \\ v_4 & 1 & 1 & 0 & 0 \end{bmatrix}$
- $\begin{bmatrix} v_1 & v_2 & v_3 & v_4 \\ v_1 & 0 & 0 & 1 & 1 \\ v_2 & 0 & 0 & 1 & 0 \\ v_3 & 1 & 1 & 0 & 1 \\ v_4 & 1 & 1 & 0 & 1 \end{bmatrix}$
- $\begin{bmatrix} v_1 & v_2 & v_3 & v_4 \\ v_1 & 0 & 0 & 1 & 1 \\ v_2 & 0 & 0 & 1 & 0 \\ v_3 & 0 & 1 & 1 & 1 \\ v_4 & 1 & 0 & 1 & 1 \end{bmatrix}$
- $\begin{bmatrix} v_1 & v_2 & v_3 & v_4 \\ v_1 & 0 & 0 & 1 & 1 \\ v_2 & 0 & 0 & 1 & 0 \\ v_3 & 1 & 1 & 0 & 1 \\ v_4 & 1 & 1 & 0 & 0 \end{bmatrix}$

No, the answer is incorrect.  
Score: 0  
Accepted Answers:  $\begin{bmatrix} v_1 & v_2 & v_3 & v_4 \\ v_1 & 0 & 0 & 1 & 1 \\ v_2 & 0 & 0 & 1 & 0 \\ v_3 & 1 & 1 & 0 & 1 \\ v_4 & 1 & 1 & 0 & 0 \end{bmatrix}$

7) Which of the following pairs of graphs(s) is/are isomorphic? 1 point



- (i), (ii) and (iii) only
- (ii), (iii) and (iv) only
- (i) and (iii) only
- (iii) and (iv) only

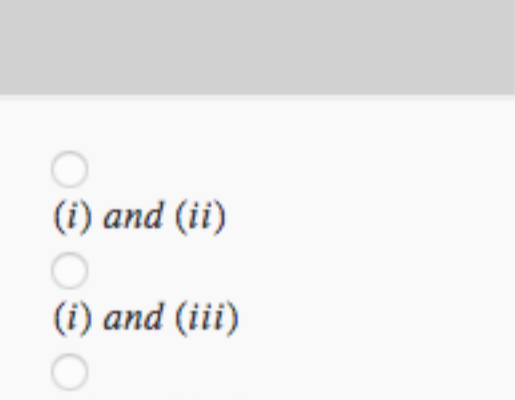
No, the answer is incorrect.  
Score: 0  
Accepted Answers: (ii) and (iv) only

8) The maximum number of edges possible in a planar graph with eight vertices is 1 point

- 6
- 10
- 18
- 12

No, the answer is incorrect.  
Score: 0  
Accepted Answers: 18

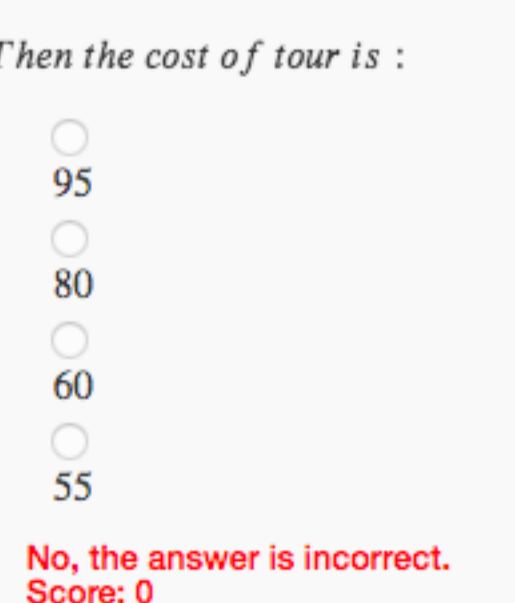
9) Which of the following graph(s) is/are nonplanar? 1 point



- (i) and (ii)
- (i) and (iii)
- (ii) and (iii)
- all (i), (ii) and (iii)

No, the answer is incorrect.  
Score: 0  
Accepted Answers: all (i), (ii) and (iii)

10) Consider the travelling salesman problem for the graph shown in the figure below : 1 point



Then the cost of tour is :

- 95
- 80
- 60
- 55

No, the answer is incorrect.  
Score: 0  
Accepted Answers: 80