CS & IT ENGINEERING

Graph Theory

DPP 04

Discussion Notes

[MCQ]

1. If a hypercube (Q_n) is given with edges 193, then the number of vertices will be
   (a) 6
   (b) 5
   (c) 7
   (d) None of these

192.

$e = n \cdot 2^{n-1}$

$n = 6$

$6 \times 2^{6-1}$

6×2^5

6×32

$= 192$

[MCQ]

2. consider the following statements:

S_1: Every hypercube graph is a bipartite graph.

S_2: Every bipartite graph is also a hypercube

Which of the following options is True?

(a) S_1 only

(b) S_2 only

(c) Both S_1 and S_2

(d) Neither S_1 nor S_2

[NAT]

3. A certain graph G has order 16 and size 29. The degree of each vertex of G is 3, 4 or 5. There are six vertices of degree 4. How many vertices of G having degree 5?

$n = 16 \quad e = 29$

$\sum d(v_i) = 2e$

$4 \times 6 + 3(10 - x) + 5x = 2 \times 29$

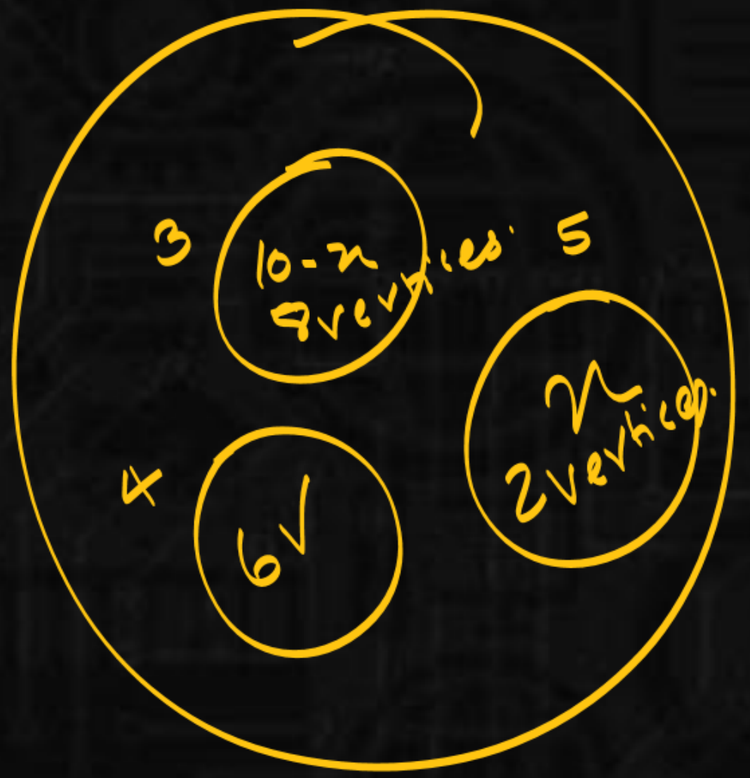
$24 + 30 - 3x + 5x = 58$

$2x = 58 - 54$

$2x = 4$

$x = 2$

24
30
54



[MCQ]

4. If the sequence x, 7, 7, 5, 5, 4, 3, 2 is graphical then what are the possible value of x $(0 \leq x \leq 4)$?

(a) 0 (b) 2

(c) 3 (d) 1

1, 3

7 7 5 5 4 3 2 x. (0 1 2 3 4)

x = 1.

x = 3

7 7 5 5 4 3 2 1

not graphical

n-1, n-1 . . . . . 1.

[MSQ]

5. Which of the following graphs are isomorphic graph?

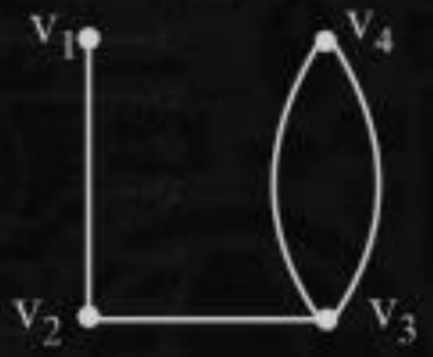
(a) G_1 and G_2 are isomorphic (T)

(b) G_3 and G_4 are isomorphic (F)

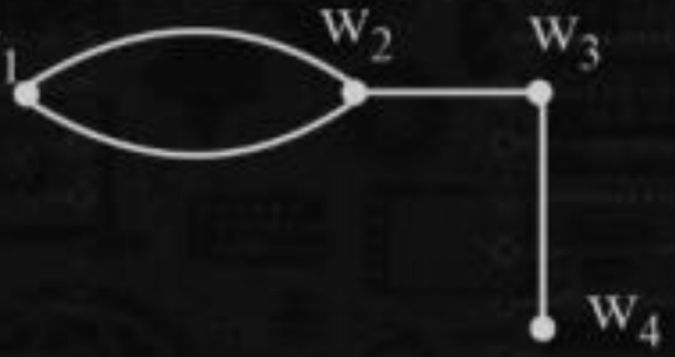
(c) G_1 and G_2 are not isomorphic (F)

(d) G_3 and G_4 are not isomorphic (T)

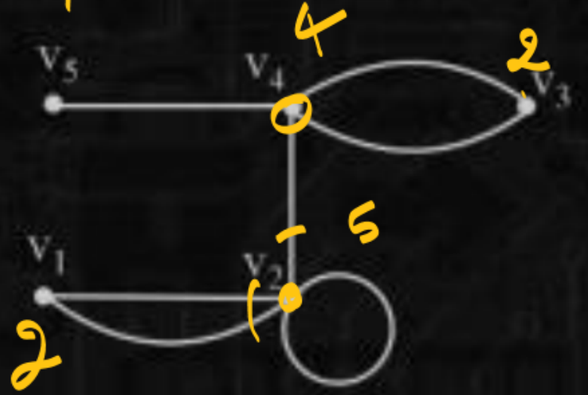
G_1:



G_2:



G_3:



G_4:


THANK YOU GW
SOLDIERS !