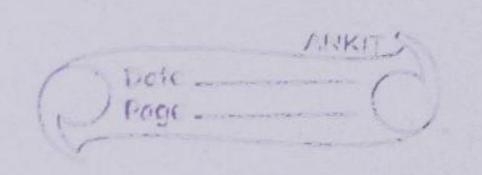
ASSIGNMENT (CSE-505) Name: Anish Kumar Nirala. Construct a graph Such that (a) alpha-o- Beta-o ie, (do-Bo) This condition is satisfied when the graph is a cyclic graph with Even number of vertices. Maximum independent set = \$1,3} (C4) As, do = Cardinality of maximum independent set = \$ Bo = Cardinality of minimum vertex cover set = \$ \$ do = Bo = 2 (b) alpha-o < Beta-o i.e, (do < Bo) This condition is satisfied when the graph is a complete graph: maximum independent set = \$11}
(a) Zipha-0= Reta-0 ie, (do=Bo) This Condition is Salisfied Dhen the graph is a cyclic graph Dith Even number of Vertices. Maximum independent Set= \(\frac{1}{1} \) 3 Maximum independent Set = \(\frac{1}{1} \) 4
(a) = 11pha-0= Beta-0 ie, (do=Bo) This condition is satisfied when the graph is a cyclic graph with Even number of vertices. Maximum independent set= \(\frac{1}{1} \) \(\frac{3}{2} \) Maximum independent set=\(\frac{1}{1} \) \(\frac{3}{2} \) As, \(\phi_0 = \text{Cardinality of maximum independent set=2} \) \(\frac{3}{2} = \text{Cardinality of minimum vertex cover set=2} \) (b) \(\frac{3}{2} = \text{Da-0} \) i.e, \(\left(\frac{3}{2} \) This condition is Satisfied when the graph is a complete graph. (c) \(\frac{3}{2} = \text{Darinimum independent set=\(\frac{1}{2} \) \(\frac{1}{2} = \frac{1}{2} \) maximum independent set=\(\frac{1}{2} \) \(\frac{1}{2} = \f
This Condition is satisfied when the graph is a cyclic graph with Even number of Vertices. maximum independent set = \(\frac{1}{3} \) \(\frac{1}{3} \) minimum Vertex cover set = \(\frac{1}{3} \) \(\frac{1}
maximum independent set = \$1,3} (C4) As, \$\alpha_0 = Cardinality of maximum independent set = \(\frac{1}{2} \) \(\beta_0 = Cardinality of maximum independent set = \(\frac{1}{2} \) \(\beta_0 = \beta_0 = \text{Covey set} = \(\frac{1}{2} \) (b) alpha_0 < \(\beta_0 = \text{Bo}_0 \) This condition is satisfied when the graph is a complete graph. (a) (b) (c4) (b) (c4) (c4) (b) (c4) (c4) (c5) (c5) (c6) (c6) (c6) (c7) (c6) (c7) (c6) (c7) (c7) (c7) (c7) (c7) (c4)
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maximum independent set = \$1,3} (C4) As, $0 = Cardinality$ of maximum independent set = \$1,3} $\beta = Cardinality$ of maximum independent set = \$1,3} $\beta = Cardinality$ of minimum vertex cover set = \$2. $\beta = Cardinality$ of minimum vertex cover set = \$2. (b) alpha-0 < peta-0 i.e, $(0 < \beta_0)$ This condition is satisfied when the graph is a complete graph. This paximum independent set = \$1,4,3} maximum independent set = \$1,4,3}
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(C4) As, $d_0 = Cardinality of maximum independent (ref = 2) \[\begin{align*} \text{Fo} = Cardinality of maximum independent (ref = 2) \text{Fo} = Cardinality of minimum vertex cover set = 2.} \text{$\text{$\frac{1}{2}}$ \text{$\frac{1}{2}}$ \\ \text{$\frac{1}{2}$ \text{$\frac{1}{2}$} \\ \text{$\frac{1}{2}$ \text{$\frac{1}{2}$} \\ \text{$\frac{1}{2}$} \text{$\frac{1}{2}$} \\ \te$
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=) do=βo=2 (b) alpha-0 < βeta-0 i.e., (do < βo) This condition is Satisfied When the graph is a complete graph. The graph of the graph is a complete graph of the graph o
(b) alpha-0 < Beta-0 i.e, (do < Bo) This condition is Satisfied When the graph is a complete graph. The proportion of the property of the p
i.e, (do < po) This condition is satisfied when the graph is a complete graph. The partial of the property of the graph is a complete graph. The partial of the graph is a complete graph. The partial of the graph is a complete graph is a complete graph. The partial of the graph is a complete graph is a complete graph. The partial of the graph is a complete graph is a complete graph. The partial of the graph is a complete graph is a complete graph. The partial of the graph is a complete graph. This condition is satisfied when the graph is a complete graph. The partial of the graph is a complete graph. The partial of the graph is a complete graph. The partial of the graph is a complete graph. The partial of the graph is a complete graph. The partial of the graph is a complete graph.
This condition is satisfied when the graph is a complete graph. maximum independent set = {1} maximum vertex cover set = {1, 4,3}
graph. repaximum independent set = {1} minimum vertex cover set = {1, 4,3}
mpximum independent set= {1} minimum vertex cover set = {1,4,3}
minimum vertex cover set = \(\frac{1}{4}, \frac{1}{4}, \frac{3}{4} \)
minimum vertex cover set = \(\frac{1}{4}, \frac{1}{4}, \frac{3}{4} \)
As, do = Cardinality of maximum independent set = 1
Bo = cardinality of minimum Voiter Coverset = 3
= 1 do < 80
(c) alpha-0 > Beta-0 ie, (do > Po)
This condition is Satisfied when the graph is the complement
of Complete graph (ie, Empty graph).
Donne (2)
maximum independent et = & 12,3,4}
a). on minimum vertex covericet= ? }
(Ka") do=4, Bo=0=) do780.

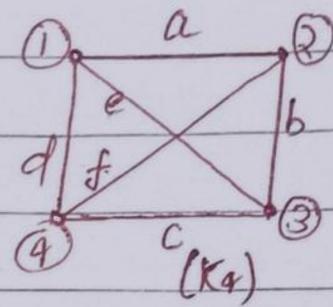


2. Construct a graph Such that

(a) alpha-1 = Beta-1 (VI=BI)

This condition is Satisfied When the graph is a complete graph with Even number of Vertices.

On a 5



maximum matching= fa, c} minium Edge Cover Set= ge,f}

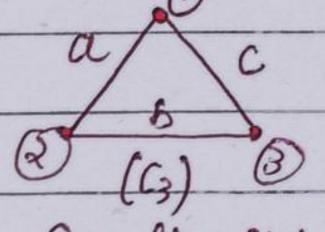
As, d1 = Cardinality of maximum matching = d

B1 = Cardinality of minimum Edge. Cover Set = 2

=) d1 = B1 = 2.

(b) alpha-1 < Beta-1 (XI < B1)

This condition is Satisfied when the graph is a Cyclic graph with odd number of Vertices.



minimum Edge. Cover Set = {a,c}

As, ds = Condinality of maximum matching = 1BL = Condinality of minimum Edge. Cover Set = 2

=) ds < Bs

(c) alpha-1 > Beta-1 (d) > B1)

This condition is not Salisfied for any graph Gi-

- Anish Kumaul Nirala CSE/18/10