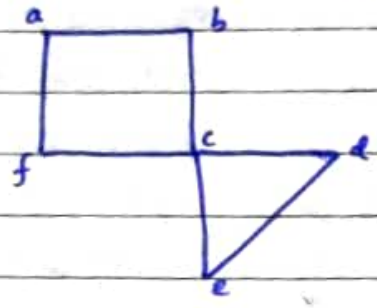
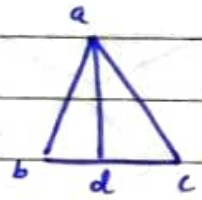
> Euler Circuit : All vertices should have even degree

Its a ckt where all the edges are visited exactly once



a → b → c → f → a ckt

a → b → c → d → c → e → f → a Euler ckt



no Euler ckt for this

> Algo to construct Euler ckt :

procedure Euler (G : connected graph with all vertices of even degree)

Circuit : A ckt in graph G begining at an arbitrary vertex with the edges added to form a path that returns to this

H : G with edges & vertices of the ckt removed . while H has edges Begin.

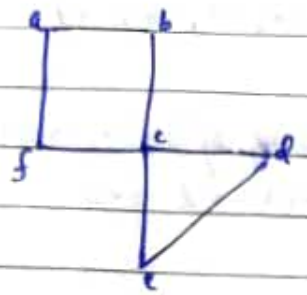
Subckt : A circuit at H begining a vertex in H that is also an end pt. of the ckt (path)

H : with all the edges & vertices of the subckt removed & all associated vertices

end

Circuit : With subcircuit inserted at appropriate vertex

eg>

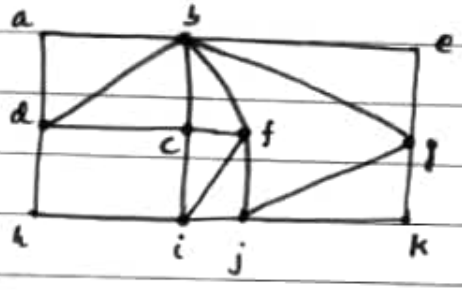


Circuit : $a \to b \to c \to f \to a$

Subckt : $c \to d \to e \to c$

Subckt inserted at appropriate value : $a \to b \to c \to d \to e \to c \to f \to a$

★★★ ★ >

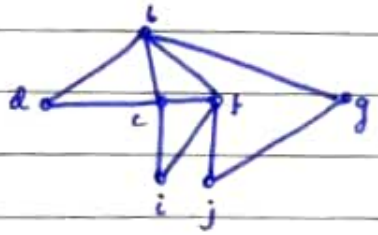


all vertices of even degree
∴ Euler ckt exists

Ckt : $a \to b \to c \to g \to k \to j \to i \to h \to d \to a$

~~Subckt$_1$:~~

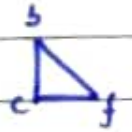
H :



Subckt$_1$: ~~$b \to g \to j \to i \to c \to d \to b$~~

$b \to g \to j \to f \to i \to c \to d \to b$

H_1 :



Subckt$_2$: $b \to c \to f \to b$

H_2 : -NA-

sub_2 in sub_1 : $b \to c \to f \to b \to g \to j \to f \to i \to c \to d \to b$

sub_1 in sub : $a \to b \to c \to f \to b \to g \to j \to f \to i \to c \to d \to b \to e \to f$
$\to k \to j \to i \to h \to d \to a$