> edges=c(c(0,1,1,0,0,0,0,0,0), c(1,0,1,0,0,0,0,1,0), c(1,1,0,1,0,0,0,0,0), c(0,0,1,0,1,1,0,0,0), c(0,0,0,1,0,1,1,0,0), c(0,0,0,1,1,0,0,0,0), c(0,0,0,0,1,0,0,1,1), c(0,1,0,0,0,0,1,0,1), c(0,0,0,0,0,0,1,1,0))

> nodeNames=c("A","B","C","D","E","F","G","H","I")

> adjMatrix=matrix(edges,nrow=9,ncol=9,byrow=TRUE,dimnames=list(nodeNames,nodeNames))

>

>

>

>

>

>

> adjMatrix

A B C D E F G H I

A 0 1 1 0 0 0 0 0 0

B 1 0 1 0 0 0 0 1 0

C 1 1 0 1 0 0 0 0 0

D 0 0 1 0 1 1 0 0 0

E 0 0 0 1 0 1 1 0 0

F 0 0 0 1 1 0 0 0 0

G 0 0 0 0 1 0 0 1 1

H 0 1 0 0 0 0 1 0 1

I 0 0 0 0 0 0 1 1 0

> library("igraph")

Attaching package: ‘igraph’

The following objects are masked from ‘package:stats’:

decompose, spectrum

The following object is masked from ‘package:base’:

union

Warning message:

package ‘igraph’ was built under R version 3.6.3

> g=graph\_from\_adjacency\_matrix(adjMatrix, mode="undirected")

> g

IGRAPH 1918485 UN-- 9 12 --

+ attr: name (v/c)

+ edges from 1918485 (vertex names):

[1] A--B A--C B--C B--H C--D D--E D--F E--F E--G G--H G--I H--I

> edge\_betweenness(g)

[1] 4.0 4.0 6.5 9.5 9.5 6.5 4.0 4.0 9.5 6.5 4.0 4.0

> cluster\_edge\_betweenness(g,weights=NULL,directed=FALSE)

IGRAPH clustering edge betweenness, groups: 3, mod: 0.42

+ groups:

$`1`

[1] "A" "B" "C"

$`2`

[1] "D" "E" "F"

$`3`

[1] "G" "H" "I"