**MatLab Code for Temperature Indices**

% Tr is the value of temperature index of one vertex.

x = input('Enter the value of Tr:');

% Ts is the value of temperature index of second vertex.

y = input('Enter the value of Ts:');

% e1, e2 and e3 are the values of Edge Partition.

e1 = input('Enter the value of e1:');

e2 = input('Enter the value of e2:');

e3 = input('Enter the value of e3:');

a = e1 \* ((x + x)^2);

b = e2 \* ((x + y)^2);

c = e3 \* ((y + y)^2);

d = a + b + c;

% First Hyper Temperature Index

fprintf('\nThe value of HT1 is: %.2f\n', d);

a1 = e1 \* (1/sqrt(x + x));

b1 = e2 \* (1/sqrt(x + y));

c1 = e3 \* (1/sqrt(y + y));

d1 = a1 + b1 + c1;

% Sum-Connectivity Temperature Index

fprintf('\nThe value of ST is: %.2f\n', d1);

a2 = e1 \* ((x \* x)^2);

b2 = e2 \* ((x \* y)^2);

c2 = e3 \* ((y \* y)^2);

d2 = a2 + b2 + c2;

% Second Hyper Temperature Index

fprintf('\nThe value of HT2 is: %.2f\n', d2);

a3 = e1 \* (1/sqrt(x^2));

b3 = e2 \* (1/sqrt(x \* y));

c3 = e3 \* (1/sqrt(y^2));

d3 = a3 + b3 + c3;

% Product-Connectivity Temperature Index

fprintf('\nThe value of PT is: %.2f\n', d3);

a4 = e1 \* (sqrt(x^2));

b4 = e2 \* (sqrt(x \* y));

c4 = e3 \* (sqrt(y^2));

d4 = a4 + b4 + c4;

% Reciprocal Product-Connectivity Temperature Index

fprintf('\nThe value of RPT is: %.2f\n', d4);

a5 = e1 \* ((2\*x)/(2\*sqrt(x^2)));

b5 = e2 \* ((x+y)/(2\*sqrt(x\*y)));

c5 = e3 \* ((2\*y)/(2\*sqrt(y^2)));

d5 = a5 + b5 + c5;

% Arithmetic-Geometric Temperature Index

fprintf('\nThe value of AGT is: %.2f\n', d5);

a6 = e1 \* (x^2 + x^2);

b6 = e2 \* (x^2 + y^2);

c6 = e3 \* (y^2 + y^2);

d6 = a6 + b6 + c6;

% Forgotten Temperature Index

fprintf('\nThe value of FT is: %.2f\n', d6);

a7 = e1 \* (sqrt(x^2 + x^2));

b7 = e2 \* (sqrt(x^2 + y^2));

c7 = e3 \* (sqrt(y^2 + y^2));

d7 = a7 + b7 + c7;

% Temperature Sombor Index

fprintf('\nThe value of TSO is: %.2f\n', d7);

a8 = e1 \* (1/(sqrt(2 \* x^2)));

b8 = e2 \* (1/(sqrt(x^2 + y^2)));

c8 = e3 \* (1/(sqrt(2 \* y^2)));

d8 = a8 + b8 + c8;

% Modified Temperature Sombor Index

fprintf('\nThe value of MTSO is: %.2f\n', d8);

a9 = e1 \* (2/(2 \* x));

b9 = e2 \* (2/(x + y));

c9 = e3 \* (2/(2 \* y));

d9 = a9 + b9 + c9;

% Harmonic Temperature Index

fprintf('\nThe value of HT is: %.2f\n', d9);

a10 = e1 \* ((2\*sqrt(x^2))/(2\*x));

b10 = e2 \* ((2\*sqrt(x\*y))/(x+y));

c10 = e3 \* ((2\*sqrt(y^2))/(2\*y));

d10 = a10 + b10 + c10;

% Geometric-Arithmetic Temperature Index

fprintf('\nThe value of GAT is: %.2f\n', d10);

a11 = e1 \* (sqrt((x-1)^2));

b11 = e2 \* (sqrt((x-1)\*(y-1)));

c11 = e3 \* (sqrt((y-1)^2));

d11 = a11 + b11 + c11;

% Reduced Reciprocal Product-Connectivity Temperature Index

fprintf('\nThe value of RRPT is: %.2f\n', d11);

a12 = e1 \* (sqrt(abs((2\*x-2)/(x^2))));

b12 = e2 \* (sqrt(abs((x+y-2)/(x\*y))));

c12 = e3 \* (sqrt(abs((2\*y-2)/(y^2))));

d12 = a12 + b12 + c12;

% Atom-Bond Connectivity Temperature Index

fprintf('\nThe value of ABCT is: %.2f\n', d12);