**MatLab Coding For Temperature Based Topological Indices**

1. **For First Hyper Temperature Index:**

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

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

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

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

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

result = e1 \* ((x + x).^2);

result1 = result + (e2 \* (x + y).^2);

result2 = result1 + (e3 \* (y + y).^2);

fprintf('\nThe value of HT1 is: %.2f\n', result2);

1. **For Second Hyper Temperature Index:**

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

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

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

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

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

result = e1 \* ((x \* x).^2);

result1 = result + (e2 \* (x \* y).^2);

result2 = result1 + (e3 \* (y \* y).^2);

fprintf('\nThe value of HT2 is: %.2f\n', result2);

1. **Sum-Connectivity Temperature Index:**

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

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

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

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

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

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

result1 = result + (e2 \* 1/sqrt(x + y));

result2 = result1 + (e3 \* 1/sqrt(y + y));

fprintf('\nThe value of ST is: %.2f\n', result2);

1. **Temperature Index of Product-Connectivity:**

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

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

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

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

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

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

result1 = result + (e2 \* 1/sqrt(x \* y));

result2 = result1 + (e3 \* 1/sqrt(y^2));

fprintf('\nThe value of PT is: %.2f\n', result2);

1. **The Temperature Index for Reciprocal Product-Connectivity:**

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

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

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

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

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

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

result1 = result + (e2 \* sqrt(x \* y));

result2 = result1 + (e3 \* sqrt(y^2));

fprintf('\nThe value of RPT is: %.2f\n', result2);

1. **Arithmetic-Geometric Temperature Index:**

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

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

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

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

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

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

result1 = result + (e2 \* (x+y)/(2\*sqrt(x\*y)));

result2 = result1 + (e3 \* (2\*y)/(2\*sqrt(y^2)));

fprintf('\nThe value of AGT is: %.2f\n', result2);

1. **Forgotten temperature Index:**

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

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

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

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

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

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

result1 = result + (e2 \* (x^2 + y^2));

result2 = result1 + (e3 \* (y^2 + y^2));

fprintf('\nThe value of FT is: %.2f\n', result2);

1. **Temperature Sombor Index:**

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

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

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

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

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

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

result1 = result + (e2 \* sqrt(x^2 + y^2));

result2 = result1 + (e3 \* sqrt(y^2 + y^2));

fprintf('\nThe value of TSO is: %.2f\n', result2);

1. **Modified Temperature Sombor Index:**

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

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

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

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

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

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

result1 = result + (e2 \* (1/(sqrt(x^2 + y^2))));

result2 = result1 + (e3 \* (1/(sqrt(2 \* y^2))));

fprintf('\nThe value of MTSO is: %.2f\n', result2);

1. **Harmonic Temperature Index:**

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

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

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

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

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

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

result1 = result + (e2 \* 2/(x + y));

result2 = result1 + (e3 \* 2/(2 \* y));

fprintf('\nThe value of TH is: %.2f\n', result2);

1. **Geometric-Arithmatic Temperature Index:**

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

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

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

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

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

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

result1 = result + (e2 \*(2\*sqrt(x\*y))/(x+y));

result2 = result1 + (e3 \*(2\*sqrt(y^2))/(2\*y));

fprintf('\nThe value of GAT is: %.2f\n', result2);

1. **Reduced Reciprocal Product-Connectivity Temperature Index:**

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

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

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

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

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

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

result1 = result + (e2 \* sqrt((x-1)\*(y-1)));

result2 = result1 + (e3 \* sqrt((y-1).^2));

fprintf('\nThe value of RRPT is: %.2f\n', result2);

1. **Atom-bond Connectivity(ABC) Temperature Index:**

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

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

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

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

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

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

result1 = result + (e2 \* sqrt(abs((x+y-2)/(x\*y))));

result2 = result1 + (e3 \* sqrt(abs((2\*y-2)/(y^2))));

fprintf('\nThe value of ABCT is: %.2f\n', result2);