An Application of Nano Topological Spaces with Decision Making Problem in Medical Field

R. Jeevitha[a], M.Sangeetha[b], S.Kannaki[c], and D.Vidhya[d]

[a]
Department of Mathematics, Dr.N.G.P. Institute of Technology,
Coimbatore , Tamilnadu, India
[b]Department of Mathematics, Dr.N.G.P.Arts and Science college,Coimbatore , Tamilnadu, India
[c]Department of Mathematics, Dr.N.G.P.Arts and Science college, Coimbatore ,
Tamilnadu, India
[d]Department of Mathematics, Dr.N.G.P. Institute of Technology, Coimbatore , Tamilnadu, India

Abstract: In this article, a distinct approach in nano topology is used as the perception to reduce conditional attributes. It also studies the hazardous factors for the inception of Dengue fever. It can also be worn on any kind of situation to avoid problems in various field.

1. Introduction

Dengue is a debilitating viral fever which is escalated by Aedes mosquitoes among humans. Dengue has become a universal predicament since the second war of the nations and it is generally seen in more than 110 countries. The furtherance of infection is divided into 3 phases: namely Febrile, Critical and Recovery. The Febrile phase comprise high temperature and is affiliated with joint pain and head ache. The Critical phase is leakage of plasma from the blood vessels, mostly lasting for 1 to 2 days. The Recovery phase which encircles a fluid overload state would affect the brain. Approximately 150 million cases of Dengue fever are seen in tropical and subtropical regions of the world mainly in Asia, South America and Africa.

The symptoms of Dengue fever starts within the first week of the infection. It shows inflation in the body temperature, head ache, muscle pain, joint pain, vomiting and skin rash etc. A mosquito would contract with the virus by biting an infected human and then it escalate the virus on to the other person when it bites.

Some recommendations are prescribed for the precautions to avoid contracting the disease, Stagnant water around the house should be extracted, Mosquitoes should be stopped in their thoroughfare and extra care must be taken during mosquito happy hours.

Lellis Thivagar [1] has made a new idea of nano topology, it was represent in terms of resemblance and boundary region of a subset of a global using an equivalence relation on it. He studied some basic properties of nano topology and also formulated the notion of nano closed set, nano interior and nano closure. Lellis Thivagar [2] has done Nutrition Modeling Through Nano topology. Nano topological spaces with an application in Medical Diagnosis by A.Jayalakshmi and C.Janaki [4]. In this paper we can determine the risk factors for the inception of Dengue using the concept of Nano Topology.

Definition 1.1. [1] Let W be a not empty restricted set of component namely the universe and R be a proportionate relation on W called as the indiscernibility relation. Hence W is separated into disjoint proportionate courses. Let Y is a subset of W , then

(a) The lower approximation : .
(b) The upper approximation : .
(c) The boundary region : .
Definition 1.2. [4] CORE is given by .
3. DENGUE FEVER VITAL FACTOR
ALGORITHM:
CASE I : Patients with Dengue Fever
Step 1. Find the equivalence classes of U corresponding to C.
Step 2. Find the lower approximation, upper approximation and boundary region by nano topology
Step 3. Remove the attributes A from C and find lower approximation, upper approximation and boundary region corresponding to C-A create the nano topology .
Step 4. Check .
Step 5. Do the same steps 2 to 4 for all attributes in C.
Step 6. Get core value from 1 to 5.
CASE II : Patients with out Dengue Fever
Do the same steps.

Patients	F	HA	V	MJP	SR	LLBP	B	Results

	F	MJP	HA	V	SR	B	LLBP	D
P₁	✓	✓			✓	✓		✓
P₂	✓			✓		✓	✓	✓
P₃	✓	✓			✓	✓		
P₄	✓		✓			✓		✓
P₅	✓		✓					
P₆	✓	✓	✓	✓		✓	✓	✓
P₇	✓	✓			✓	✓		
P₈	✓		✓			✓		
P₉	✓		✓					
P₁₀	✓	✓	✓	✓		✓	✓	✓
P₁₁		✓	✓		✓			
P₁₂		✓			✓	✓		
P₁₃	✓		✓					
P₁₄		✓	✓		✓			
P₁₅	✓			✓		✓	✓	✓

Table 1: PATIENT SURVEY

Here $U = \bigcup_{i=1}^{15} P_i$ is the set of patients and the attributes A is equal to F=FEVER, MJP=MUSCLE AND JOIT PAIN, HA=HEAD ACHE, V=VOMITING, SR=SKIN RASHES, B=BLEEDING, LLBP=LOW LEVEL BLOOD PLATELETS. Here C is denoted as Condition attributes ={ F, MJP, HA,V, SR, B, LLBP} and D is denoted as Decision attributes ={Dengue Fever}.

CASE I : PATIENTS WITH DENGUE FEVER

Assume X = {P₁, P₂,P₄, P₆, P₁₀, P₁₅} be the set of dengue fever patients then U/R(C) = {{P₁, P₃, P₇}, {P₂, P₁₅}, {P₄, P₈}, {P₅, P₉, P₁₃}, {P₆,P₁₀}, {P₁₁, P₁₄}, {P₁₂}} and the nano topology is given by $\tau_{R(C)}(X) =$ {U, ϕ, {P₂, P₆, P₁₀, P₁₅}, {P₁,P₂, P₃, P₄, P₆, P₇, P₈,P₁₀, P₁₅}, {P₁, P₃, P₄, P₇, P₈}}.

Step 1. When the attribute " FEVER " is removed from C then U/R$_{(C-F)}$ = {{P₁, P₃, P₇, P₁₂}, {P₂,P₁₅}, {P₄, P₈}, {P₅, P₉,P₁₃}, {P₆,P₁₀}, {P₁₁, P₁₄}}, here the lower approximation, upper approximation and boundary region are given by L$_{(C-F)}$ (X) = {P₂, P₆, P₁₀, P₁₅}, U$_{(C-F)}$ (X) = {P₁,P₂, P₃, P₄, P₆, P₇, P₈, P₁₀, P₁₂, P₁₅}, B$_{(C-F)}$ (X) = {P₁, P₃, P₄, P₇, P₈, P₁₂}. Therefore the nano topology is given by $\tau_{R(C-F)}(X) =$ {U, ϕ, {P₂, P₆, P₁₀, P₁₅}, {P₁,P₂, P₃, P₄, P₆, P₇, P₈, P₁₀, P₁₂, P₁₅}, {P₁, H₃, P₄, P₇, P₈, P₁₂}}. Hence $\tau_{R(C-F)}(X) \neq \tau_{R(C)}(X)$.

Step 2. When the attribute " HEAD ACHE " is removed from C then U/R$_{(C-HA)}$ ={{P$_1$, P$_3$, P$_7$}, {P$_2$, P$_{15}$}, {P$_4$, P$_8$}, {P$_5$, P$_9$, P$_{13}$}, {P$_6$, P$_{10}$}, {P$_{11}$, P$_{14}$}, {P$_{12}$}}, here the lower approximation, upper approximation and boundary region are given by L$_{(C-HA)}$ (X) = {P$_2$, P$_6$, P$_{10}$, P$_{15}$}, U$_{(C-HA)}$ (X) = {P$_1$,P$_2$, P$_3$, P$_4$, P$_6$, P$_7$, P$_8$, P$_{10}$, P$_{15}$}, B$_{(C-HA)}$ (X) = {P$_1$, P$_3$, P$_4$, P$_7$, P$_8$}. Therefore the nano topology is given by $\tau_{R(C-HA)}(X) =$ {U, ϕ, {P$_2$, P$_6$, P$_{10}$, P$_{15}$}, {P$_1$,P$_2$, P$_3$, P$_4$, P$_6$, P$_7$, P$_8$, P$_{10}$,P$_{15}$}, {P$_1$, P$_3$, P$_4$, P$_7$, P$_8$}}. Hence $\tau_{R(C-HA)}(X) = \tau_{R(C)}(X)$.

Step 3. When the attribute "VOMITING " is removed from C then U/R$_{(C-V)}$ ={{P$_1$, P$_3$, P$_7$}, {P$_2$, P$_{15}$}, {P$_4$, P$_8$}, {P$_5$, P$_9$, P$_{13}$}, {P$_6$, P$_{10}$}, {P$_{11}$, P$_{14}$}, {P$_{12}$}}, here the lower approximation, upper approximation and boundary region are given by L$_{(C-V)}$ (X) = {P$_2$, P$_6$, P$_{10}$, P$_{15}$}, U$_{(C-V)}$ (X) = {P$_1$,P$_2$, P$_3$, P$_4$, P$_6$, P$_7$, P$_8$, P$_{10}$, P$_{15}$}, B$_{(C-V)}$ (X) = {P$_1$, P$_3$, P$_4$, P$_7$, P$_8$}. Therefore the nano topology is given by $\tau_{R(C-V)}(X) =$ {U, ϕ, {P$_2$, P$_6$, P$_{10}$, P$_{15}$}, {P$_1$,P$_2$, P$_3$, P$_4$, P$_6$, P$_7$, P$_8$, P$_{10}$, P$_{15}$}, {P$_1$, P$_3$, P$_4$, P$_7$, P$_8$}}. Hence $\tau_{R(C-V)}(X) = \tau_{R(C)}(X)$.

Step 4. When the attribute " MUSCLE AND JOINT PAIN" is removed from C then U/R$_{(C- MJP)}$ ={{P$_1$, P$_3$, P$_7$}, {P$_2$, P$_{15}$}, {P$_4$, P$_8$}, {P$_5$, P$_9$, P$_{13}$}, {P$_6$, P$_{10}$}, {P$_{11}$, P$_{14}$}, {P$_{12}$}}, here the lower approximation, upper approximation and boundary region are given by L$_{(C- MJP)}$ (X) = {P$_2$, P$_6$, P$_{10}$,P$_{15}$}, U$_{(C- MJP)}$ (X) = {P$_1$,P$_2$,P$_3$, P$_4$, P$_6$, P$_7$, P$_8$, P$_{10}$,P$_{15}$}, B$_{(C-MJP)}$ (X) = {P$_1$,P$_3$,P$_4$,P$_7$,P$_8$}. Therefore the nano topology is given by $\tau_{R(C-MJP)}(X) =$ {U, ϕ, {P$_2$, P$_6$, P$_{10}$,P$_{15}$},{P$_1$,P$_2$,P$_3$, P$_4$, P$_6$, P$_7$, P$_8$, P$_{10}$,P$_{15}$}, {P$_1$,P$_3$,P$_4$,P$_7$,P$_8$}}. Hence $\tau_{R(C-MJP)}(X) = \tau_{R(C)}(X)$.

Step 5. When the attribute " SKIN RASHES" is removed from C then U/R$_{(C- SR)}$ ={{P$_1$, P$_3$, P$_7$}, {P$_2$, P$_{15}$}, {P$_4$, P$_8$}, {P$_5$, P$_9$, P$_{13}$}, {P$_6$, P$_{10}$}, {P$_{11}$, P$_{14}$}, {P$_{12}$}}, here the lower approximation, upper approximation and boundary region are given by L$_{(C- SR)}$ (X) = {P$_2$, P$_6$, P$_{10}$, P$_{15}$}, U$_{(C- SR)}$ (X) = {P$_1$,P$_2$,P$_3$, P$_4$, P$_6$, P$_7$, P$_8$, P$_{10}$, P$_{15}$}, B$_{(C- SR)}$ (X) = {P$_1$, P$_3$, P$_4$, P$_7$, P$_8$}. Therefore the nano topology is given by $\tau_{R(C-SR)}(X) =$ {U, ϕ, {P$_2$, P$_6$, P$_{10}$, P$_{15}$}, {P$_1$,P$_2$,P$_3$, P$_4$, P$_6$, P$_7$, P$_8$, P$_{10}$, P$_{15}$}, {P$_1$, P$_3$, P$_4$, P$_7$, P$_8$}}. Hence $\tau_{R(C-SR)}(X) = \tau_{R(C)}(X)$.

Step 6. When the attribute "LOE LEVEL BLOOD PLATELETS" is removed from C then U/R$_{(C- LLBP)}$ ={{P$_1$, P$_3$, P$_7$}, {P$_2$, P$_{15}$}, {P$_4$, P$_8$, P$_5$, P$_9$, P$_{13}$}, {P$_6$, P$_{10}$}, {P$_{11}$, P$_{14}$}, {P$_{12}$}}, here the lower approximation, upper approximation and boundary region are given by L$_{(C- LLBP)}$ (X) = {P$_2$, P$_6$,P$_{10}$, P$_{15}$}, U$_{(C- LLBP)}$ (X) = {P$_1$,P$_2$, P$_3$, P$_4$, P$_5$,P$_6$, P$_7$,P$_8$, P$_9$,P$_{10}$, P$_{13}$, P$_{15}$}, B$_{(C- LLBP)}$ (X) = {P$_1$, P$_3$, P$_4$, P$_5$,P$_7$, P$_8$,P$_9$,P$_{13}$}. Therefore the nano topology is given by $\tau_{R(C-LLBP)}(X) =$ {U, ϕ, {P$_2$, P$_6$,P$_{10}$, P$_{15}$}, {P$_1$,P$_2$, P$_3$, P$_4$, P$_5$,P$_6$, P$_7$,P$_8$, P$_9$,P$_{10}$, P$_{13}$, P$_{15}$}, {P$_1$, P$_3$, P$_4$, P$_5$,P$_7$, P$_8$,P$_9$,P$_{13}$}}. Hence $\tau_{R(C-F)}(X) \neq \tau_{R(C)}(X)$.

Step 7. When the attribute "BLEEDING" is removed from C then U/R$_{(C- B)}$ ={{P$_1$, P$_3$, P$_7$}, {P$_2$, P$_{15}$}, {P$_4$, P$_8$}, {P$_5$, P$_9$, P$_{13}$}, {P$_6$, P$_{10}$}, {P$_{11}$, P$_{14}$}, {P$_{12}$}}, here the lower approximation, upper approximation and boundary region are given by L$_{(C- B)}$ (X) = {P$_2$,P$_6$, P$_{10}$, P$_{15}$}, U$_{(C- B)}$ (X) = {P$_1$,P$_2$, P$_3$, P$_4$, P$_6$,P$_7$, P$_8$, P$_{10}$, P$_{15}$}, B$_{(C- B)}$ (X) = {P$_1$, P$_3$, P$_4$, P$_7$, P$_8$}. Therefore the nano topology is given by $\tau_{R(C-B)}(X) =$ {U, ϕ, {P$_2$,P$_6$, P$_{10}$, P$_{15}$}, {P$_1$,P$_2$, P$_3$, P$_4$, P$_6$,P$_7$, P$_8$, P$_{10}$, P$_{15}$}, {P$_1$, P$_3$, P$_4$, P$_7$, P$_8$}}. Hence $\tau_{R(C-B)}(X) = \tau_{R(C)}(X)$.

Therefore CORE = { FEVER , LOW LEVEL BLOOD PLATELETS }.
CASE II : PATIENTS WITHOUT DENGUE FEVER
Let X = {P$_3$,P$_5$,P$_7$,P$_8$,P$_9$,P$_{11}$,P$_{12}$,P$_{13}$,P$_{14}$} be the set of patients without dengue fever then U/R(C) = {{P$_1$,P$_3$,P$_7$}, {P$_2$,P$_{15}$}, {P$_4$,P$_8$}, {P$_5$,P$_9$,P$_{13}$}, {P$_6$,P$_{10}$}, {P$_{11}$,P$_{14}$}, {P$_{12}$}} and the nano topology is given by $\tau_{R(C)}(X) =$ {U,ϕ ,{P$_5$,P$_9$,P$_{11}$,P$_{12}$,P$_{13}$,P$_{14}$}, {P$_1$,P$_3$,P$_4$,P$_5$,P$_7$,P$_8$,P$_9$,P$_{11}$,P$_{12}$,P$_{13}$,P$_{14}$}, {P$_1$,P$_3$,P$_4$,P$_7$,P$_8$}}.

Step 1. When the attribute " FEVER " is removed from C then U/R$_{(C-F)}$ = {{P$_1$,P$_3$,P$_7$,P$_{12}$}, {P$_2$,P$_{15}$}, {P$_4$,P$_8$}, {P$_5$,P$_9$,P$_{13}$}, {P$_6$, P$_{10}$}, {P$_{11}$,P$_{14}$}} , here the lower approximation, upper approximation and boundary region are given by L$_{(C- F)}$ (X) = {P$_5$,P$_9$,P$_{11}$,P$_{13}$,P$_{14}$}, U$_{(C- F)}$ (X) = {P$_1$,P$_3$,P$_4$,P$_5$,P$_7$,P$_8$,P$_9$,P$_{11}$,P$_{12}$,P$_{13}$,P$_{14}$}, B$_{(C- F)}$ (X) = {P$_1$,P$_3$,P$_4$,P$_7$,P$_8$, P$_{12}$}. Therefore the nano topology is given by $\tau_{R(C-F)}(X) =$ {U, ϕ ,{P$_5$,P$_9$,P$_{11}$,P$_{13}$,P$_{14}$}, {P$_1$,P$_3$,P$_4$,P$_5$,P$_7$, P$_8$,P$_9$,P$_{11}$,P$_{12}$, P$_{13}$,P$_{14}$}, {P$_1$,P$_3$,P$_4$,P$_7$,P$_8$, P$_{12}$}}. Hence $\tau_{R(C-F)}(X) \neq \tau_{R(C)}(X)$.

Step 2. When the attribute " HEAD ACHE " is removed from C then U/R$_{(C-HA)}$ ={{P$_1$,P$_3$,P$_7$}, {P$_2$,P$_{15}$}, {P$_4$,P$_8$}, {P$_5$,P$_9$,P$_{13}$}, {P$_6$, P$_{10}$}, {P$_{11}$,P$_{14}$}, {P$_{12}$}}, here the lower approximation, upper approximation and boundary region are given by L$_{(C-HA)}$ (X) = {P$_5$,P$_9$,P$_{11}$,P$_{12}$,P$_{13}$,P$_{14}$}, U$_{(C-HA)}$ (X) ={P$_1$,P$_3$,P$_4$,P$_5$,P$_7$,P$_8$,P$_9$,P$_{11}$,P$_{12}$,P$_{13}$,P$_{14}$}, B$_{(C-HA)}$(X) = {P$_1$,P$_3$,P$_4$,P$_7$,P$_8$}. Therefore the nano topology is given by $\tau_{R(C-HA)}(X) =$ {U, ϕ, {P$_5$,P$_9$,P$_{11}$,P$_{12}$,P$_{13}$,P$_{14}$}, {P$_1$,P$_3$,P$_4$,P$_5$,P$_7$,P$_8$,P$_9$,P$_{11}$,P$_{12}$,P$_{13}$,P$_{14}$}, {P$_1$,P$_3$,P$_4$,P$_7$,P$_8$}}. Hence $\tau_{R(C-HA)}(X) = \tau_{R(C)}(X)$.

Step 3. When the attribute "VOMITING " is removed from C then U/R$_{(C-V)}$ ={{P$_1$, P$_3$, P$_7$}, {P$_2$, P$_{15}$}, {P$_4$, P$_8$}, {P$_5$, P$_9$, P$_{13}$}, {P$_6$, P$_{10}$}, {P$_{11}$, P$_{14}$}, {P$_{12}$}}, here the lower approximation, upper approximation and boundary region

are given by $L_{(C-V)}$ (X) = {$P_5,P_9,P_{11},P_{12},P_{13},P_{14}$}, $U_{(C-V)}$ (X) = {$P_1,P_3,P_4,P_5,P_7,P_8,P_9,P_{11},P_{12},P_{13},P_{14}$},$B_{(C-V)}$ (X) = {P_1, P_3, P_4, P_7, P_8}. Therefore the nano topology is givenby $\tau_{R(C-V)}(X) =$ {U, ϕ , {$P_5,P_9,P_{11},P_{12},P_{13},P_{14}$}, {$P_1,P_3,P_4,P_5,P_7,P_8,P_9,P_{11},P_{12},P_{13},P_{14}$}, {$P_1, P_3, P_4, P_7, P_8$}}. Hence $\tau_{R(C-V)}(X) = \tau_{R(C)}(X)$.

Step 4. When the attribute " MUSCLE AND JOIT PAIN" is removed from C then $U/R_{(C-MJP)}$ ={{P_1,P_3, P_7}, {P_2, P_{15}}, {P_4, P_8}, {P_5, P_9, P_{13}}, {P_6,P_{10}}, {P_{11}, P_{14}}, {P_{12}}}, here the lower approximation, upper approximation and boundary region are given by $L_{(C-MJP)}$ (X) = {$P_5,P_9,P_{11},P_{12},P_{13},P_{14}$}, $U_{(C-MJP)}$ (X) = {P_1,P $\tau_{R(C-MJP)}(X) = \tau_{R(C)}(X)$ $_3,P_4,P_5,P_7,P_8,P_9,P_{11},P_{12},P_{13},P_{14}$}, $B_{(C-MJP)}$ (X) = {P_1, P_3, P_4, P_7, P_8}. Therefore the nano topology is given by $\tau_{R(C-MJP)}(X) =$ {U, ϕ , {$P_5,P_9,P_{11},P_{12},P_{13},P_{14}$}, {$P_1,P_3,P_4,P_5,P_7,P_8,P_9,P_{11},P_{12},P_{13},P_{14}$},{$P_1, P_3, P_4, P_7, P_8$}}. Hence.

Step 5. When the attribute " SKIN RASHES" is removed from C then $U/R_{(C-SR)}$ ={{P_1, P_3, P_7}, {P_2, P_{15}}, {P_4, P_8}, {P_5, P_9, P_{13}}, {P_6, P_{10}}, {P_{11}, P_{14}}, {P_{12}}}, here the lower approximation, upper approximation and boundary region are given by $L_{(C-SR)}$ (X) = {$P_5, P_9,P_{11},P_{12},P_{13},P_{14}$}, $U_{(C-SR)}$ (X) = {$P_1,P_3,P_4,P_5,P_7,P_8,P_9,P_{11},P_{12},P_{13},P_{14}$}, $B_{(C-SR)}$ (X) = {P_1, P_3, P_4, P_7,P_8}. Therefore the nano topology is givenby $\tau_{R(C-SR)}(X) =$ {U, ϕ , {$P_5, P_9,P_{11},P_{12},P_{13},P_{14}$}, {$P_1,P_3,P_4,P_5,P_7,P_8,P_9,P_{11},P_{12},P_{13},P_{14}$},{$P_1, P_3, P_4, P_7,P_8$}}. Hence $\tau_{R(C-SR)}(X) = \tau_{R(C)}(X)$.

Step 6. When the attribute "LOW LEVEL BLOOD PLATELETS" is removed from C then $U/R_{(C-LLBP)}$ ={{P_1, P_3, P_7}, {P_2, P_{15}}, {P_4P_8, P_5, P_9, P_{13}}, {P_6, P_{10}}, {P_{11}, P_{14}},{P_{12}}}, here the lower approximation, upper approximation and boundary region are given by $L_{(C-LLBP)}$ (X) = {P_{11}, P_{12}, P_{14}}, $U_{(C-LLBP)}$ (X) = {$P_1, P_3, P_4, P_5, P_7, P_8, P_9,P_{11},P_{12}, P_{13}, P_{14}$}, $B_{(C-LLBP)}$ (X) = {$P_1,P_3,P_4,P_5,P_7,P_8,P_9,P_{13}$}. Therefore the nano topology is given by $\tau_{R(C-LLBP)}(X) =$ {U, ϕ ,{P_{11}, P_{12}, P_{14}}, {$P_1,P_3, P_4, P_5, P_7, P_8, P_9, P_{11}, P_{12}, P_{13}, P_{14}$}, {$P_1,P_3,P_4,P_5,P_7,P_8,P_9,P_{13}$}}. Hence $\tau_{R(C-F)}(X) \neq \tau_{R(C)}(X)$.

Step 7. When the attribute "BLEEDING" is removed from C then $U/R_{(C-B)}$ ={{P_1, P_3, P_7}, {P_2, P_{15}}, {P_4,P_8}, {P_5,P_9,P_{13}}, {P_6,P_{10}}, {P_{11},P_{14}}, {P_{12}}}, here the lower approximation, upper approximation and boundary region are given by $L_{(C-B)}$ (X) = {$P_5,P_9,P_{11},P_{12},P_{13},P_{14}$}, $U_{(C-B)}$ (X) = {$P_1, P_3, P_4, P_6, P_7, P_8, P_{10}, P_{12},P_5$},$B_{(C-B)}$ (X) = {P_1, P_3, P_4, P_7, P_8}. Therefore the nano topology is givenby $\tau_{R(C-B)}(X) =$ {U, ϕ , {$P_5,P_9,P_{11},P_{12},P_{13},P_{14}$}, {$P_1, P_3, P_4, P_6, P_7, P_8, P_{10}, P_{12},P_5$}, {$P_1, P_3, P_4, P_7, P_8$}}. Hence $\tau_{R(C-B)}(X) = \tau_{R(C)}(X)$.

Therefore CORE = { FEVER , LOW LEVEL BLOOD PLATELETS }.

3. Observation

From the above two cases, it is observable that the primary outcome which is meant to be the CORE is FEVER and LOWLEVEL BLOOD PLATELETS. We resolve that the origin for the FEVER is because of the LOW LEVEL BLOOD PLATELETS which contributes to the diminished immunity during DENGUE.

4. Conclusion

In this existing factor of real life scenario, which determined to prove that the attributes deduction is adopted by the methodology of nano topology. The concluding statement outreaches through nano topological deduction that FEVER and LOW LEVEL BLOOD PLATELETS are the most vital factors for DENGUE FEVER. Finally we conclude that, it can be applied in various fields namely Medical field, Academic related field, Marketing field, Business sectors and so on.

References

1. M.Lellis Thivagar, *Carmel Richard*, On nano forms of weakly open sets, International journal of mathematics and statistics invention, Volume 1,Issue 1, August 2013, pp **31-37**.

2. M.Lellis Thivagar, *Carmel Richard,* Nutrition Modeling Through nano topology, Int.Journal of engineering Research and application, Vol 4, Issue1(Version 1),2014, **327-334**.

3. A.Jayalakshmi and C.Janaki, *Int.Journal of engineering Research*, A new class of sets in nano topological spaces with an application in Medical Diagnosis, Vol 12, Number 16(2017), pp **5894-5899**.

4. Yuhua Qiana,b, Chuangyin Dangb, Jiye Lianga, and DaweiTangc , Set-valued ordered information systems Information Sciences 179 (2009) **2809-2832.**