

"Education for Knowledge, Science and Culture"

-Shikshanmaharshi Dr. Bapuji Salunkhe

**Shri. Swami Vivekanand Shikshan Sanstha's
Vivekanand College, Kolhapur (Autonomous)**

Department of Zoology

B. Sc. III - SEMINAR



Academic Year: 2021-2022

“Education for Knowledge, Science and Culture”

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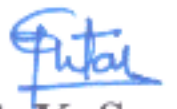
Shri Swami Vivekanand Shikshan Sanstha's
VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS)
DEPARTMENT OF ZOOLOGY
Academic Year 2021-2022

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Student Seminar - B.Sc. III

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Dr. G. K. Sontakke
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**Shri Swami Vivekanand Shikshan Sanstha's
Vivekanand College, Kolhapur (Autonomous)
Department of Zoology
Academic year-2021-2022**

Notice

Date: 03/03/2022

All students of B. Sc. III here by informed that, as per part of curriculum and CIE, all have to complete their seminar. It is compulsory. Schedule of seminar is given below, follow the schedule and complete your seminar. All have to submit Abstract of seminar to department.


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Vivekanand College, Kolhapur (Autonomous)**

Department of Zoology

B. Sc. III Sem. V

Academic Year-2021-2022

Topic allotment for seminar

Sr. No	Roll No.	Name of Student	Topic Name	Date	Sign
1	8031	Chougale Shivani Vilas	Recombinant DNA in medicine	11/03/2022	
2	8030	Banadar Juveriya Liyakat	Agrobacterium mediated transformation	11/03/2022	
3	8033	Desai Shrawani Sudhakar	DNA Replication	11/03/2022	
4	8038	Heble Sanika Prashant	DNA sequencing Sanger Method	11/03/2022	
5	8044	Kalkutaki Vishal Babasaheb	Sterilization techniques	11/03/2022	8044
6	8047	Magdum Pranali Manik	Cloning vector	12/03/2022	
7	8042	Jagtap Shital Bharat	Cell culture techniques & types	12/03/2022	
8		Chougule Sapana Anil	Production of cloned animals	12/03/2022	
9	8041	Jadhav Shila Thavaru	Transformation techniques: Calcium chloride method	12/03/2022	
10	8040	Jadhav Ankita	Restriction enzymes	17/03/2022	
11	8054	Yadav Abhilasha Avinash	Northern and Western blotting	17/03/2022	
12	8055	Yadav Aditi	Translation	17/03/2022	
13	8051	Patil Rajvardhini Jaysing	Transcription in Prokaryotes	17/03/2022	
14	8034	D'souza Priya Motes	Construction of genomic and cDNA libraries	17/03/2022	
15		Ghodake Ganesh	Host parasite Relationship	19/03/2022	
16	8046	Khot Swapnil Sanjay	Dairy Technology: types of breeds	19/03/2022	
17	8048	Mullani Arbaz	Poultry farming: types of breeds	19/03/2022	
18		Patil Aditi Atul	Tuberculosis: transmission, Prevention control	19/03/2022	
19	8057	Kawthekar Safia Mohammed Rafiq	Sugar cane and wheat waste management	19/03/2022	8057

20	8036	Falle Nilam	Life history of <i>E. histolytica</i>	25/03/2022	<i>NR Sculley</i>
21	8039	Jadhav Aarati	Insect of economic importance any one	25/03/2022	<i>Jadhav</i>
22	8045	Kamble Amruta Suresh	Insect of Medical importance any one	25/03/2022	<i>Amruta</i>
23	8053	Shelar Samiksha Umesh	Dairy technology: Management	25/03/2022	<i>Shelar</i>
24	8056	Yevaluje Swapnali Madhukar	Poultry farming: Management	26/03/2022	<i>Yevaluje</i>
25	8035	Fakir Juveriya Dastgir	Fish technology: fish farming construction and Maintenance	26/03/2022	<i>Esrum</i>
26	8049	Mullani Saima Dastagir	Animal feed preparation: cattle feed	26/03/2022	<i>Saima</i>
27	8043	Kalantre Neha Namdev	Poultry waste Management	26/03/2022	<i>Neha</i>
28		Aarzoo Sayyad	Animal feed preparation: fish feed	26/03/2022	<i>Aarzoo</i>


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Vivekanand College, Kolhapur (Autonomous)
Year-2021-2022
Department of Zoology
Seminar Presenty

Sr. No	Name of Student	11/03/22	12/03/22	17/03/2022	19/03/2022	25/3/22
1	Chougale Shivani Vilas	<u>SC</u>	<u>SC</u>	<u>SC</u>	<u>SC</u>	<u>SC</u>
2	Banadar Juveriya Liyakat	<u>Juveriya Banadar</u>	<u>Juveriya Banadar</u>	<u>Juveriya Banadar</u>	<u>Juveriya Banadar</u>	<u>Juveriya Banadar</u>
3	Desai Shrawani Sudhakar	<u>SD</u>	<u>SD</u>	<u>SD</u>	<u>SD</u>	<u>SD</u>
4	Heble Sanika Prashant	<u>Sanika Heble</u>	<u>Sanika Heble</u>	<u>Sanika Heble</u>	A	A
5	Kalkutaki Vishal Babasaheb	<u>Vishal Kalkutaki</u>	<u>Vishal Kalkutaki</u>	<u>Vishal Kalkutaki</u>	<u>Vishal Kalkutaki</u>	<u>Vishal Kalkutaki</u>
6	Magdum Pranali Manik	<u>Pranali Magdum</u>	<u>Pranali Magdum</u>	<u>Pranali Magdum</u>	<u>Pranali Magdum</u>	<u>Pranali Magdum</u>
7	Jagtap Shital Bharat	<u>S. Jagtap</u>	<u>S. Jagtap</u>	<u>S. Jagtap</u>	<u>S. Jagtap</u>	<u>S. Jagtap</u>
8	Chougule Sapana Anil	<u>Absent</u>	<u>Chougule</u>	<u>Chougule</u>	<u>Chougule</u>	A
9	Jadhav Shila Thavaru	<u>Shila Jadhav</u>	<u>Shila Jadhav</u>	<u>Shila Jadhav</u>	<u>Shila Jadhav</u>	<u>Shila Jadhav</u>
10	Jadhav Ankita	<u>Ankita Jadhav</u>	<u>Ankita Jadhav</u>	<u>Ankita Jadhav</u>	<u>Ankita Jadhav</u>	<u>Ankita Jadhav</u>
11	Yadav Abhilasha Avinash	<u>Abhilasha Yadav</u>	<u>Abhilasha Yadav</u>	<u>Abhilasha Yadav</u>	<u>Abhilasha Yadav</u>	<u>Abhilasha Yadav</u>
12	Yadav Aditi	<u>Aditi Yadav</u>	<u>Aditi Yadav</u>	<u>Aditi Yadav</u>	<u>Aditi Yadav</u>	<u>Aditi Yadav</u>
13	Patil Rajvardhini Jaysing	<u>Rajvardhini Patil</u>	<u>Rajvardhini Patil</u>	<u>Rajvardhini Patil</u>	<u>Rajvardhini Patil</u>	<u>Rajvardhini Patil</u>
14	D'souza Priya Motes	<u>P. M. D'souza</u>	<u>P. M. D'souza</u>	<u>P. M. D'souza</u>	<u>P. M. D'souza</u>	<u>P. M. D'souza</u>
15	Ghodake Ganesh	<u>Absent</u>	<u>P. M. D'souza</u>	<u>SP</u>	<u>SP</u>	<u>SP</u>
16	Khot Swapnil Sanjay	<u>Swapnil Khot</u>	<u>Swapnil Khot</u>	<u>Swapnil Khot</u>	<u>Swapnil Khot</u>	<u>Swapnil Khot</u>
17	Mullani Arbaz	<u>Arbaz Mullani</u>	<u>Arbaz Mullani</u>	<u>Arbaz Mullani</u>	<u>Arbaz Mullani</u>	<u>Arbaz Mullani</u>
18	Patil Aditi Atul	<u>Aditi Patil</u>	<u>Aditi Patil</u>	<u>Aditi Patil</u>	<u>Aditi Patil</u>	<u>Aditi Patil</u>
19	Kawthekar Safia Mohammed Rafiq	<u>Safia Kawthekar</u>	<u>Safia Kawthekar</u>	<u>Safia Kawthekar</u>	A	<u>Safia Kawthekar</u>
20	Falle Nilam	<u>Nilam Falle</u>	<u>Nilam Falle</u>	<u>Nilam Falle</u>	<u>Nilam Falle</u>	<u>Nilam Falle</u>
21	Jadhav Aarati	<u>Aarati Jadhav</u>	<u>Aarati Jadhav</u>	<u>Aarati Jadhav</u>	<u>Aarati Jadhav</u>	A
22	Kamble Amruta Suresh	<u>Amruta Kamble</u>	<u>Amruta Kamble</u>	<u>Amruta Kamble</u>	<u>Amruta Kamble</u>	<u>Amruta Kamble</u>
23	Shelar Samiksha Umesh	<u>Samiksha Shelar</u>	<u>Samiksha Shelar</u>	<u>Samiksha Shelar</u>	<u>Samiksha Shelar</u>	<u>Samiksha Shelar</u>
24	Yevaluje Swapnali Madhukar	<u>Swapnali Yevaluje</u>	<u>Swapnali Yevaluje</u>	<u>Swapnali Yevaluje</u>	<u>Swapnali Yevaluje</u>	A
25	Fakir Juveriya Dastgir	<u>Absent</u>	<u>Omam</u>	<u>Omam</u>	<u>Omam</u>	<u>Omam</u>
26	Mullani Saima Dastagir	<u>Absent</u>	<u>Omam</u>	<u>Omam</u>	<u>Omam</u>	<u>Omam</u>
27	Kalantre Neha Namdev	<u>Neha Kalantre</u>	<u>Neha Kalantre</u>	<u>Neha Kalantre</u>	<u>Neha Kalantre</u>	<u>Neha Kalantre</u>
28	Aarzo Sayyad	<u>Absent</u>	<u>Sayyad</u>	<u>Sayyad</u>	<u>Sayyad</u>	<u>Sayyad</u>

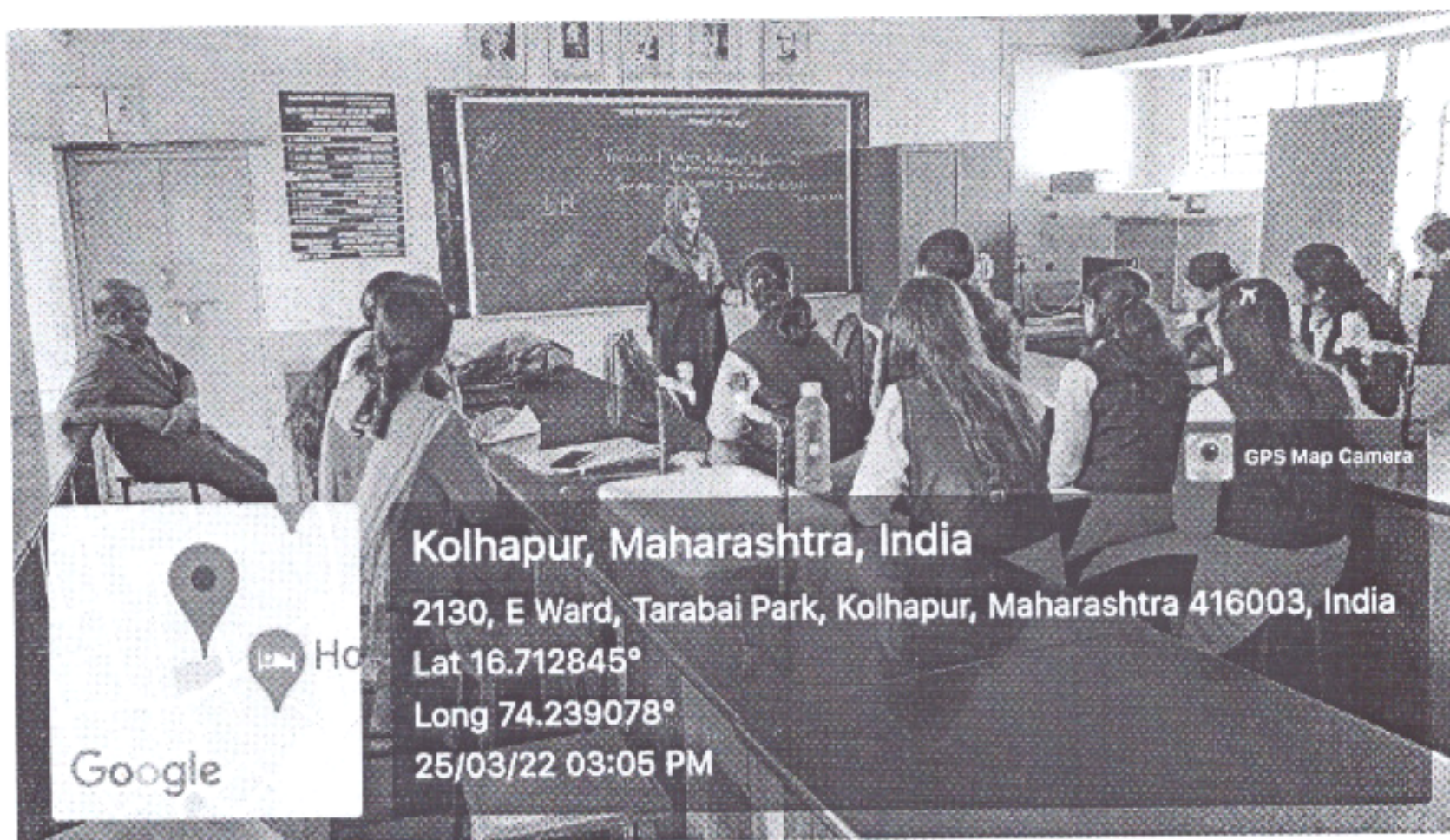
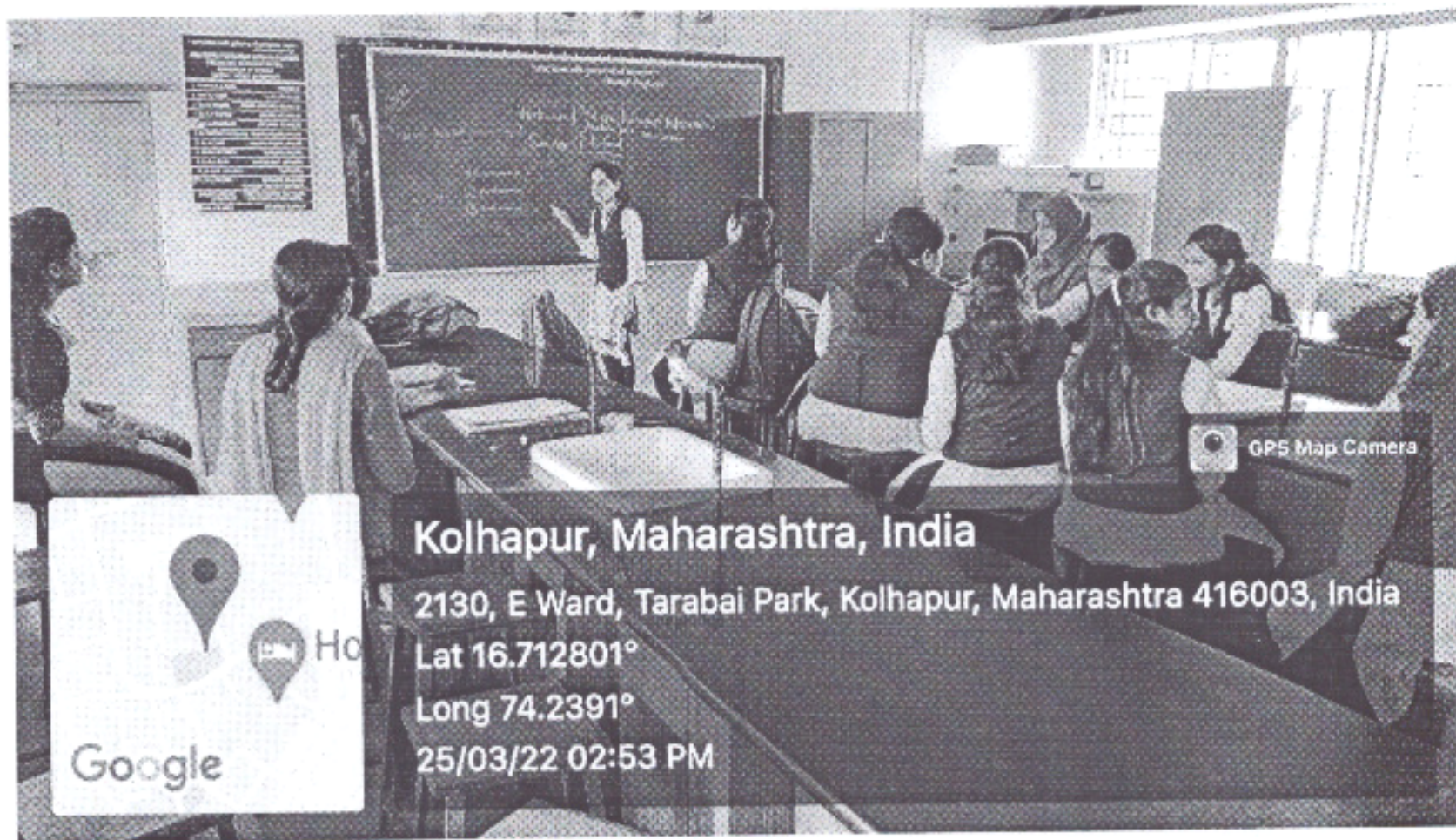
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Shri Swami Vivekananda Shikshan Sanshtas
Vivekanand College, Kolhapur (Autonomous)
Year-2021-2022
Department of Zoology
Seminar

Sr. No	Name of Student	Date of Seminar	Topic
1	Chougale Shivani Vilas	11/03/2022	rDNA technology
2	Banadar Juveriya Liyakat	11/03/2022	Agrobacterium Mediated Transformation
3	Desai Shrawani Sudhakar	11/03/2022	DNA Replication
4	Heble Sanika Prashant	11-03-2022	DNA sequencing by Sanger's Method
5	Kalkutaki Vishal Babasaheb	11-03-2022	Sterilization Techniques
6	Magdum Pranali Manik	12-03-2022	cloning vector.
	Jagtap Shital Bharat	12-03-2022	cell culture Techniques 4 types
8	Chougule Sapana Anil	12-03-2022	Production of cloned Animals.
9	Jadhav Shila Thavaru	12/03/2022	Transformation Techniques: CaCl₂ method.
10	Jadhav Ankita	17/03/2022	Restriction enzymes.
11	Yadav Abhilasha Avinash	17/03/2022	Western Blotting.
12	Yadav Aditi	17/03/2022	Translation in prokaryotes.
13	Patil Rajvardhini Jaysing	17/03/2022	Transcription in Prokaryotes
14	D'souza Priya Motes	17-03-2022	Construction of genomic and CDN libraries.
15	Ghodake Ganesh	19-3-22	Host Parasite.
16	Khot Swapnil Sanjay	19-3-22	Dairy Farming.
17	Mullani Arbaz	19-3-22	Southern blotting
18	Patil Aditi Atul	19-3-22	Tuberculosis (Transmission, prevent or control)
19	Kawthekar Safia Mohammed Rafiq	25-3-22	Sugarcane & Wheat Waste Management
20	Falle Nilam	19-3-2022	Life Cycle of E. Histolytica
21	Jadhav Aarati	19-3-2022	Importance of economic insects
22	Kamble Amruta Suresh	19-03-2022	Insect of Medical Importance
23	Shelar Samiksha Umesh	19-03-2022	Dairy technology management
24	Yevaluje Swapnali Madhukar	19-03-2022	Poultry Farming Management
25	Fakir Juveriya Dastgir	19-3-22	Fish Pond construction & Management
26	Mullani Saima Dastagir		
27	Kalantre Neha Namdev	19-3-22	Poultry Waste management
28	Aarzoo Sayyad	25-03-22	Fish feed

Department of Zoology
Academic Year 2021-2022



Student Seminar of B.Sc. III

Gutan.
Head,
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Kolhapur (Autonomous)

Vivekanand College, Kolhapur

Department of Zoology

Seminar

Date- 19/3/2022

Name of Student - Aditi Atul Patil

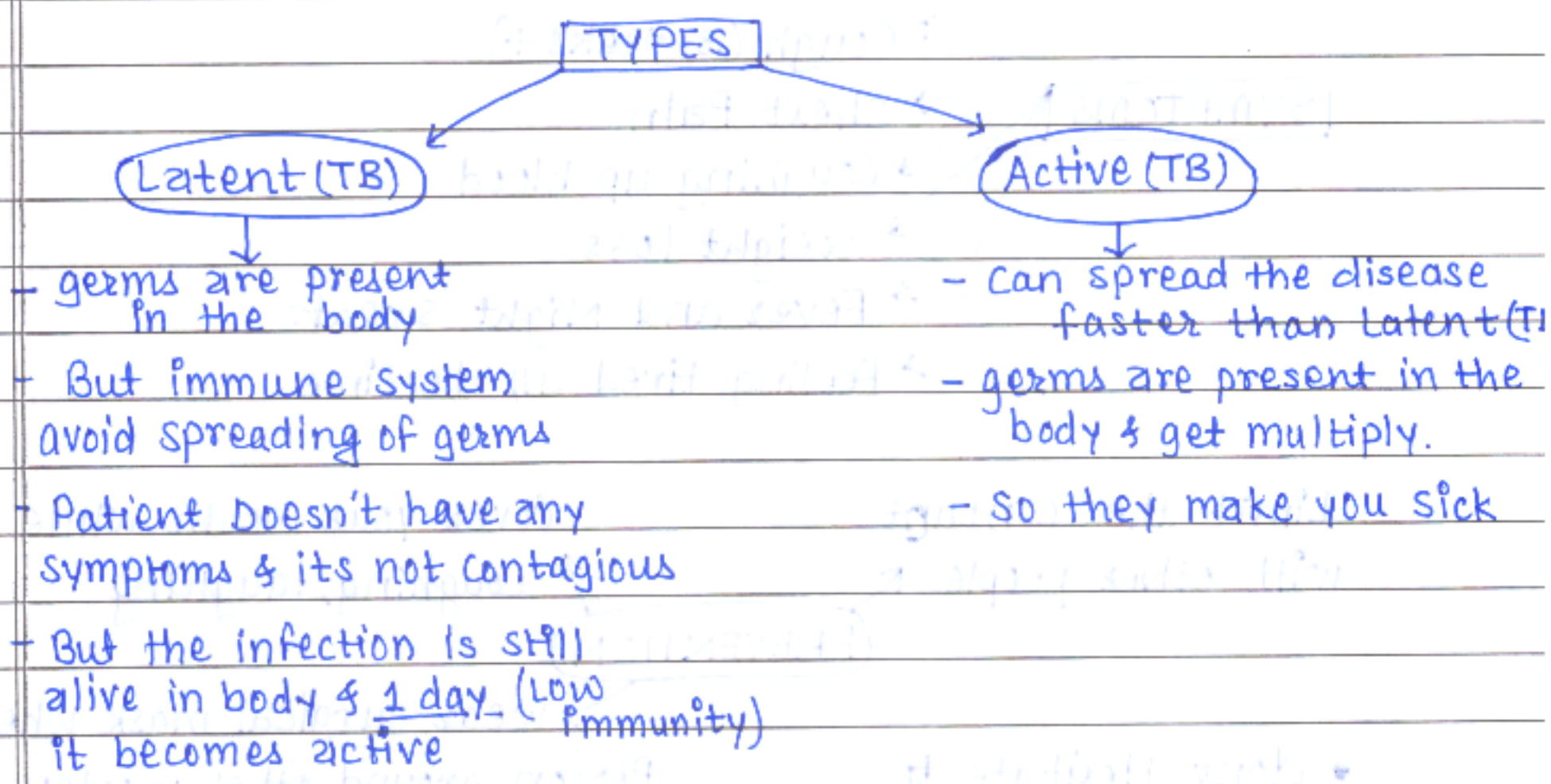
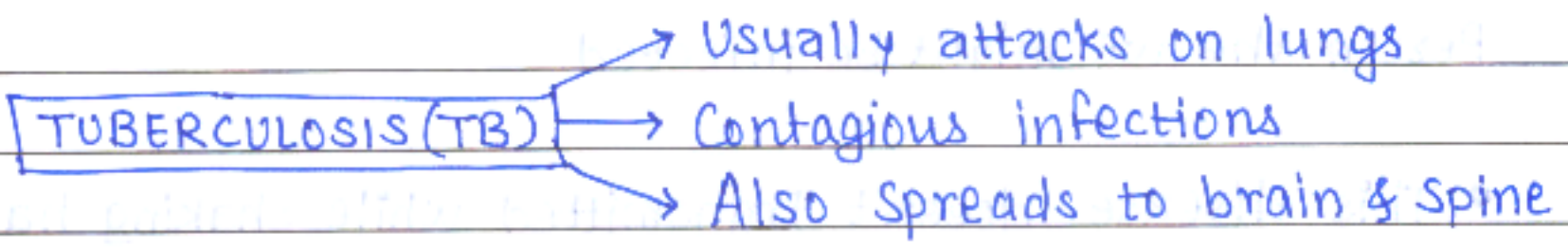
Class - B.sc III

Roll NO - 8050

Topic of Seminar - Tuberculosis (Transmission, Prevent/control)

• what is Tuberculosis (TB)?

The disease which is caused by the bacteria called Mycobacterium Tuberculosis.



• 90% Active Cases in adults is come from Latent (TB).

• Both infections are drug resistant also, means Certain Medications doesn't work against the disease.

**Shri Swami Vivekanand Shikshan Sanstha's
Vivekanand College, Kolhapur (Autonomous)
Department of Zoology
Academic year-2021-2022**

Notice

Date: 5/04/2022

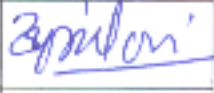
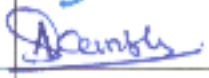
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Vivekanand College, Kolhapur (Autonomous)
Department of Zoology
Academic Year-2021-2022
B. Sc. III Sem. VI

Allotments of Seminar Topics

Sr. No	Roll No.	Name of Student	Topic Name	Date	Sign
1.	8031	Chougale Shivani Vilas	Introduction and Scope of Ecology	07/04/2022	<i>[Signature]</i>
2.	8030	Banadar Juveriya Liyakat	Food chain food web and ecological pyramid	7/04/2022	<i>[Signature]</i>
3.	8033	Desai Shrawani Sudhakar	Introduction to Biomes and their types	7/04/2022	<i>[Signature]</i>
4.	8038	Heble Sanika Prashant	Freshwater Ecosystem	7/04/2022	<i>[Signature]</i>
5.	8044	Kalkutaki Vishal Babasaheb	Estuaries and intertidal zones	7/04/2022	<i>[Signature]</i>
6.	8047	Magdum Pranali Manik	Salinity and density of sea water	7/04/2022	<i>[Signature]</i>
7.	8042	Jagtap Shital Bharat	Adaptations of deep sea organisms	7/04/2022	<i>[Signature]</i>
8.		Chougale Sapana Anil	Coral reefs sea weeds	7/04/2022	<i>[Signature]</i>
9.	8041	Jadhav Shila Thavaru	Lake: origin and classification, Lake as ecosystem	7/04/2022	<i>[Signature]</i>
10.	8040	Jadhav Ankita	Nutrient cycle in lake	7/04/2022	<i>[Signature]</i>
11.		Yadav Abhilasha Avinash	Different stage of stream development	8/04/2022	<i>[Signature]</i>
12.	8055	Yadav Aditi	Adaptation of hill-stream fishes	8/04/2022	<i>[Signature]</i>
13.	8051	Patil Rajvardhini Jaysing	Causes of pollution-Agricultural	8/04/2022	<i>[Signature]</i>
14.	8034	D'souza Priya Motes	Industrial and Sewage pollution	8/04/2022	<i>[Signature]</i>

15.		Ghodake Ganesh	Component of immune system	8/04/2022	
16.		Khot Swapnil Sanjay	Innate immune system	8/04/2022	
17.	8048	Mullani Arbaz	Adaptive immune system	8/04/2022	
18.	8050	Patil Aditi Atul	Hematopoiesis-cells of immune system	8/04/2022	
19.	8057	Kawthekar Safia Mohammed Rafiq	Antigens	8/04/2022	
20.	8036	Falle Nilam	Antibodies	8/04/2022	
21.	8039	Jadhav Aarati	Hybridoma technology	9/04/2022	
22.	8045	Kamble Amruta Suresh	Elisa and its types	9/04/2022	
23.	8053	Shelar Samiksha Umesh	Structure and function of MHC	9/04/2022	
24.	8056	Yevaluje Swapnali Madhukar	Antigen presentation and processing	9/04/2022	
25.		Fakir Juveriya Dastgir	Type I hypersensitivity	9/04/2022	
26.		Mullani Saima Dastagir	Vaccines	9/04/2022	
27.		Kalantre Neha Namdev	Type II hypersensitivity	9/04/2022	
28.		Aarzoo	Type III hypersensitivity	9/04/2022	


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Vivekanand College, Kolhapur (Autonomous)

Year-2021-2022

Department of Zoology

Seminar

Sr. No	Name of Student	Date of Seminar	Topic
1	Chougale Shivani Vilas	18/04/2022	Scope & introduction of Ecology.
2	Banadar Juveriya Liyakat	18/04/2022	Food chain, Food Web, Ecological Pyramid.
3	Desai Shrawani Sudhakar	18/04/2022	Introduction to Biomes and its types
4	Heble Sanika Prashant	18-04-2022	Freshwater Ecosystem
5	Kalkutaki Vishal Babasaheb	18-04-2022	Estuaries & Intertidal zone
6	Magdum Pranali Manik	19-04-2022	Density & Salinity of sea water
7	Jagtap Shital Bharat	18-04-2022	Adaptations of Deep sea organisms.
8	Chougale Sapana Anil	18-4-2022	Coral reefs and Sea weeds.
9	Jadhav Shila Thavaru	18/04/2022	Lake - origin, classification, ecosystem
10	Jadhav Ankita	18/04/2022	Nutrient cycle in lake
11	Yadav Abhilasha Avinash	19/04/2022	Diff. stages of stream Development
12	Yadav Aditi	19/04/2022	Adaptation of hill stream fishes
13	Patil Rajvardhini Jaysing	19/04/2022	causes of Agricultural Pollution
14	D'souza Priya Motes	19/04/2022	Industrial And Sewage Pollution.
15	Ghodake Ganesh	19/04/2022	Components of Immune system
16	Khot Swapnil Sanjay	19/04/2022	Innate Immune system
17	Mullani Arbaz	19/04/2022	Adaptive Immune system
18	Patil Aditi Atul	19/04/2022	Haematopoiesis - cells of immune system
19	Kawthekar Safia Mohammed Rafiq	19/04/2022	ANTIGENS.
20	Falle Nilam	20/04/2022	Antibody
21	Jadhav Aarati	20/04/2022	Hybridoma Technology.
22	Kamble Amruta Suresh	20/04/2022	ELISA and its Types.
23	Shelar Samiksha Umesh	20/04/2022	Structure & function of MHC
24	Yevaluje Swapnali Madhukar	20/04/2022	Antigen processing presentation.
25	Fakir Juveriya Dastgir	20/04/2022	Type I hypersensitivity
26	Mullani Saima Dastagir	20/04/2022	vaccines-
27	Kalantre Neha Namdev	20/04/2022	Hypersensitivity type II
28	Aarzoo Sayyad		

Shri Swami Vivekananda Shikashan Sanshtas
Vivekanand College, Kolhapur (Autonomous)

Year-2021-2022

Department of Zoology

Seminar Presenty

Sr. No	Name of Student	18-4-22	19-4-22	20-4-22			
1	Chougale Shivani Vilas	<u>Sol</u>	<u>Sol</u>	<u>Sol</u>			
2	Banadar Juveriya Liyakat	<u>Juveriya</u>	<u>Juveriya</u>	<u>Juveriya</u>			
3	Desai Shrawani Sudhakar	<u>S.S.D.</u>	<u>S.S.D.</u>	<u>S.S.D.</u>			
4	Heble Sanika Prashant	<u>Heble</u>	<u>Heble</u>	<u>Heble</u>			
5	Kalkutaki Vishal Babasaheb	<u>Kalkutaki</u>	<u>Kalkutaki</u>	<u>Kalkutaki</u>			
6	Magdum Pranali Manik	<u>Magdum</u>	<u>Magdum</u>	<u>Magdum</u>			
7	Jagtap Shital Bharat	<u>S.B.Jagtap</u>	<u>S.B.Jagtap</u>	<u>S.B.Jagtap</u>			
8	Chougule Sapana Anil	<u>Chougule</u>	<u>Chougule</u>	<u>Chougule</u>			
9	Jadhav Shila Thavaru	<u>Jadhav</u>	<u>Jadhav</u>	<u>Jadhav</u>			
10	Jadhav Ankita	<u>ARJ</u>	<u>ARJ</u>	<u>ARJ</u>			
11	Yadav Abhilasha Avinash	<u>AYadav</u>	<u>AYadav</u>	<u>AYadav</u>			
12	Yadav Aditi	<u>Aditi</u>	<u>Aditi</u>	<u>Aditi</u>			
13	Patil Rajvardhini Jaysing	<u>R.Patil</u>	<u>R.Patil</u>	<u>R.Patil</u>			
14	D'souza Priya Motes	<u>P.M.D'souza</u>	<u>P.M.D'souza</u>	<u>P.M.D'souza</u>			
15	Ghodake Ganesh	<u>Ghodake</u>	<u>Ghodake</u>	<u>Ghodake</u>			
16	Khot Swapnil Sanjay	<u>Khot</u>	<u>Khot</u>	<u>Khot</u>			
17	Mullani Arbaz	<u>Mullani</u>	<u>Mullani</u>	<u>Mullani</u>			
18	Patil Aditi Atul	<u>Aditi</u>	<u>Aditi</u>	<u>Aditi</u>			
19	Kawthekar Safia Mohammed Rafiq	<u>Kawthekar</u>	<u>Kawthekar</u>	<u>Kawthekar</u>			
20	Falle Nilam	<u>Falle</u>	<u>Falle</u>	<u>Falle</u>			
21	Jadhav Aarati	<u>Jadhav</u>	<u>Jadhav</u>	<u>Jadhav</u>			
22	Kamble Amruta Suresh	<u>Kamble</u>	<u>Kamble</u>	<u>Kamble</u>			
23	Shelar Samiksha Umesh	<u>Shelar</u>	<u>Shelar</u>	<u>Shelar</u>			
24	Yevaluje Swapnali Madhukar	<u>Yevaluje</u>	<u>Yevaluje</u>	<u>Yevaluje</u>			
25	Fakir Juveriya Dastgir	<u>Fakir</u>	<u>Fakir</u>	<u>Fakir</u>			
26	Mullani Saima Dastagir	<u>Mullani</u>	<u>Mullani</u>	<u>Mullani</u>			
27	Kalantre Neha Namdev	<u>Kalantre</u>	<u>Kalantre</u>	<u>Kalantre</u>			
28	Aarzo Sayyad	<u>Aarzo</u>	<u>Aarzo</u>	<u>Aarzo</u>			

Vivekanand College, Kolhapur (Autonomous)

Department Of Zoology
Seminar 2021-2022

Presented by-Aditi Atul Patil

B.Sc III

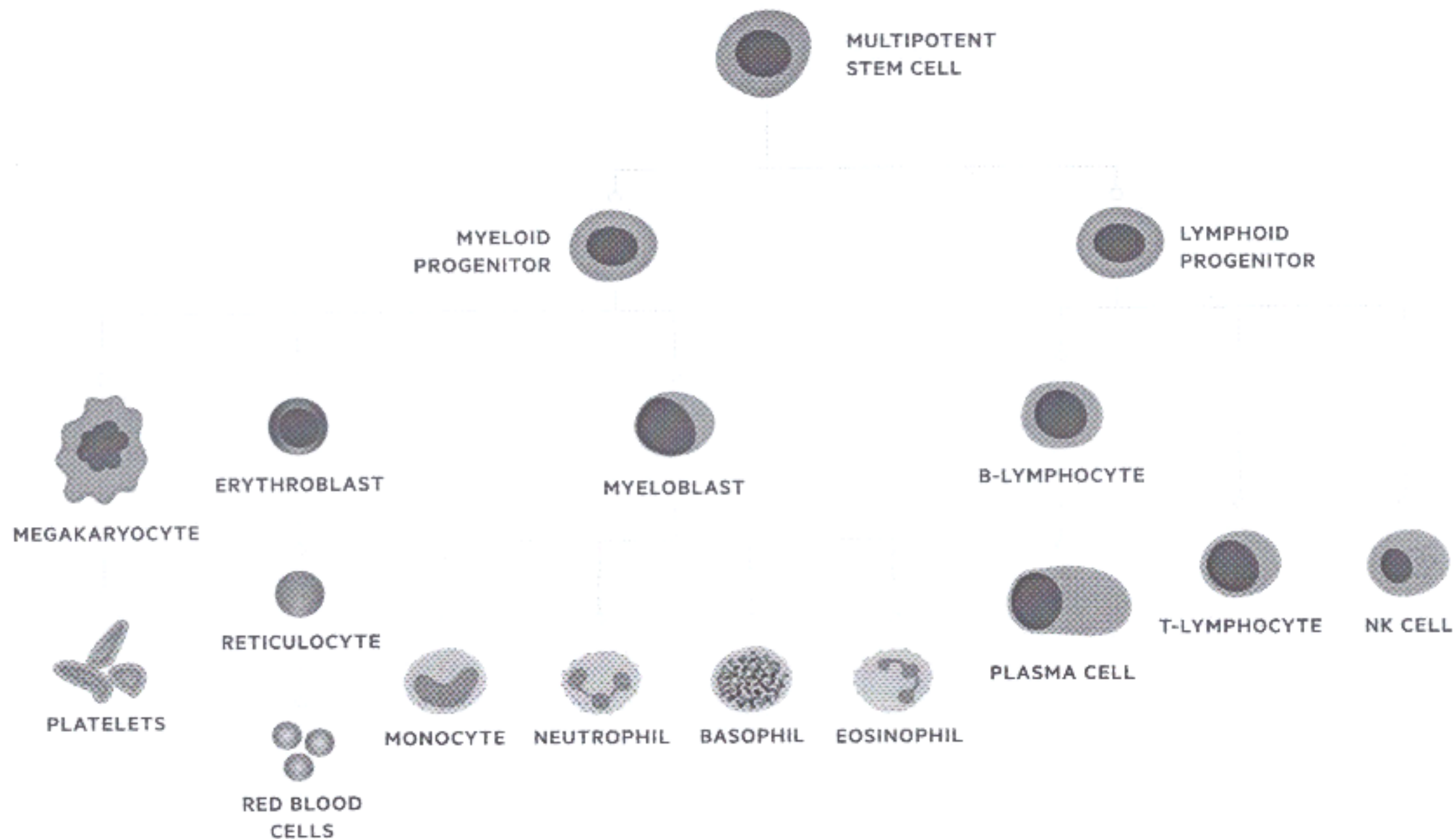
Sem VI

Roll No- 8050

Topic-Haematopoiesis- cells of immune system

Haematopoiesis

Haematopoiesis is the formation of blood cellular components. All blood cellular components are derived from haematopoietic stem cells.



Cells of immune system

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graph TD; A[Cells of immune system] --> B[Adaptive immune system]; A --> C[Innate immune system]; B --> D["The cells that carry out the adaptive immune response are white blood cells known as lymphocytes."]; D --> E["• such as B & T lymphocytes"]; C --> F["Immune cells develop from stem cells in the bone marrow and become different types of white blood cells."]; F --> G["• neutrophils, eosinophils, basophils, mast cells, monocytes, macrophages, dendritic cells, natural killer cells."];
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Adaptive immune system

The cells that carry out the adaptive immune response are white blood cells known as lymphocytes.

- such as B & T lymphocytes

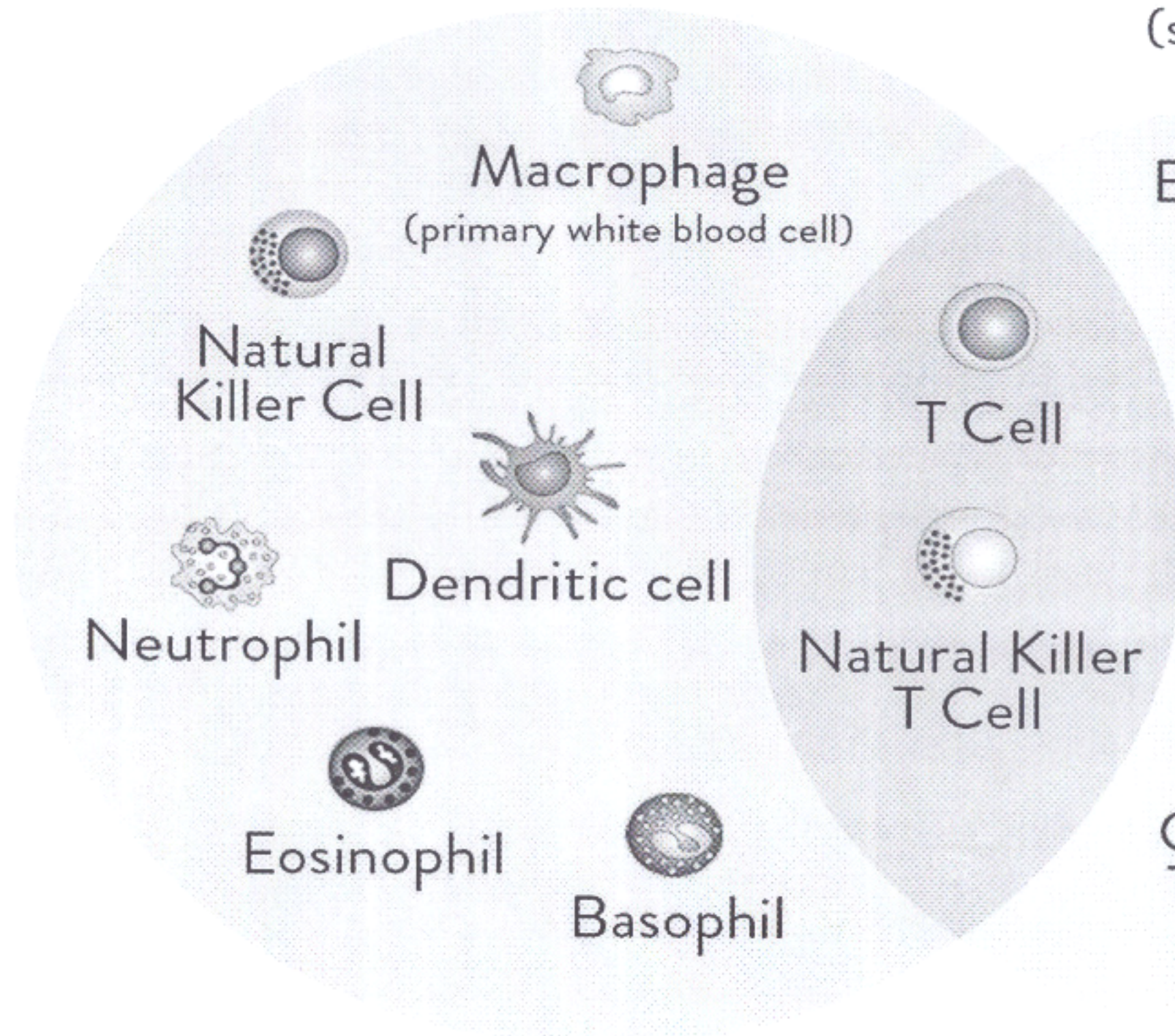
Innate immune system

Immune cells develop from stem cells in the bone marrow and become different types of white blood cells.

- neutrophils, eosinophils, basophils, mast cells, monocytes, macrophages, dendritic cells, natural killer cells.

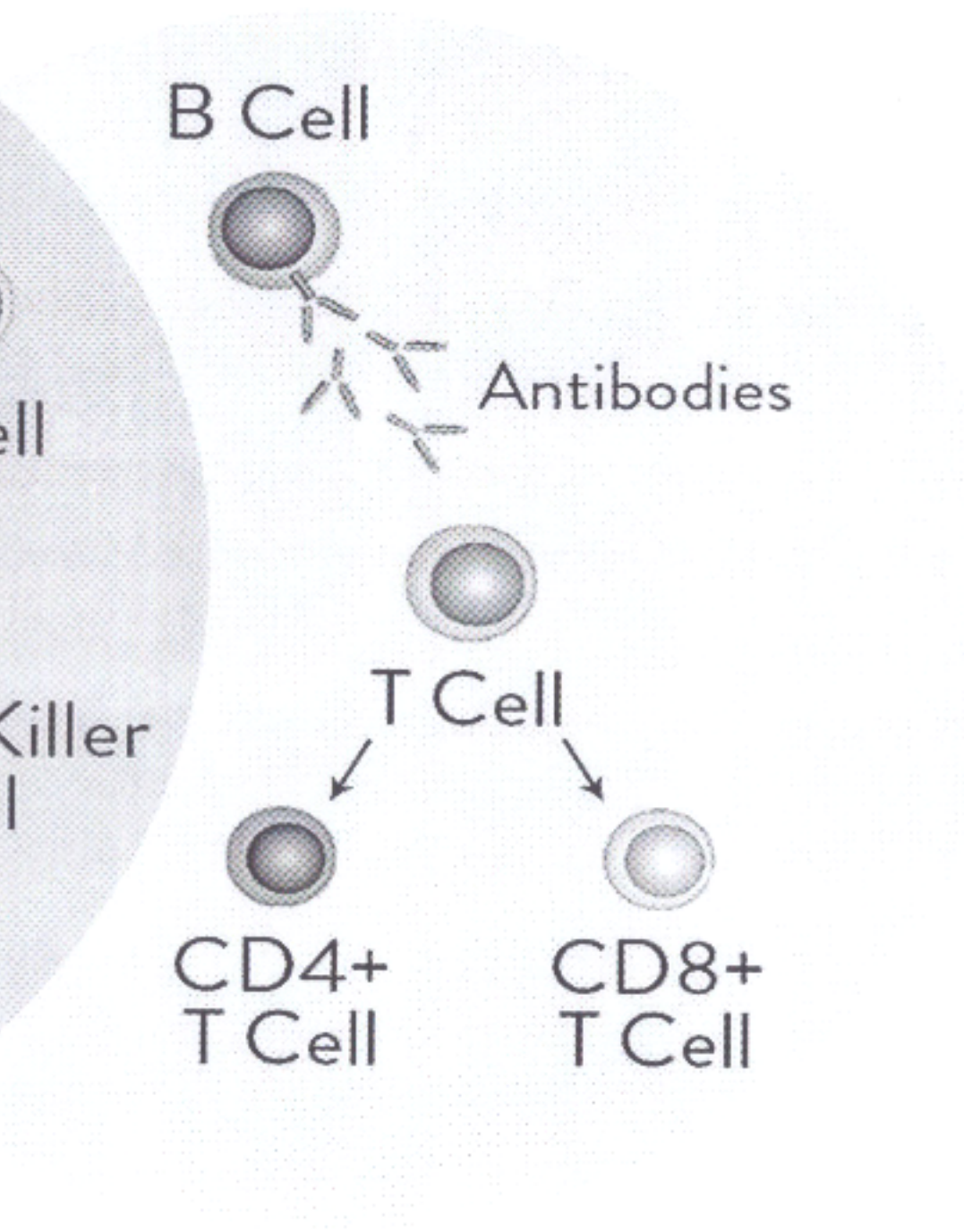
INNATE IMMUNITY

(rapid response)



ADAPTIVE IMMUNITY

(slow response)



Cells of Adaptive immune system

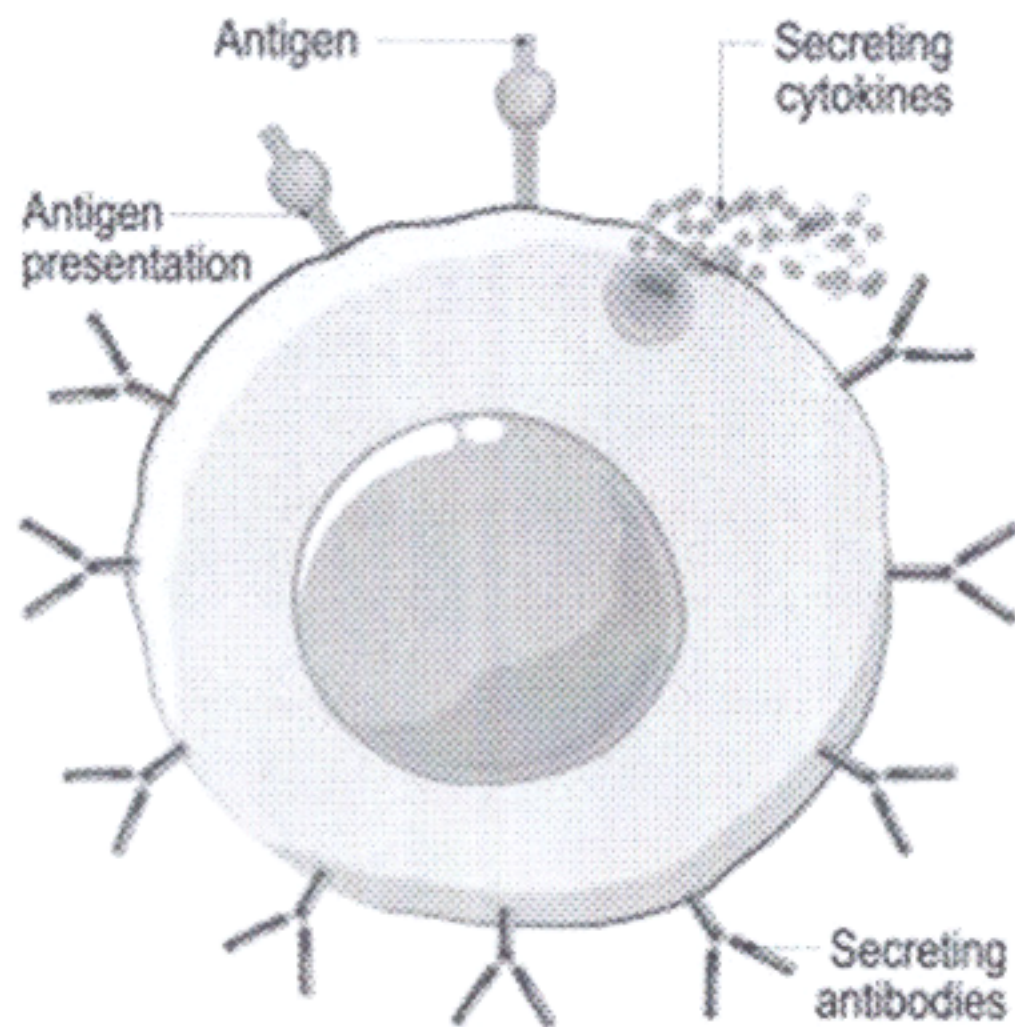
B lymphocytes-

-responsible for the humoral immunity component of the adaptive immune system. These white blood cells produce antibodies, which play a key part in immunity. Each B cell contains a single round nucleus.

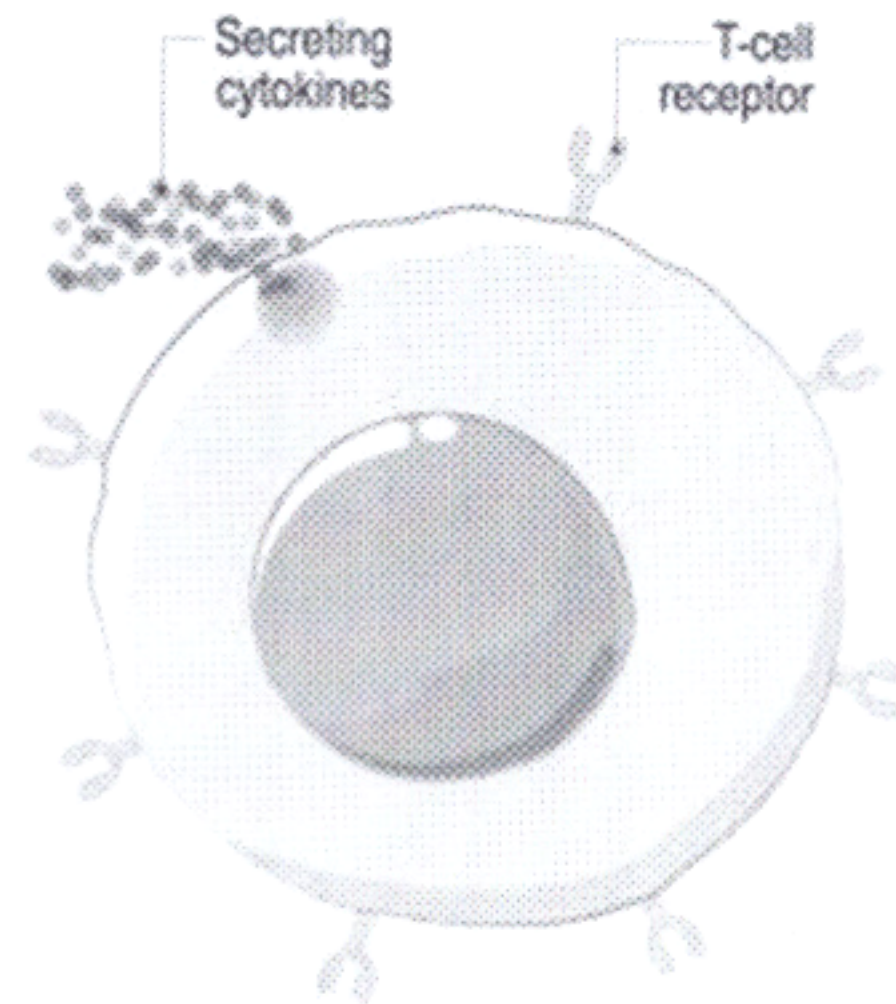
T lymphocytes-

-one of the important white blood cells of the immune system and play a central role in the adaptive immune response. T cells can be distinguished from other lymphocytes by the presence of a T-cell receptor (TCR) on their cell surface.

Cells of the adaptive immune system



B-cell

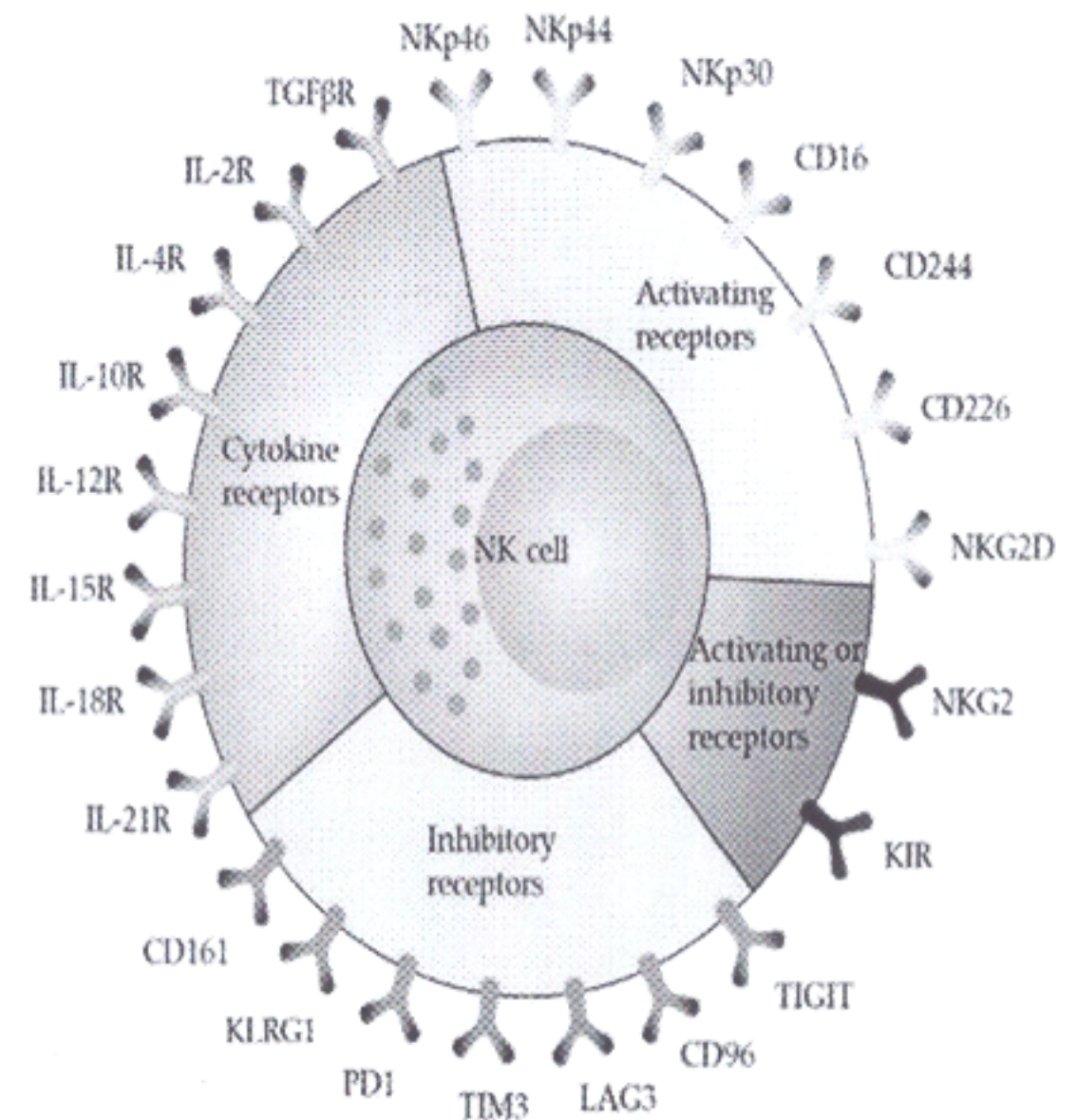


T-cell

Cells of Innate immune system

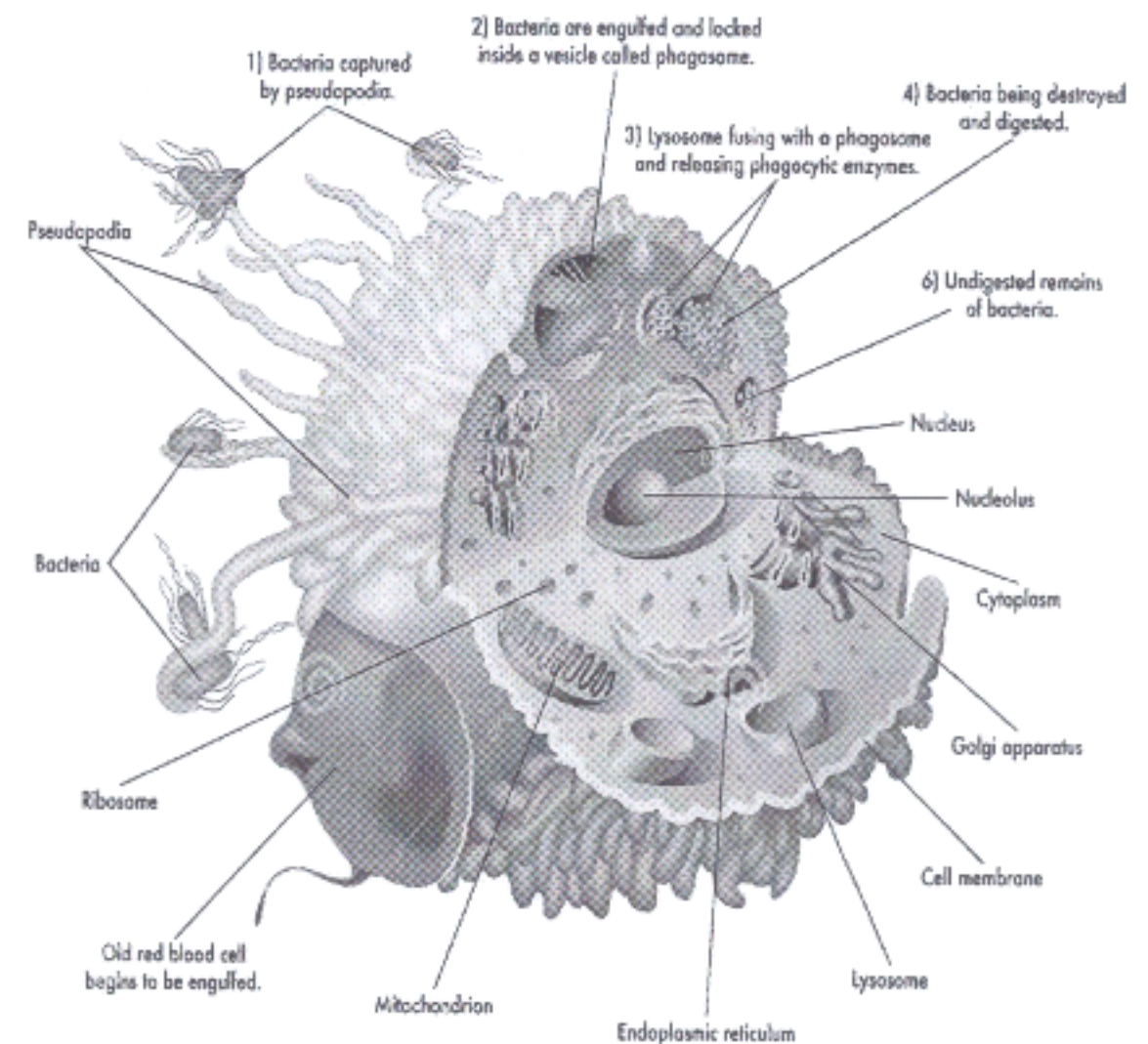
Natural Killer Cells-

Natural killer cells, also known as NK cells or large granular lymphocytes (LGL), are a type of cytotoxic lymphocyte critical to the innate immune system that belong to the rapidly expanding family of innate lymphoid cells (ILC) and represent 5–20% of all circulating lymphocytes in humans.



Macrophages-

- macrophage, type of white blood cell that helps eliminate foreign substances by engulfing foreign materials and initiating an immune response. Macrophages are constituents of the reticuloendothelial system (or mononuclear phagocyte system) and occur in almost all tissues of the body.

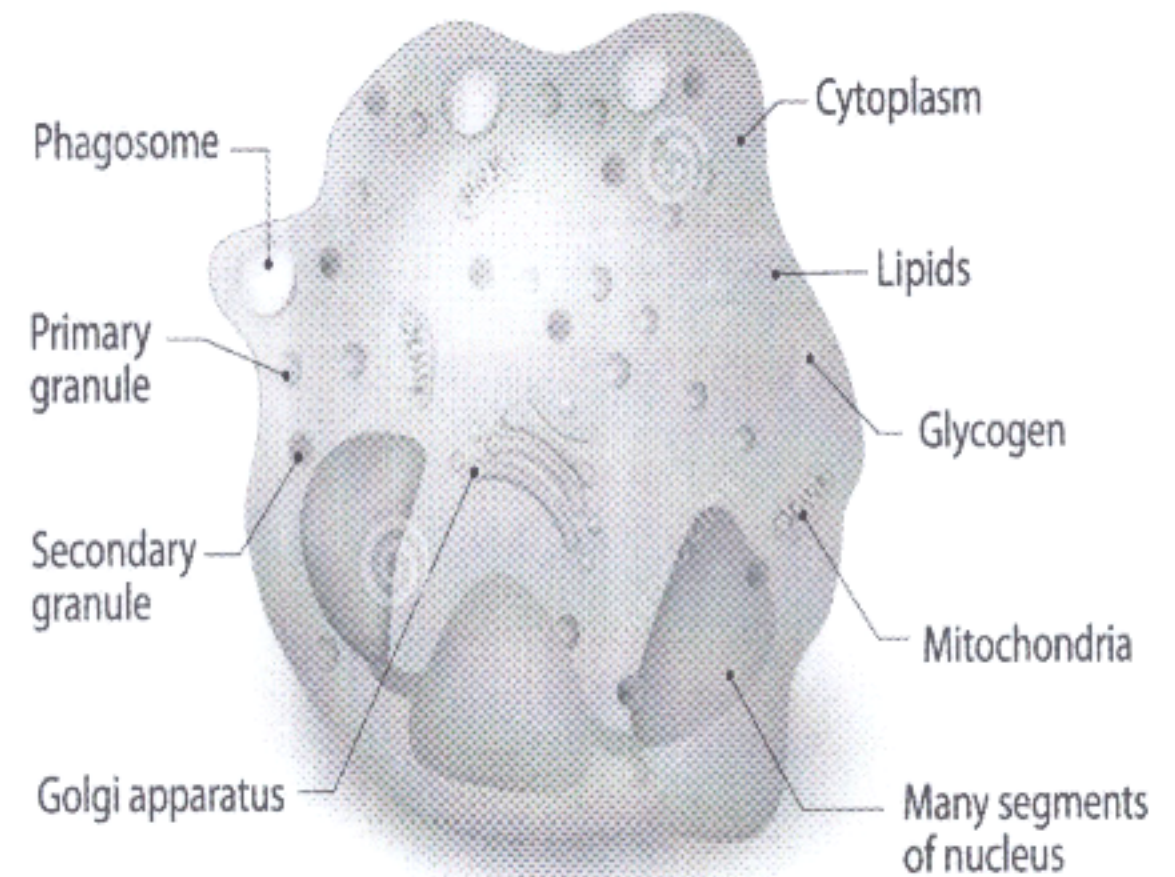


Neutrophils-

Comprises approximately 60% of the peripheral blood leukocytes, neutrophils are the most leukocyte population. numerous

- Neutrophils have multi lobed nuclei (2-5) and cytoplasmic granules that stain with both acid and basic dyes.
- often called polymorphonuclear cells (PMN's).

The neutrophil's main role is in inflammation.



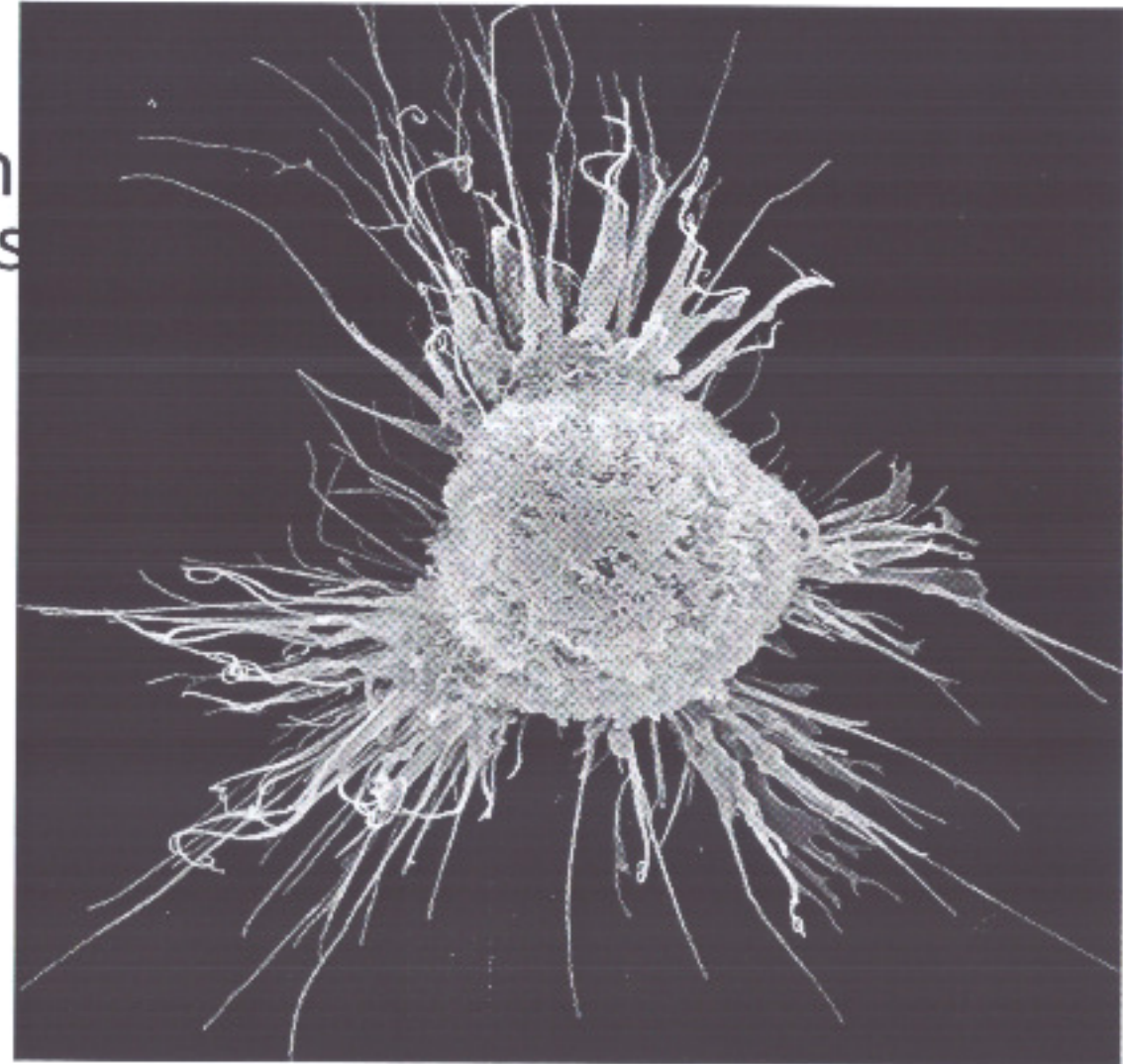
Dendritic Cells-

Specialized phagocytic cells found in most tissues.

Arise both from the myeloid and lymphoid lineages.

Abundant at interfaces between the external and internal environments (skin, lining of the gastrointestinal tract), where they encounter invading pathogens.

Actively motile; continuously sample surroundings by endocytic processes.



Mast Cells-

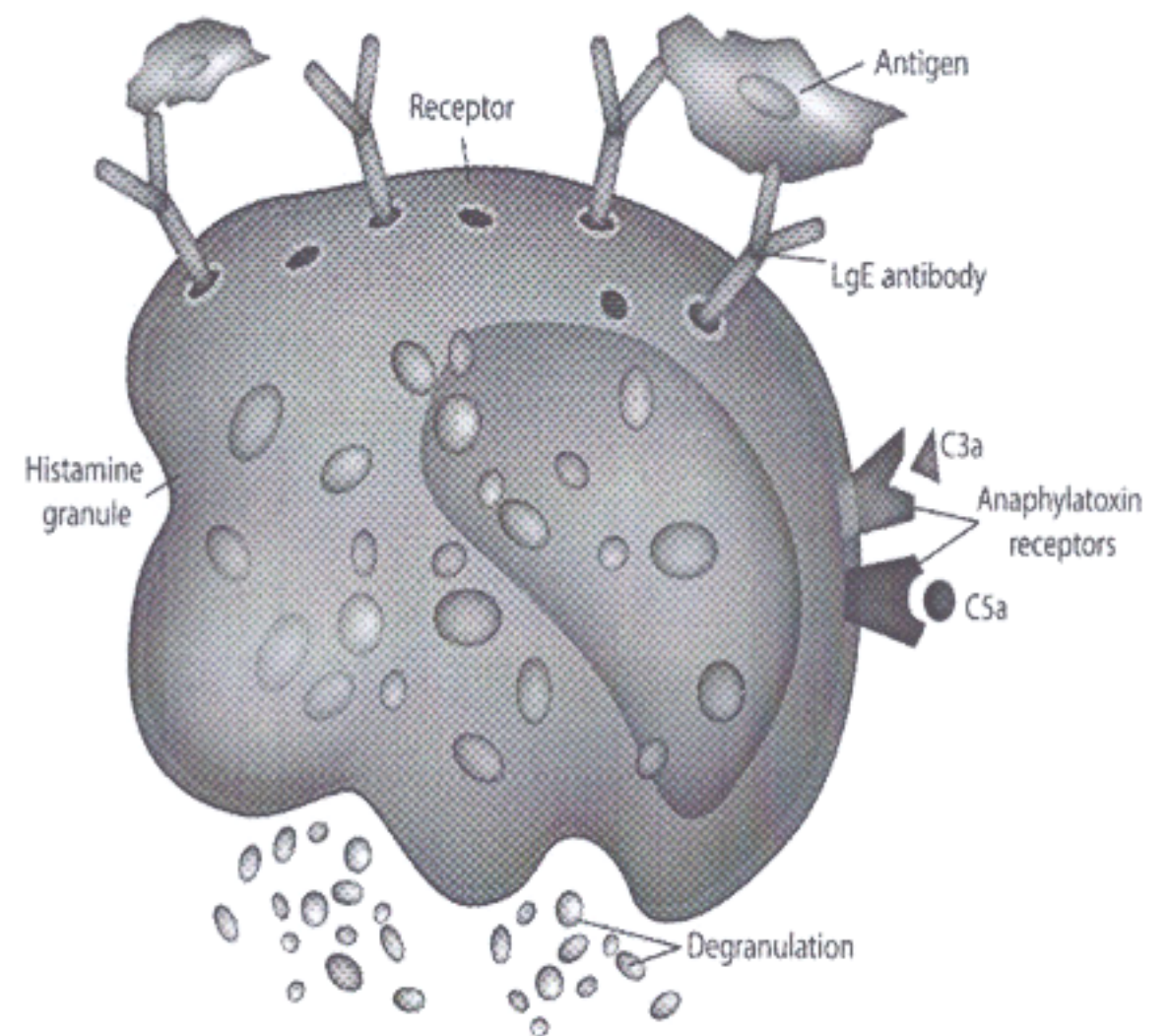
Similar importance in allergic reactions as basophils, but only found in tissues.

Contain granules with preformed mediators to be released after stimulation

- histamine, prostaglandins
- leukotrienes

Stimulation of mast cells occurs by the anaphylatoxins (complement proteins C3a and C5a) or by cross-linking of surface immunoglobulin (IgE).

Mast cell



Basophils-

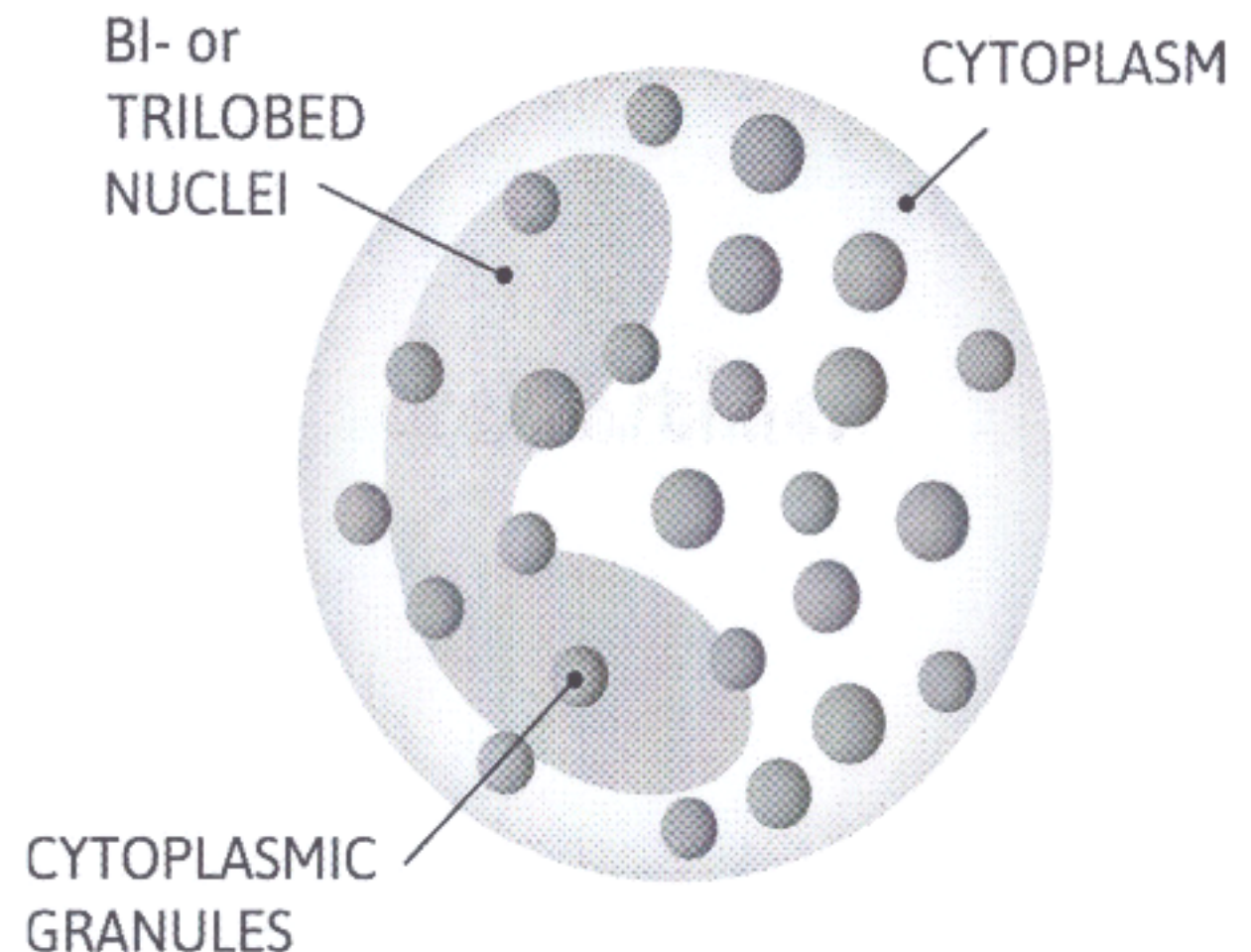
Basophils have bilobed nuclei and cytoplasmic granules that stain with the basic dye methylene blue.

.Found in low numbers in the blood (<1%). Act like mast cells.

. They are nonphagocytic

Involved in allergic reactions (Type I responses). • Have high affinity Fc receptors for IgE on their surface.

BASOPHIL

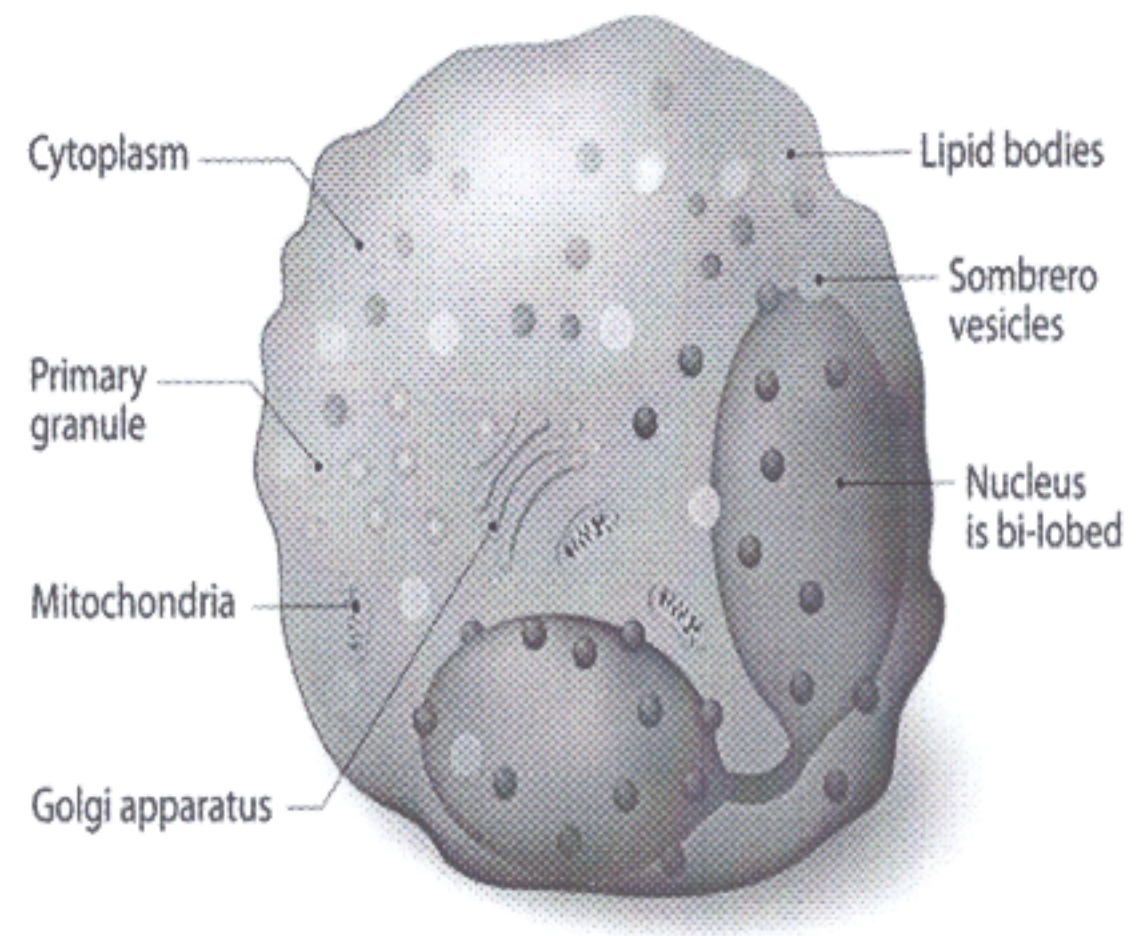


Eosinophils-

Eosinophils have bilobed nuclei and cytoplasmic granules that stain with the acid dye eosin.

- Constitute 1%-3% of circulating leucocytes. Involved in asthma.

Eosinophils are phagocytic, and are active in parasitic infection.



Thank you