

To,
The Principal
SSES Amt's Science College,
Congress Nagar, Nagpur-12

Subject: For permission to conduct the add on courses in Zoology department during the session 2023-2024

Respected Sir,

This is to request you that, the teachers of Zoology department have prepared the syllabus and modules of the 30 hours certificate courses for the session 2023-2024.


The details of the course module, syllabus and time table is submitted here with.

Hence please permit to run the add on courses and oblige me.

Thanking you

17/06/2023

Yours sincerely


Dr. A. D. Bobdey
Professor & Head
Department of Zoology,
Shri Shivaji Science College,
Congress Nagar, Nagpur-12.

Permitted
MSHORE

Shivaji Education Society Amravati's
Science College Congress Nagar, Nagpur
Department of Zoology
Session: 2023-24

NOTICE

**CERTIFICATE COURSE IN "ADVANCED HAEMATOLOGY:
DAIGNOSIS AND MANAGEMENT"
REGISTRATION OPEN**

Date: 20/07/2023

All students of B.Sc. I, II, III are informed that the Department of Zoology, Shri Shivaji Science College, Nagpur is pleased to announce the opening of registrations for the **Certificate Course in Advanced Haematology: It's Diagnosis and Management**. This course is designed to provide students with advanced knowledge and practical skills in Haematology.

Only 80 seats are available for the course, admission will be done on first come first admit basis.

Interested student can give their names to the course coordinator before 25/07/23.

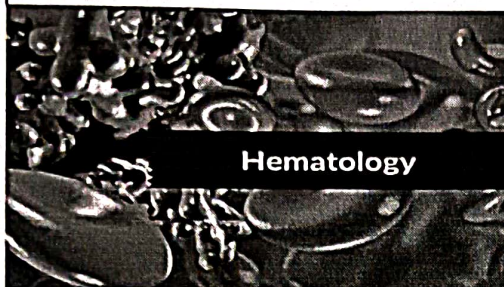
Course coordinator: Dr. R. A. Patil Bhagat

R. A. Patil

Dr. R. A. Patil Bhagat
Coordinator

Advanced Haematology: It's Diagnosis and Management.
Department of Zoology

CERTIFICATE COURSE IN ADVANCED HEMATOLOGY: DIAGNOSIS AND MANAGEMENT



**Free Certificate course for
College Students**

Duration – 30 Hours (10 Weeks)

**Process of Registration- Early
birds will be admitted**

Course Objectives:

1. To understand the scope and importance of hematology.
2. To learn the function of normal cellular components and the formation of blood.
3. To differentiate between various hematological disorders and their management.
4. To gain hands-on experience with hematology laboratory equipment and procedures.
5. Let the students understand the human blood and its disorders based on an up-to-date knowledge and in a simple stylish way.
6. Familiarize students with the pathophysiological background of main blood disorders.



**Department of Zoology
SSES Amt's Science College, Congress
Nagar, Nagpur**

Hematology is a fascinating and vital field of medicine that focuses on the study of blood, blood-forming organs, and blood diseases. It is the branch of medicine concerned with the study of the cause, prognosis, treatment, and prevention of diseases related to blood. It covers a wide range of disorders including but not limited to hemophilia, leukemia, lymphoma, and sickle-cell anemia. Hematology is usually a part of the curriculum where students learn the basics of blood diseases and their treatments. The field of hematology offers a wide range of career opportunities. This course offers an exciting career path, impactful research opportunities, It's a field with immense potential for growth and fulfillment.

Last Date for Registration: 25/07/2023

For Registration Contact: Dr. R.A. Patil Bhagat (Coordinator)

SSES Amravati's Science College, Congress Nagar, Nagpur-12

DEPARTMENT OF ZOOLOGY

COURSE MODULE AND SYLLABUS

Course Title: Certificate Course in Advanced Hematology: Diagnosis and Management (Biomedical Science)

Course Coordinator: Dr. Mrs. R. A. Patil Bhagat

Course description:

Hematology is a fascinating and vital field of medicine that focuses on the study of blood, blood-forming organs, and blood diseases. It is the branch of medicine concerned with the study of the cause, prognosis, treatment, and prevention of diseases related to blood. It covers a wide range of disorders including but not limited to **hemophilia, leukemia, lymphoma, and sickle-cell anemia**. Hematology is usually a part of the curriculum where students learn the basics of blood diseases and their treatments. The field of hematology offers a wide range of career opportunities. Hematologists are in high demand globally due to the prevalence of blood disorders. After retirement, many hematologists open their own clinics, ensuring a continuous source of income. Additionally, hematologists can work in hospitals, medical institutes, or pursue careers in research and academia. Haematology covers a broad range of diseases and conditions related to both malignant and non-malignant blood disorders. It is at the forefront of dynamic developments in molecular medicine. Advances include individualized targeted therapies, genome editing, gene and cellular therapies, and immune-based treatments. Students get to explore cutting-edge research and contribute to groundbreaking discoveries. Specialists in benign and malignant haematology are in increasing demand. Opportunities exist in basic science, clinical practice, and translational medicine. Haematologists play a crucial role in patient care and research. It offers deeply rewarding work. Students can directly help patients with life-threatening illnesses through hands-on care and practice-changing research. Advances have transformed some hematologic disorders from terminal diagnoses to curable diseases or manageable lifelong conditions. This course offers an exciting career path, impactful research opportunities, It's a field with immense potential for growth and fulfilment. This course will cover building block contains to understand healthcare and its integral relationship with zoology.

Course Objectives:

1. To understand the scope and importance of haematology.
2. To differentiate between various haematological disorders and their management.
3. To gain hands-on experience with haematology laboratory equipment and procedures.
4. Let the students understand the human blood and its disorders based on an up-to-date knowledge and in a simple stylish way.
5. Familiarize students with the pathophysiological background of main blood disorders.

Instructional Strategies: Theory class, Practical, Video clips, Models etc.

Evaluation Strategies: Oral discussions and Final MCQ examination.

Course outline: Course Outlines: (Relevance)

1. Basic Hematology
2. Cellular Function and Disorders
3. Stem Cells and Hematopoiesis
4. Leukocyte and Red Blood Cell (RBC) Function
5. Non-Malignant Disorders
6. Hematologic Malignancies
7. Blood Groups and Compatibility Testing
8. Transfusion Transmitted Diseases
9. Laboratory Techniques and Diagnostics
10. Blood Testing Principles
11. Interpretation of Hematologic Tests
12. Clinical Application: Case Studies and Clinical Correlation, Research Opportunities.

Course Outcomes (COs):

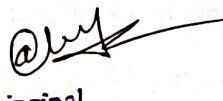
1. Students will be able to perform and interpret various hematological tests.
2. Students will understand the operational principles of hematology instruments and troubleshoot them.
3. Students will be able to evaluate normal and abnormal cell morphology and associate them with diseases.
4. Master the pathobiology of hematological disorders encountering in hospital practice.
5. Interpret diagnostic test results and erroneous test results and able to fix them.
6. This skill base course may offer the job opportunities in hospitals, pathology laboratories and research laboratories.


Duration of course: Ten weeks (30 Hours)

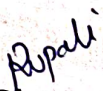
The Structure of Syllabus and system of evaluation -

Course	Theory Papers and Practical	Total Marks	
		Theory	Practical
	Theory paper- Advanced Hematology: Diagnosis and Management (Biomedical Science)	80	20

Certificate Course in Haematology	* Theory examination will be of MCQ pattern having 60 or 80 questions each with equal marks.		
	* Practical examination will be based on performance evaluation in the laboratory	100	

for 
Principal
Science College
Congress Nagar
Nagpur


Internal Quality Assurance Cell
(IQAC)
S. S. E. S. A. Science College
Congress Nagar, Nagpur


Dr. R. A. Patil Bhagat
Coordinator
Advanced Haematology: It's Diagnosis and Management.
Department of Zoology

SYLLABUS

Certificate course (10 weeks)
(Health Care (Biomedical Science))

Theory-

UNIT- I Introduction to Hematology

- Scope and importance of haematology.
- Equipment and chemicals used in a haematology laboratory.
- Morphology of normal and abnormal blood cells.
- Haematological disorders and their association with cell morphology.

UNIT – II Hematological Testing and Procedures

- Blood collection and preservation methods.

- Preparation and staining of peripheral blood films.
- Haemoglobin estimation methods.
- Complete Blood Cell Count: RBC, WBC, Platelet count, and indices.

UNIT – III Hematological Disorders

- Anaemia and polycythaemia: Types, causes, and management.
- Leukopenia and leucocytosis: Diagnosis and treatment.
- Thrombocytopenia and thrombocytosis: Clinical significance and management.
- Elevated ESR and its implications.

Practical-

- a) Blood sampling techniques and specimen acceptability
- b) Red blood cell count and White blood cell count
- c) Estimation of hemoglobin concentration
- d) Preparation of blood Smear, Platelet smear, Clotting and bleeding time
- e) Case studies and practical sessions on hematological analysis.

Distribution of marks: -

- | | |
|---|----|
| 1. Blood sampling techniques- | 05 |
| 2. Red blood cell count and White blood cell count- | 05 |
| 3. Estimation of hemoglobin - | 05 |
| 4. Case studies - | 05 |

Week-wise teaching plan:

Week	Hrs.	Syllabus
Week 1	1	Introduction to Hematology
	1	Scope and importance of haematology.
	1	Equipment and chemicals used in a haematology laboratory
Week 2	1	Equipment and chemicals used in a haematology laboratory
	2	Blood sampling techniques and specimen acceptability (Practical)
Week 3	1	Hematological disorders
	2	Blood collection and preservation methods.
Week 4	1	Preparation and staining of peripheral blood films.
	1	Hemoglobin estimation methods
Week 5	2	Complete Blood Cell Count: RBC, WBC, Platelet count, and indices.
	1	Anemia: Types, causes, and management.
Week 6	2	RBC and WBC Count (Practical)
	1	polycythemia: Types, causes, and management.
Week 7	2	Leukopenia and leukocytosis: Diagnosis and treatment
	1	Estimation of haemoglobin
Week 8	2	Preparation of blood Smear, Platelet smear, Clotting and bleeding time(practical)
	1	Estimation of haemoglobin (practical)
Week 9	2	Case studies (Practical)
	1	Thrombocytopenia Clinical significance and management
Week 10	1	Thrombocytosis: Clinical significance and management.
	2	Elevated ESR and its implications.

SSES AMT'S SCIENCE COLLEGE, CONGRESS NAGAR, NAGPUR-12

**Certificate Course in Advanced Hematology: Diagnosis and
Management (Biomedical Science)
Time Table**

Day	Theory
Friday	RPB (B13) Theory 4.00 PM – 5.00 PM
Saturday	SVG (B13) Theory, 4.00 PM – 5.00 PM
	RPB (ZL) practical, 5.00 PM – 6.00 PM

**Shri Shivaji Education Society Amravati's
Science College, Congress Nagar, Nagpur
Session: 2023-24**

DEPARTMENT OF ZOOLOGY

Certificate course in Advanced Hematology: Diagnosis and Management

Sr. No	Roll No		Name of Student
1			ATAK VAIBHAV KISHOR
2		Ku	BAHIRA RANI BASANT
3		Ku	BOKADE SANIKA MANOJ
4		Ku	CHAVHAN RAKHI BHARAT
5		Ku	DATE GAURI SUNIL
6		Ku	DHEK AISHWARYA MADAN
7		Ku	FADDAS SAJANI BAPURAV
8		Ku	GAIKWAD SNEHA SAMBHAJI
9		Ku	GARJELWAR MANSI SURENDRA
10		Ku	GAWANDE AYUSHRI ANIL
11		Ku	GHUBADE LEYNESHA SANJAY
12			GONNADE TILAK SANTOSH
13			JAMPALWAR YASH RAKESH
14		Ku	KARWADE AWANI PRASHANT
15		Ku	KEDAR SANIYA CHANDRASHEKHAR
16		Ku	MADARE ANOBHA NARENDRA
17			MALIK NIKHIL JITENDRA
18		Ku	MESHRAM TANVI SURYABHAN
19			MOTGHARE ARYAN MAHENDRA
20		Ku	RAGIT SAMPADA RAVICHANDRA
21		Ku	RAHANGDALE PRERNA RUPCHAND
22		Ku	RAHATE KHUSHI BHUMIRAJ
23		Ku	RAJPUROHIT KALYANI GIRISH
24		Ku	RAUT HIMANSHI SUNIL
25		Ku	RAUT MOHINI VINOD
26		Ku	SHARMA RASHI SANDEEP
27		Ku	SHEIKH SHAHINA AKIL
28		Ku	SHUKLA VAISHNAVI SANJAY

29		Ku	SIDAM ASHWINI YUVRAJ
30			TITARMARE PRANAV CHANDRAKANT
31		Ku	UPLOPWAR MANASVI PRAKASH
32		Ku	VARADE NIKITA SANDEEP
33		Ku	ZADE YUTIKA SANJAY
34		Ku	AYYAGARI RENUKA SUDHAKAR
35		Ku	BANTE SHRADDHA GUDDU
36		Ku	BEHAR KHUSHI RAJU
37		Ku	BHAISARE CHETANA DINESH
38		Ku	BHIMTE SHRIYA SURENDRAKUMAR
39		Ku	CHOUDHARY VAISHNAVI CHANDRAKANT
40		Ku	GANVIR ANUSHKA ANIL
41		Ku	GOSWAMI DIVYA VIKAS
42		Ku	GOSWAMI LAXMI KISHOR
43		Ku	GUPTA SHREYA RAVINDRA
44		Ku	KALE MRUNALI CHANDRAJEET
45		Ku	KOLHE HARSHINI ARVIND
46		Ku	LONDE HARSHADA RAJESH
47		Ku	MOHOD SAMRUDDHI SATISH
48		Ku	MUDE DIVYA SUDHAKAR
49		Ku	PARIHAR SHREYA SUSHILSINGH
50		Ku	PATHADE MRUDULA PRAVIN
51		Ku	PHAD ANURADHA RAJABHAU
52		Ku	PUSADKAR ANNADA VIVEK
53		Ku	RAMTEKE ROHANSHI SHESHRAJ
54		Ku	RATHOD SHALINI ANIL
55		Ku	RAUT RIYA TRILOKCHAND
56		Ku	SAHARE JANVI RAJU
57		Ku	SHRIRAME FALGUNI SANDIP
58		Ku	THAKARE KADAMBARI SANJAY
59			TIDKE VAIBHAV WAMAN
60		Ku	UPASE VAIDEHI MANOHAR
61		Ku	WARHEKAR TWINKLE GOKUL
62		Ku	BAIS MANSA KISHORSINGH
63			CHAURAGADE PRANAY RAJESH

64		Ku	DEVIKAR DIVYA ARUN
65		Ku	GAWANDE MAYURI CHANDRAKANT
66		Ku	GHADGE CHETNA ARVIND
67		Ku	GOKHALE RENUKA PARAG
68		Ku	JAMGADE KASHISH CHANDAN
69		Ku	KOCHE MAYURI WALMIK
70		Ku	KURREWAR APARNA SHRIKANT
71		Ku	LIKHITKAR VAISHANAVI SHANKARRAO
72		Ku	LONARE NEHA CHANDAN
73		Ku	MAHANT MONALI PUNODAS
74		Ku	MESHRAM ANSHU GANESH
75		Ku	MESHRAM ANUSHREE RAVI
76		Ku	PANEKAR TANNUSHREE SHIRISH
77		Ku	PATEL JHUHI CHAMAN
78		Ku	SOMKUWAR RADHA RAJESH
79		Ku	SUBHEDAR PRAPTI ANANT
80		Ku	TALMALE YUKTI KULDEEP
81		Ku	THAKKAR VAIBHAV VILESH

Rupali

Dr. R. A. Patil Bhagat
Coordinator

Advanced Haematology: It's Diagnosis and Management.
Department of Zoology

Ch

Head of the Zoology Department

Shri Shivaji Education Society Amravati's
Science College Congress Nagar, Nagpur
Department of Zoology
Session: 2023-24

NOTICE

Date: 25/07/2023

All the students of B.Sc. I, II, III are hereby informed that classes of Certificate Course In Advanced Haematology: Diagnosis And Management will start from 01 August 2023 to 07 October 2023. All are informed to attend the lecture.

Time Table

Day	Theory
Friday	RPB (B13) Theory 4.00 PM – 5.00 PM
Saturday	SVG (B13) Theory, 4.00 PM – 5.00 PM
	RPB (ZL) practical, 5.00 PM – 6.00 PM

Rupali

Dr. R. A. Patil Bhagat
Coordinator

Advanced Haematology: It's Diagnosis and Management.
Department of Zoology

Shri Shivaji Education Society Amravati's
Science College Congress Nagar, Nagpur
Department of Zoology
Session: 2023-24

NOTICE

CERTIFICATE COURSE EXAMINATION SCHEDULE

Date: 16/10/2023

All the students of B.Sc. I, II, III enrolled in the **Certificate Course in Advanced Haematology: Diagnosis And Management**, This is to inform you that the examination for the certificate course will be held as per the following schedule:

- **Exam Date:** 30 October 2023
- **Time:** 10:00 am to 10:45 am
- **Venue:** Shri Shivaji Science College, Nagpur

All the students have to reach 15 min before the exam time.

Rupali

Dr. R. A. Patil Bhagat
Coordinator

Advanced Haematology: It's Diagnosis and Management.
Department of Zoology



Shri Shivaji Education Society Amravati's
Science College, Congress Nagar, Nagpur
Session: 2023-24

DEPARTMENT OF ZOOLOGY
Certificate course in Advanced Haematology.

Sr. No	Roll No		Name of Student	Sign
1	101		ATAK VAIBHAV KISHOR	
2	102	Ku	BAHIRA RANI BASANT	
3	103	Ku	BOKADE SANIKA MANOJ	
4	104	Ku	CHAVHAN RAKHI BHARAT	
5	105	Ku	DATE GAURI SUNIL	
6	106	Ku	DHEK AISHWARYA MADAN	
7	107	Ku	FADDAS SAJANI BAPURAV	
8	108	Ku	GAIKWAD SNEHA SAMBHAJI	
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11	111	Ku	GHUBADE LEYNESHA SANJAY	
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18	118	Ku	MESHRAM TANVI SURYABHAN	
19	119		MOTGHARE ARYAN MAHENDRA	
20	120	Ku	RAGIT SAMPADA RAVICHANDRA	
21	121	Ku	RAHANGDALE PRERNA RUPCHAND	
22	122	Ku	RAHATE KHUSHI BHUMIRAJ	
23	123	Ku	RAJPUROHIT KALYANI GIRISH	
24	124	Ku	RAUT HIMANSHI SUNIL	
25	125	Ku	RAUT MOHINI VINOD	

26	126	Ku	SHARMA RASHI SANDEEP	<i>R. Sharma</i>
27	127	Ku	SHEIKH SHAHINA AKIL	<i>Shahina</i>
28	128	Ku	SHUKLA VAISHNAVI SANJAY	<i>AP. Shukla</i>
29	129	Ku	SIDAM ASHWINI YUVRAJ	<i>Asidam</i>
30	130		TITARMARE PRANAV CHANDRAKANT	<i>P. Pranam</i>
31	131	Ku	UPLOPWAR MANASVI PRAKASH	<i>UP. Prakash</i>
32	132	Ku	VARADE NIKITA SANDEEP	<i>N. Varade</i>
33	133	Ku	ZADE YUTIKA SANJAY	<i>Z. Zade</i>
34	134	Ku	AYYAGARI RENUKA SUDHAKAR	<i>R. Ayyagari</i>
35	135	Ku	BANTE SHRADDHA GUDDU	<i>B. Bante</i>
36	136	Ku	BEHAR KHUSHI RAJU	<i>B. Behar</i>
37	137	Ku	BHAISARE CHETANA DINESH	<i>B. Bhaire</i>
38	138	Ku	BHIMTE SHRIYA SURENDRAKUMAR	<i>B. Bhimte</i>
39	139	Ku	CHOUDHARY VAISHNAVI CHANDRAKANT	<i>C. Choudhary</i>
40	140	Ku	GANVIR ANUSHKA ANIL	<i>A. Ganvi</i>
41	141	Ku	GOSWAMI DIVYA VIKAS	<i>G. Divya</i>
42	142	Ku	GOSWAMI LAXMI KISHOR	<i>G. Laxmi</i>
43	143	Ku	GUPTA SHREYA RAVINDRA	<i>G. Shreya</i>
44	144	Ku	KALE MRUNALI CHANDRAJEET	<i>K. Mrunali</i>
45	145	Ku	KOLHE HARSHINI ARVIND	<i>H. Kolhe</i>
46	146	Ku	LONDE HARSHADA RAJESH	<i>L. Londe</i>
47	147	Ku	MOHOD SAMRUDDHI SATISH	<i>M. Samruddhi</i>
48	148	Ku	MUDE DIVYA SUDHAKAR	<i>M. Divya</i>
49	149	Ku	PARIHAR SHREYA SUSHILSINGH	<i>P. Shreya</i>
50	150	Ku	PATHADE MRUDULA PRAVIN	<i>P. Mrudula</i>
51	151	Ku	PHAD ANURADHA RAJABHAU	<i>P. Anuradha</i>
52	152	Ku	PUSADKAR ANNADA VIVEK	<i>P. Annada</i>
53	153	Ku	RAMTEKE ROHANSHI SHESHRAJ	<i>R. Rohan</i>
54	154	Ku	RATHOD SHALINI ANIL	<i>R. Shalini</i>
55	155	Ku	RAUT RIYA TRILOKCHAND	<i>R. Riya</i>
56	156	Ku	SAHARE JANVI RAJU	<i>J. Janvi</i>
57	157	Ku	SHRIRAME FALGUNI SANDIP	<i>S. Falguni</i>
58	158	Ku	THAKARE KADAMBART SANJAY	<i>T. Kadambart</i>
59	159		TIDKE VAIBHAV WAMAN	<i>V. Tidke</i>
60	160	Ku	UPASE VAIDEHI MANOHAR	<i>V. Upase</i>

61	161	Ku	WARHEKAR TWINKLE GOKUL	Twinkle
62	162	Ku	BAIS MANSA KISHORSINGH	Mansa
63	163		CHAURAGADE PRANAY RAJESH	Pranay
64	164	Ku	DEVIKAR DIVYA ARUN	Divya
65	165	Ku	GAWANDE MAYURI CHANDRAKANT	Mayuri
66	166	Ku	GHADGE CHETNA ARVIND	Chetna
67	167	Ku	GOKHALE RENUKA PARAG	Renuka
68	168	Ku	JAMGADE KASHISH CHANDAN	Kashish
69	169	Ku	KOCHE MAYURI WALMIK	Mayuri
70	170	Ku	KURREWAR APARNA SHRIKANT	Aparna
71	171	Ku	LIKHITKAR VAISHANAVI SHANKARRAO	Vaishnavi
72	172	Ku	LONARE NEHA CHANDAN	Neha
73	173	Ku	MAHANT MONALI PUNODAS	Monali
74	174	Ku	MESHRAM ANSHU GANESH	Anshu
75	175	Ku	MESHRAM ANUSHREE RAVI	Anushree
76	176	Ku	PANEKAR TANNUSHREE SHIRISH	Tannushree
77	177	Ku	PATEL JHUHI CHAMAN	Juhi
78	178	Ku	SOMKUWAR RADHA RAJESH	Radha
79	179	Ku	SUBHEDAR PRAPTI ANANT	Prapti
80	180	Ku	TALMALE YUKTI KULDEEP	Yukti
81	181	Ku	THAKKAR VAIBHAV VILESH	Vaibhav

Co-coordinator

Name: Dr. R.A. Pali Bhagat

Head of the Zoology Department

Dr. A. D. Bobdey
Professor & Head
Department of Zoology,
Shri Shivaji Science College,
Congress Nagar, Nagpur-12.

Shri Shivaji Education Society Amravati's
Science College, Congress Nagar, Nagpur

DEPARTMENT OF ZOOLOGY

Academic session 2023-2024

Certificate course in

ADVANCED HEMATOLOGY: DIAGNOSIS AND MANAGEMENT

MCQ TEST EXAMINATION

Time: 45 min

Maximum Marks: 80

N.B.: Solve all the questions

Roll. No.:

✓ Tick for right answer

1. An example of a waste product from the breakdown of hemoglobin is ____.

- A. Transferrin B. Hemoglobin S C. Biliverdin D. Jaundice

2: Ejection of blood from the right ventricle will continue until ____.

- A. Pressure in the pulmonary artery is greater than pressure in the right ventricle
B. Pressure in the pulmonary artery is less than pressure in the right ventricle
C. Pressure in the aorta is greater than pressure in the right ventricle

3: Except for _____, the following statements about blood are true.

- A. Contains about 55 percent plasma B. PH is slightly acidic
C. Contains dissolved gases D. Viscosity is five times greater than water

4: Leukopenia ____.

- A. The volume of RBC in a blood sample
B. Type AB blood contains antigens A and B.
C. May indicate a disease such as cirrhosis of the liver or tuberculosis

5: Mature _____ are the most numerous blood cells and do not have a nucleus.

- A. Erythrocytes B. Monocyte C. Megakaryocyte D. Platelets

6: Normal whole blood contains _____ g of hemoglobin per 100 ml.

- A. 4-8 B. 12-18 C. 15-20 D. 30-35 E. 42-48

7: Plasma is ____ while formed elements are ____.

- A. A blood gas; blood clots
B. The liquid portion of blood; the cells
C. Lacking in protein; regulators of blood osmolality

8: The least numerous but largest of all agranulocytes is the ____.

- A. Monocyte B. Basophil C. Erythrocytes

9: The majority of glomeruli are located in the _____ of the kidney.

- A. Vasa recta B. Medulla C. Cortex D. Pelvis

10: Hormones called _____ are involved in regulation of white blood cell populations.

- A. Erythropoietin B. Bilirubin C. Thrombopoietin D. Colony-stimulating factors

- 11: Granulocytes are formed in red bone marrow, or _____oid tissue.
A. Hemat B. Erythr C. Myel D. Eosin
- 12: No visible cytoplasmic granules are present in _____.
A. Basophils. B. Monocytes. C. Eosinophils. D. Neutrophils
- 13: The total white blood cell count ranges from _____ to _____/mm³ of blood.
A. 2400, 5000 B. 4800, 10,800 C. 500, 2000 D. 7200, 16,000
- 14: A person with type ab blood has _____ rbc antigen(s).
A. No B. Anti-A and anti-B C. Anti-A D. Anti-B E. A and B
- 15: _____ is a plasma protein that serves as a Défense mechanism of the immune system.
A. Albumin B. Globulin C. Fibrinogen D. Prothrombin
- 16: Agglutination of rbc's is the result of a transfusion reaction caused by _____ blood.
A. Mismatched B. Matched C. Both A & BD. None of the above
- 17: The common pathway in coagulation ends with _____.
A. Conversion of soluble fibrinogen to insoluble fibrin
B. May indicate a disease such as cirrhosis of the liver or tuberculosis
C. Both
D. None of these
- 18: With respect to abo and rh blood groups, there are _____ different blood types.
A. Ten B. Four C. Eight
- 19: A person who lacks agglutinin a but has agglutinin b would have blood type _____.
A. A B. B C. AB D. O
- 20: Vacuum blood tubes come in all of the following sizes except _____ ml.
A. 20 B. Rubber C. 90 D. Cost
- 21: _____ involves a cascade of reactions leading to the conversion of fibrinogen to fibrin.
A. Vascular spasm. B. The platelet phase. C. Retraction D. Coagulation
- 22: All of the following conditions impair coagulation except _____.
A. Vitamin K deficiency B. Vascular spasm C. Liver disease
- 23: Blood reticulocyte counts provide information regarding _____.
A. Rate of erythrocyte formation B. Rate of platelet formation
C. Clotting ability of the blood D. WBC ability to defend the body against disease
- 24: The structural framework of a blood clot is formed by _____.
A. Fibrinogen B. Increase hypoxemia C. Thrombus; embolus
- 25: Abnormally low levels of erythrocytes caused by excessive bleeding is called _____.
A. Sick-cell anemia B. Polycythemia C. Hemorrhagic anemia
- 26: Complications of aplastic anemia generally do not include _____.

A. Bleeding disorders. B. Suppressed immunity. C. Impaired formation of all formed elements.

27: During leukopoiesis, neutrophils are derived from _____.

A. Myeloblasts B. Biliverdin C. Type O-

28: James has a hemoglobin measurement of 16 g/100 ml blood. this is _____.

A. Within the normal range B. Abnormally low. C. Above normal

29: The hematocrit for the female with iron-deficiency anemia was _____.

A. Below normal B. Above normal C. Normal

30: The oxygen-carrying capacity of the blood is evaluated using _____.

A. Cholesterol measurements B. Hemoglobin measurements
C. Hematocrit measurements and hemoglobin measurements

31: The stoppage of blood loss, or _____, is very important to the maintenance of homeostasis.

A. Hematopoiesis B. Neutrophil C. Lymphocytes

32: The total volume of blood in the body of a 76-kg man is approximately _____ liters.

A. 10. B. 5.3. C. 4.4. D. 3.8.

33: Tissue factor (factor iii) is a factor in the _____ pathway.

A. Fibrinolytic B. Retraction C. Extrinsic D. Intrinsic

34: The special type of hemoglobin present in fetal red blood cells is _____.

A. Hemoglobin F B. Hemoglobin B C. Hemoglobin A D. Hemoglobin

35: The antibodies that attack antigens on foreign rbc's are called _____.

A. Albumin B. Agglutinins C. Red bone marrow

36: Stage 2 of labor lasts _____ for a first baby and _____ in later births.

A. An average of 12 to 14 hours; 4 to 6 hours B. An average of 4 to 6 hours; 20 to 50 minutes
C. About 50 minutes; 20 minutes

37: The name of a _____ drug is always spelled with a capital letter.

A. Brand-name B. Auscultation C. Intraoral D. None of these

38: The diagnostic term scurvy literally means _____ and is the lack of vitamin c in the diet.

A. To scratch B. To nourish C. Rough D. None of these

39: All of the following can be expected with polycythemia except _____.

A. Low blood viscosity B. High hematocrit C. High blood pressure

40: Athletes use the hormone epo to _____.

A. Strengthen their immune systems B. Stay hydrated
C. Increase their hematocrit D. Coagulation

Shri Shivaji Education Society Amravati's
Science College, Congress Nagar, Nagpur

DEPARTMENT OF ZOOLOGY

Academic session 2023-2024

Certificate course in

ADVANCED HEMATOLOGY: DIAGNOSIS AND MANAGEMENT
PRACTICAL EXAMINATION

Time: 1-2HRS.

Maximum Marks: 20

- | | |
|---|----|
| Q1. Write about any one Blood sampling techniques | 05 |
| Q2. Red blood cell count. | 05 |
| Q3. Estimation of hemoglobin | 05 |
| Q4. Case studies - | 05 |

Patient Profile:

- **Age:** 28 years old
- **Gender:** Female
- **Medical History:** No significant medical history; non-smoker; occasional alcohol consumption

Presenting Complaint: The patient presents with a 3-week history of increasing fatigue, shortness of breath on exertion, and noticeable paleness. She also reports a recent onset of frequent nosebleeds and bruising easily.

Physical Examination:

- **Vital Signs:** Blood pressure 110/70 mmHg, heart rate 92 bpm, respiratory rate 18 breaths/min, temperature 37.0°C

Laboratory Results:

- **Complete Blood Count (CBC):**
 - Hemoglobin: 8.2 g/dL (Normal: 12-16 g/dL)
 - White Blood Cells (WBC): $3.0 \times 10^9/L$ (Normal: $4-11 \times 10^9/L$)
 - Platelets: $50 \times 10^9/L$ (Normal: $150-400 \times 10^9/L$)
- **Peripheral Blood Smear:**
 - Hypochromic, microcytic red cells
 - Decreased platelets
 - No abnormal white cell precursors

Questions:

1. What is the most likely diagnosis based on the patient's presentation and laboratory results?
2. What additional tests would you order to confirm your diagnosis?
3. Outline a potential treatment plan for this patient.
4. Discuss the possible complications if this condition is left untreated.



Shri Shivaji Education Society Amravati's
Science College, Congress Nagar, Nagpur
Session: 2023-24
DEPARTMENT OF ZOOLOGY
Certificate course in Hematology session 1

Sr. No	Roll NO		Name of Students	Marks		Total Marks	Grades
				Theory	Practical		
1	101		ATAK VAIBHAV KISHOR	74	20	94	O
2	102	Ku	BAHIRA RANI BASANT	68	15	83	A+
3	103	Ku	BOKADE SANIKA MANOJ	70	17	87	A+
4	104	Ku	CHAVHAN RAKHI BHARAT	72	18	90	A+
5	105	Ku	DATE GAURI SUNIL	68	20	82	A+
6	106	Ku	DHEK AISHWARYA MADAN	64	19	83	A+
7	107	Ku	FADDAS SAJANI BAPURAV	64	15	79	A
8	108	Ku	GAIKWAD SNEHA SAMBHAJI	70	13	83	A+
9	109	Ku	GARJELWAR MANSI SURENDRA	76	12	88	A+
10	110	Ku	GAWANDE AYUSHRI ANIL	74	15	89	A+
11	111	Ku	GHUBADE LEYNESHA SANJAY	76	18	94	O
12	112		GONNADE TILAK SANTOSH	78	19	97	O
13	113		JAMPALWAR YASH RAKESH	76	20	96	O
14	114	Ku	KARWADE AWANI PRASHANT	68	20	88	A+
15	115	Ku	KEDAR SANIYA CHANDRASHEKHAR	62	15	77	A
16	116	Ku	MADARE ANOBHA NARENDRA	74	16	90	A+
17	117		MALIK NIKHIL JITENDRA	74	15	89	A+
18	118	Ku	MESHARAM TANVI SURYABHAN	70	15	85	A+
19	119		MOTGHARE ARYAN MAHENDRA	66	13	79	A+
20	120	Ku	RAGIT SAMPADA RAVICHANDRA	72	20	92	O
21	121	Ku	RAHANGDALE PRERNA RUPCHAND	66	15	81	A+
22	122	Ku	RAHATE KHUSHI BHUMIRAJ	76	13	89	A+
23	123	Ku	RAJPUROHIT KALYANI GIRISH	76	12	88	A+
24	124	Ku	RAUT HIMANSHI SUNIL	76	15	91	O

25	125	Ku	RAUT MOHINI VINOD	74	15	89	A+
26	126	Ku	SHARMA RASHI SANDEEP	66	15	81	A+
27	127	Ku	SHEIKH SHAHINA AKIL	70	20	90	A+
28	128	Ku	SHUKLA VAISHNAVI SANJAY	78	18	96	O
29	129	Ku	SIDAM ASHWINI YUVRAJ	56	19	75	B+
30	130		TITARMARE PRANAV CHANDRAKANT	78	20	98	O
31	131	Ku	UPLOPWAR MANASVI PRAKASH	76	19	95	O
32	132	Ku	VARADE NIKITA SANDEEP	80	20	100	O
33	133	Ku	ZADE YUTIKA SANJAY	74	18	92	O
34	134	Ku	AYYAGARI RENUKA SUDHAKAR	66	18	84	A+
35	135	Ku	BANTE SHRADDHA GUDDU	76	17	93	O
36	136	Ku	BEHAR KHUSHI RAJU	78	15	93	O
37	137	Ku	BHAISARE CHETANA DINESH	78	13	91	O
38	138	Ku	BHIMTE SHRIYA SURENDRAKUMAR	80	18	98	O
39	139	Ku	CHOUDHARY VAISHNAVI CHANDRAKANT	68	19	87	A+
40	140	Ku	GANVIR ANUSHKA ANIL	68	12	80	A
41	141	Ku	GOSWAMI DIVYA VIKAS	78	20	98	O
42	142	Ku	GOSWAMI LAXMI KISHOR	78	20	98	O
43	143	Ku	GUPTA SHREYA RAVINDRA	78	18	96	O
44	144	Ku	KALE MRUNALI CHANDRAJEET	78	19	97	O
45	145	Ku	KOLHE HARSHINI ARVIND	76	20	96	O
46	146	Ku	LONDE HARSHADA RAJESH	76	19	95	O
47	147	Ku	MOHOD SAMRUDDHI SATISH	80	18	98	O
48	148	Ku	MUDE DIVYA SUDHAKAR	66	17	82	A+
49	149	Ku	PARIHAR SHREYA SUSHILSINGH	78	16	94	O
50	150	Ku	PATHADE MRUDULA PRAVIN	68	16	84	A+
51	151	Ku	PHAD ANURADHA RAJABHAU	80	15	95	O
52	152	Ku	PUSADKAR ANNADA VIVEK	74	13	87	A+
53	153	Ku	RAMTEKE ROHANSHI SHESHRAJ	80	12	92	O
54	154	Ku	RATHOD SHALINI ANIL	80	19	99	O
55	155	Ku	RAUT RIYA TRILOKCHAND	80	19	99	O
56	156	Ku	SAHARE JANVI RAJU	78	18	96	O
57	157	Ku	SHRIRAME FALGUNI SANDIP	76	19	95	O
58	158	Ku	THAKARE KADAMBARI SANJAY	80	19	99	O

59	159		TIDKE VAIBHAV WAMAN	78	19	97	O
60	160	Ku	UPASE VAIDEHI MANOHAR	78	18	96	O
61	161	Ku	WARHEKAR TWINKLE GOKUL	76	15	91	O
62	162	Ku	BAIS MANSA KISHORSINGH	72	16	88	A+
63	163		CHAURAGADE PRANAY RAJESH	74	12	86	A+
64	164	Ku	DEVIKAR DIVYA ARUN	74	18	92	O
65	165	Ku	GAWANDE MAYURI CHANDRAKANT	76	19	95	O
66	166	Ku	GHADGE CHETNA ARVIND	76	20	96	O
67	167	Ku	GOKHALE RENUKA PARAG	78	13	91	O
68	168	Ku	JAMGADE KASHISH CHANDAN	76	15	91	O
69	169	Ku	KOCHE MAYURI WALMIK	70	16	86	A+
70	170	Ku	KURREWAR APARNA SHRIKANT	76	18	94	O
71	171	Ku	LIKHITKAR VAISHANAVI SHANKARRAO	78	19	97	O
72	172	Ku	LONARE NEHA CHANDAN	78	18	96	O
73	173	Ku	MAHANT MONALI PUNODAS	80	20	100	O
74	174	Ku	MESHRAM ANSHU GANESH	80	20	100	O
75	175	Ku	MESHRAM ANUSHREE RAVI	76	17	93	O
76	176	Ku	PANEKAR TANNUSHREE SHIRISH	74	18	92	O
77	177	Ku	PATEL JHUHI CHAMAN	74	16	90	O
78	178	Ku	SOMKUWAR RADHA RAJESH	70	13	83	A+
79	179	Ku	SUBHEDAR PRAPTI ANANT	80	20	100	O
80	180	Ku	TALMALE YUKTI KULDEEP	78	12	90	O
81	181	Ku	THAKKAR VAIBHAV VILESH	80	15	85	A+

Co-coordinator

Name: Rupali



Head of the Zoology Department

Dr. A. D. Bobdey
Professor & Head
Department of Zoology,
Shri Shivaji Science College,
Congress Nagar, Nagpur-12.

Cordinator: Dr. R.A. Patil Bhogel Certificate course in Advanced Haematology

Sr. No	Name of Students	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	Total
1		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P				
2	ATAK VAIBHAV KISHOR	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P				
3	BAHIRA RANI BASANT	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P				
4	BOKADE SANIKA MANOJ	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P				
5	CHAVHAN RAKHI BHARAT	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P				
6	DATE GAURI SUNIL	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P				
7	DHEK AISHWARYA MADAN	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P				
8	FADDAS SAJANI BAPURAV	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P				
9	GAIKWAD SNEHA SAMBAHAI	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P				
10	GARJELWAR MANSI SURENDRA	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P				
11	GAWANDE AYUSHRI ANIL	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P				
12	GHUBADE LEYNESHA SANJAY	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P				
13	GONNADE TILAK SANTOSH	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P				
14	JAMPALWAR YASH RAKESH	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P				
15	KARWADE AWANI PRASHANT	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P				
16	KEDAR SANIYA CHANDRASHEKHAR	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P				
17	MADARE ANOBHA NARENDRA	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P				
18	MALIK NIKHIL JITENDRA	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P				
19	MESHAM TANVI SURYABHAN	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P				
20	MOTGHARE ARYAN MAHENDRA	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P				
21	RAGIT SAMPADA RAVICHANDRA	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P				
22	RAHANGDALE PRERNA RUPCHAND	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P				
23	RAHATE KHUSHI BHUMIRAJ	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P				
24	RAJPUROHIT KALYANI GIRISH	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P				
25	RAUT HIMANSHI SUNIL	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P				
26	RAUT MOHINI VINOD	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P				

Head of the Zoology Department

Cordinator: Rupali

Dr. A. D. Gokhale
Professor & Head
Department of Zoology,
Shri Shivaji Education Society's College,
Coramati, Nagpur - 441104

Sr. No	Name of Students	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	Total
26	Ku SHARMA RASHI SANDEEP	P	P	P	P	P	P	.	P	P	P	P	P	P	P	P	P	.	P	P	P	P	P	.	P	P	P	P	P	P	P	
27	Ku SHEIKH SHAHINA AKIL	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
28	Ku SHUKLA VAISHNAVI SANJAY	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
31	Ku SIDAM ASHWINI YUVRAJ	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
32	TITARMARE PRANAV CHANDRAKANT	.	.	.	.	.	.	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
33	Ku ULOPWAR MANASVI PRAKASH	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
34	Ku VARADE NIKITA SANDEEP	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
35	Ku ZADE YUTIKA SANJAY	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
36	Ku AYYAGARI RENUKA SUDHAKAR	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
37	Ku BANTE SHRADDHA GUDDU	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
38	Ku BEHAR KHUSHI RAJU	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
39	Ku BHAIASARE CHETANA DINESH	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
40	Ku BHIMTE SHRIYA SURENDRAKUMAR	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
41	Ku CHOUDHARY VAISHNAVI CHANDRAKANT	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
42	Ku GANVIR ANUSHKA ANIL	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
43	Ku GOSWAMI DIVYA VIKAS	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
44	Ku GOSWAMI LAXMI KISHOR	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
45	Ku GUPTA SHREYA RAVINDRA	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
46	Ku KALE MRUNALI CHANDRAJEET	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
47	Ku KOLHE HARSHINI ARVIND	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
48	Ku LONDE HARSHADA RAJESH	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
49	Ku MOHOD SAMRUDDHI SATISH	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
50	Ku MUDE DIVYA SUDHAKAR	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	

Head of the Zoology Department
Dr. N. D. Godey
Professor & Head
Department of Zoology,
Shri Chhatrapati Shahu College,
Congress Nagar, Rajawade

Coordinator: Rupali

Sr. No	Name of Students	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	Total
51	Ku PHAD ANURADHA RAJABHAU	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
52	Ku PUSADKAR ANNADA VIVEK	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
53	Ku RAMTEKE ROHANSHI	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
54	Ku SHESHRAJ	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
55	Ku RATHOD SHALINI ANIL	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
56	Ku RAUT RIYA TRILOKCHAND	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
57	Ku SAHARE JANVI RAJU	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
58	Ku SHRIRAME FALGUNI SANDIP	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
59	Ku THAKARE KADAMBARI SANJAY	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
60	Ku TIDKE VAIBHAV WAMAN	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
61	Ku UPASE VAIDEHI MANOHAR	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
62	Ku WARHEKAR TWINKLE GOKUL	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
63	Ku BAIS MANSA KISHORSINGH	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
64	Ku CHAURAGADE PRANAY	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
65	Ku RAJESH	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
66	Ku DEVIKAR DIVYA ARUN	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
67	Ku GAWANDE MAYURI	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
68	Ku CHANDRAKANT	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
69	Ku GHADGE CHETNA ARVIND	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
70	Ku GOKHALE RENUKA PARAG	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
71	Ku JAMGADE KASHISH CHANDAN	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
72	Ku KOCHER MAYURI WALMIK	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
73	Ku KURREWAR APARNA	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
74	Ku SHRIKANT	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
75	Ku LIKHITKAR VAISHANAVI	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
76	Ku SHANKARRAO	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	

Coordinator: Rupali

Head of the Zoology Department

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Shivaji Education Society Amravati's
Science College Congress Nagar, Nagpur
Department of Zoology
Session: 2023-24

Report On Certificate Course In “Advanced Hematology: Diagnosis and Management”

Department Of Zoology, Shri Shivaji Science College, Nagpur conducted certificate course on Advanced Hematology: Diagnosis and Management. Hematology is a fascinating and vital field of medicine that focuses on the study of blood, blood-forming organs, and blood diseases. It is the branch of medicine concerned with the study of the cause, prognosis, treatment, and prevention of diseases related to blood. It covers a wide range of disorders including but not limited to **hemophilia, leukemia, lymphoma, and sickle-cell anemia**. Hematology is usually a part of the curriculum where students learn the basics of blood diseases and their treatments. The field of hematology offers a wide range of career opportunities. The **Certificate Course in Hematology** was designed to provide students with a solid foundation in hematology, equipping them with essential knowledge and practical skills. This course aimed to enhance their understanding of blood disorders, laboratory techniques, and diagnostic methods.

Certificate course on Advanced Hematology: Diagnosis and Management was undertaken by the students of B.Sc. I, II and III of CZM group, as a part of additional academic curriculum under the guidance of Dr. R. A. Patil Bhagat with view to provide complete knowledge on hematology. 81 students participated in the ten week (30 hours) certificate course in Advanced Hematology : Diagnosis And Management. The **Certificate Course in Hematology** empowered students to excel in clinical practice, research, and diagnostics.

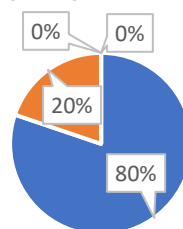
ACTION TAKEN: this course equips participants with the knowledge and skills necessary for excellence in the field of hematology. By completing this certificate program, individuals can make meaningful contributions to patient health and well-being.

Dr. R. A. Patil Bhagat
Coordinator
Advanced Haematology: It's Diagnosis and Management.
Department of Zoology

Feedback analysis

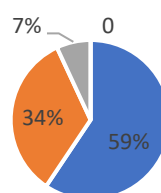
How would you rate the overall quality of the course content?

- very likely
- likely
- unlikely
- very unlikely



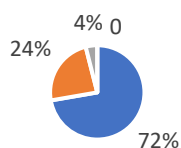
How well did the course meet your expectations in terms of knowledge gained?

- excellent
- good
- fair
- poor

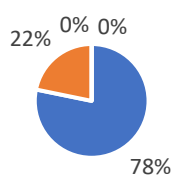


How effective were the practical sessions in enhancing your understanding of hematology?

- very relevant
- relevant
- somewhat relevant
- not relevant



How likely are you to recommend this course to your colleagues or peers?



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CERTIFICATE

Mr./Ku. Rishi Sharma. is awarded with certificate on successful completion of the course entitled, Certificate course in "Advanced Haematology: Diagnosis and Management".

Session 2023-24 under Add-on course conducted for 30 hours from 01/08/2023 to 07/10/2023 by Department of Zoology, SSES's, Science College, congress Nagar, Nagpur 440012.

He/She has passed the Examination with '___' Grade.

Rupali

Dr. Mrs. R. A. Patil Bhagat
Coordinator, Department of Zoology

M. P. Dhore

Prof. M. P. Dhore
Principal, Science College, Nagpur