ATUL VIDYA MANDIR WARDHA'S

RAJARSHEE SHAHU SCIENCE COLLEGE
CHANDUR RLY

Dist – Amravati, Maharashtra
Affiliated to Sant Gadge Baba Amravati University, Amravati

2nd Cycle

Assesment & Accrediation by NAAC

CRITERIA I- CURRICULUM ASPECT

Curriculum Enrichment

QnM – 1.3.2

Percentage of students undertaking project work/field work/ internships

Atul Vidya Mandir, Wardha's

Rajarshee Shahu Science College

Virul Road, Chandur Rly, Dist. Amravati PIN - 444 904

(College Code : 807)

(Accredited with B+ Grade by NAAC)

PRESIDENT
Prof. Mrs. Uttaratai V. Jagtap

SECRETARY
Prof. Virendrabhau W. Jagtap

PRINCIPAL
Dr. Suresh S. Thakare

Website : www.rssc.edu.in | Email : rajarsheeshahucollege@rediffmail.com | rsscprincipal@gmail.com | ☎ (Office) 07222-254111

Ref. No. .....

Date: .....

Declaration

The information, reports, true copies of the documents, numerical data, etc furnished in this file is verified by IQAC and found correct.

Dr. Minal Keche
IQAC Coordinator
Rajarshee Shahu Science College
Chandur Railway, Amravati

IQAC Co-ordinator
Rajarshee Shahu Science College
Chandur Rly., Dist. Amravati

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Dr. Mahesh Chikhale
Chairman IQAC and Principal
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Principal
Rajarshee Shahu Science College
Chandur Rly. Distt. Amravati

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B.sc Direction 2010

SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI
DIRECTION

No. : 16/2010 Date : 11/06/2010

Subject : Examinations leading to the Degree of विज्ञान स्नातक (Bachelor of Science) (Three Year Degree Course-Semester Pattern), Direciton, 2010.

Whereas, University Grants Commission, New Delhi vide D.O.No.F-2/2008/(XI Plan), Dtd.31 Jan.2008 regarding new initiatives under the 11th Plan – Academic Reforms in the University has suggested for improving quality of higher education and to initiate the Academic Reform at the earliest.

AND

Whereas, the Academic Council while considering the above letter in its meeting held on 30.4.2008, vide item No.55 has resolved to refer the same to Dean's Committee, and the Dean's Committee in its meeting held on 19.07.2008 has decided to refer the matter to all Board of Studies.

AND

Whereas the recommendations of various Board of Studies in the faculty of Science regarding Upgradation and Revision of various syllabi and introduction and implementation of Semester Pattern Examination System at under graduate level was considered by the faculty of Science in its meeting held on 7.12.2009 and constituted a Committee of all Chairmen of Board of Studies and one member nominated by Chairmen of respective B.O.S. under the Chairmanship of Dean of faculty to decide the policy decision regarding semester pattern examination system.

AND

Whereas, the faculty of Science in its emergent meeting held on 11th May, 2010 vide item No.26, has considered, accepted and recommended to Academic Council, the policy decision regarding introduction of Semester pattern and the draft syllabi of B.Sc. Part-I (Semester-I & II) along with draft ordinance and other details. The recommendations of the faculty was approved by the Academic Council in its emergent meeting held on 28.5.2010, vide item No.35 D).

AND

Whereas, Ordinance No.143 in respect of Examinations leading to the Degree of विज्ञान स्नातक (Bachelor of Science) is in existence in the University as per annual pattern examination system.

AND

Whereas, new scheme of examination as per semester pattern is to be implemented from the Academic Session 2010-11 for Semester-I & onwards which is regulated by an Ordinance and framing of an Ordinance for the above examination is likely to take some time.

AND

Whereas, the admission of students in the semester pattern at B.Sc. Part-I (Semester-I) are to be made in the Academic Session 2010-11.

Now, therefore, I, Dr. Kamal Singh, Vice Chancellor of Sant Gadge Baba Amravati University, in exercise of powers conferred upon me under sub-section (8) of section 14 of the Maharashtra Universities Act., 1994, do hereby direct as under:

1. This Direction may be called, "Examinations leading to the Degree of विज्ञान स्नातक (Bachelor of Science) (Three Year Degree Course-Semester Pattern), Direciton, 2010".
2. This direction shall come into force with effect from the date of its issuance.
3. (i) The following shall be the examination leading to the Degree of विज्ञान स्नातक (Bachelor of Science) in the faculty of Science-
   (1) The विज्ञान स्नातक भाग १, सत्र १ व २ (B.Sc. Part-I, Sem-I & II) Examination;
   (2) The विज्ञान स्नातक भाग २, सत्र ३ (B.Sc. Part-II, Semester-III) Examination;
   (3) The विज्ञान स्नातक भाग २, सत्र ४ (B.Sc. Part-II, Semester-IV) Examination;
   (4) The विज्ञान स्नातक अन्त्य, सत्र ५ (B.Sc. Final, Semester-V) Examination; and

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(5) The विज्ञान स्नातक अन्त्य, सत्र ६
(B.Sc. Final, Semester-VI) Examination.

(ii) The period of Academic Session shall be such as may be notified by the University.

4. (i) The theory examination of Semester-I & II shall be simulta neously conducted by the University at the end of Semes winter-II in Summer.

(ii) The examination of Semester-III, IV, V & VI shall be conducted by the University and shall held by the end of each semester separately.

(iii) The main examination of Semester-III & V and that of Semester-IV & VI shall be held in Winter and Summer respectively.

(iv) The supplementary examination for Semester-I & II shall be held in Winter and that of Semester-III & V and Semester-IV & VI in Summer and Winter respectively.

That means the theory examination of all the Semesters shall be conducted by the University and shall be held as per the schedule.

Sr.No.	Name of the Examination	Main Examination	Supplementary Examination
1	Semester-I & Semester-II	Summer (Simulteneously)	Winter (Simulteneously)
2	Semester-III & Semester-V	Winter	Summer
3	Semester-IV & Semester-VI	Summer	Winter

5. Subject to their compliance with the provisions of this Direction and of other Ordinances in force from time to time, the following persons shall be eligible for admission to the examinations, namely:-

(a) A student of a College who has prosecuted a regular course of study for not less than one academic year prior to that examiantion;

(b) A teacher in a Educational Institution eligible under the provisions of Ordinance No.18, and

6

(c) A women candidate who has not pursued a regular course of study.

Provided that in the case of the persons eligible under clauses (b) and (c) an applicant to the examination shall have attended a full course of laboratory instructions in a College in the subject in which laboratory work is prescribed. The candidate shall submit a Certificate to that effect signed by the Principal of the college.

6. **(I) The Students passing H.S.C. Examiantion with Physics, Chemistry and Mathematics shall offer following subjects at B.Sc. Part-I Examination.**

(i) English and any one of the following languages Marathi, Hindi, Urdu, Sanskrit, and Supplementary English.

(ii) Three optional subjects atleast one subject from the following groups be selected.

Group A :- Chemistry, Industrial Chemistry, Petro-Chemical Science, Electronics, Mathematics.

Group B :- Physics, Geology, Statistics, Computer Science, Computer Application, Information Technology and Geography.

The Students passing H.S.C. Examination with Chemistry and Biology shall offer following subjects:-

(i) English and any one of the following languages. Marathi, Hindi, Urdu, Sanskrit and Supplementary English.

(ii) Chemistry.

(iii) Two optional subejcts form the following group be selected.

Group C : Botany, Zoology, Bio-Chemistry, Geography, Fisheries, Environmental Sci ence, Microbiology, Geology, Food Sci ence, Industrial Microbiology, Biotechnology and Appiculture.

For Vocational subjects sanctioned by U.G.C. there shall be following scheme of Combination of subjects:-

of examination leading to the degree of Bachelor of Science (additional) in that subject, subject to the following condition.

An examinee shall have attended full course of laboratory instructions in a College in the subject in which laboratory work is prescribed. An examinee shall submit a certificate to that effect signed by the Principal of the College.

(B) On securing not less than minimum marks prescribed for the subject / subjects shall be issued a certificate of having passed the examination in the additional subject/subjects as the case may be.

(C) The application for admission to the examination under (A) above shall be submitted to the Registrar not less than three months before the date of commencement of the examination."

22. As soon as possible after the examinations the Board of Examination shall publish a list of successful examinees at the B.Sc Part-I, Sem-I & II; B.Sc. Part-II, Sem-III & IV and B.Sc. Final Sem-V & VI Examinations. Such list at the विज्ञान स्नातक अन्त्य (B.Sc. Final) Examination shall be arranged in three Divisions. The names of the examinees passing the examination as a whole in the minimum prescribed period and obtaining the prescribed number of places in First or Second Division shall be arranged in Order of Merit as provided in the Examinations in General Ordinance No. 6.

23. No Person shall be admitted to B.Sc Part-I, Sem-I & II; B.Sc. Part-II, Sem-III & IV and B.Sc. Final Sem-V & VI Examinations, if he has already passed the corresponding or an equivalent examination of any other Statutory University.

24. Successful Examinees at the विज्ञान स्नातक भाग १, सत्र १ व २ (B.Sc. Part-I, Sem-I & II) and the विज्ञान स्नातक भाग २, सत्र ३ व ४ (B.Sc. Part-II, Sem-III & IV) Examination shall be entitled to receive a Certificate signed by the Registrar and successful examinee at the end of विज्ञान स्नातक अन्त्य सत्र ६ (B.Sc. Final, Sem-VI) Examination, shall on payment of the prescribed fees, receive a Degree in the Prescribed form, signed by the Vice-Chancellor.

Appendix-A

Examination Scheme

विज्ञान स्नातक भाग-१

(B.Sc. Part-I) (Semester-I)

Sr. No.	Subject	Examination Scheme						Total
		Theory				Practical		
		Max. Mar. Theory Papers	Max. Marks Int. Ass.	Total	Min. pass Marks	Max. Marks Practical	Min. Pass Mar.	Theory, Pract. & Int.Ass.
1	Compulsory English	40	10	50	18	—	—	50
2	Languages	40	10	50	18	—	—	50
3	Mathematics (Paper-I)	60	15	150	54	—	—	150
4	Mathematics (Paper -II)	60	15				—	
5	Science subjects excluding Mathematics	80	20	100	35	50	18	150

Grand Total of Semester-I : 450+100

Appendix-B

विज्ञान स्नातक भाग-१

(B.Sc. Part-I) (Semester-II)

Sr. No.	Subject	Examination Scheme						Total
		Theory				Practical		
		Max. Mar. Theory Papers	Max. Marks Int. Ass.	Total	Min. pass Marks	Max. Marks Practical	Min. Pass Mar.	Theory, Pract. & Int.Ass.
1	Compulsory English	40	10	50	18	—	—	50
2	Languages	40	10	50	18	—	—	50
3	Mathematics (Paper-III)	60	15	150	54	—	—	150
4	Mathematics (Paper -IV)	60	15				—	
5	Science subjects excluding Mathematics	80	20	100	35	50	18	150

Grand Total of Semester-I : 450+100

15

Appendix-C

विज्ञान स्नातक भाग-२, सत्र ३

(B.Sc. Part-II) (Semester-III)

Sr. No.	Subject	Examination Scheme						Total
		Theory				Practical		
		Max. Mar. Theory Papers	Max. Marks Int. Ass.	Total	Min. Pass Marks	Max. Marks Practical	Min. Pass Mar.	Theory, Pract. & Int.Ass.
1	Mathematics (Paper-V)	60	15	150	60	–	–	150
4	Mathematics (Paper-VI)	60	15				–	
5	Science subjects excluding Mathematics	80	20	100	40	50	20	150

Grand Total of Semester-III : 450

Appendix-D

विज्ञान स्नातक भाग-२, सत्र ४

(B.Sc. Part-II) (Semester-IV)

Sr. No.	Subject	Examination Scheme						Total
		Theory				Practical		
		Max. Mar. Theory Papers	Max. Marks Int. Ass.	Total	Min. Pass Marks	Max. Marks Practical	Min. Pass Mar.	Theory, Pract. & Int.Ass.
1	Mathematics (Paper-VII)	60	15	150	60	–	–	150
4	Mathematics (Paper-VIII)	60	15				–	
5	Science subjects excluding Mathematics	80	20	100	40	50	20	150

Grand Total of Semester-IV : 450

16

Appendix-E

विज्ञान स्नातक अंत्य सत्र ५

(B.Sc. Final) (Semester-V)

Sr. No.	Subject	Examination Scheme						Total
		Theory				Practical		
		Max. Mar. Theory Papers	Max. Marks Int. Ass.	Total	Min. Pass Marks	Max. Marks Practical	Min. Pass Mar.	Theory, Pract. & Int.Ass.
1	Mathematics (Paper-IX)	60	15	150	60	–	–	150
4	Mathematics (Paper-X)	60	15				–	
5	Science subjects excluding Mathematics	80	20	100	40	50	20	150

Grand Total of Semester-V : 450

Appendix-F

विज्ञान स्नातक अंत्य सत्र ६

(B.Sc. Final) (Semester-VI)

Sr. No.	Subject	Examination Scheme						Total
		Theory				Practical		
		Max. Mar. Theory Papers	Max. Marks Int. Ass.	Total	Min. Pass Marks	Max. Marks Practical	Min. Pass Mar.	Theory, Pract. & Int.Ass.
1	Mathematics (Paper-VII)	60	15	150	60	–	–	150
4	Mathematics (Paper-VIII)	60	15				–	
5	Science subjects excluding Mathematics	80	20	100	40	50	20	150

Grand Total of Semester-VI : 450

17

Note : 1 There shall be only one theory paper of each science subject other than Mathematics for every semester.

2. Distribution of marks of practical within the limit of Max. Marks shall be as prescribed by the B.O.S. of the concerned subject.

3. In absence of certificate for practical record book (Appendix-H), examinee shall not be allowed to appear for the practical examination.

Appendix-G

The internal assessment marks assigned to each theory paper as mentioned in **Appendix-A to F** shall be awarded on the basis of assignment, class test, attendance, project assignments, Seminar, Study tour, Industrial visit, Visit to educational institutions and research organization, field work, group discussion or any other innovative practice/ activity. The marking scheme for each of the practice/activity shall be as under :-

Sr. No.	Semester	Practice /Activity	Details of marking scheme	Total marks for Languages	Mathematics	Other Science Subjects
1	2	3	4	5	6	7
1	Semester -I & II	Assignment	Two assignments per theory paper	04	05	08
2	Semester- I & II	Class Test	Two class test (on passing test)	06	10	12
	Total marks for Sem-I /II			**10**	**15**	**20**
3	Sem-III, IV, V & VI	Project Assignment	On latest developments in the subject in 100-200 words	—	03	04
4	Sem-III, IV, V & VI	Class Test	Two class test (on passing test)	—	08	10

18

1	2	3	4	5	6	7
5	Sem-III, IV, V & VI	Seminar, Study tour, Industrial visit, Visit to educational institutions, research organization, field work, group discussion or any other innovative practice/ activity.	Any one of the activity with report of the activity.	—	04	06
	Total marks of Sem-III/ IV/V/ VI			—	**15**	**20**

Note : 1. The concerned teacher shall have to keep the record of all the above activities till the passing out of that batch.

2. At the beginning of each semester, every teacher shall inform his/her students unambiguously the method he/ she proposes to adopt a scheme of marking for the internal assessment.

3. Teacher shall announce the schedule of activity for Interna. Assessment in advance in consultation with HOD/ Principal.

4. Normally the teacher concerned may conduct three written tests spread periodically during the semester and award the marks on the test on passing of any two tests.

5. The internal marks shall be displayed on the notice board before three weeks of the commencement of the theory examination. Grievances if any, of the student regarding Internal Assessment marks shall be settled by the Principal at college level in consultation with the concerned teacher.

6. Final submission of internal marks to the University shall be before commencement of the theory examinations.

Appendix-H

CERTIFICATE

Name of College / Institution : .....

.....

Name of the Department :- .....

.....

This is to certify that this Book contains the bonafide record of the practical work of Shri/Kumari/Shrimati

.....

.....

of B.Sc.Part-..... (Semester-.....) during the Academic year .....

Dated :...../...../20.....

Signature of the Teacher
who taught the examinee

1. .....

2. .....

Head of the Department

(**Note :** In absence of certificate for practical record book (Appendix-H), examinee shall not be allowed to appear for the practical examination.)

Sd/-
(Dr.Kamal Singh)
Vice-Chancellor

Amravati
Date : 11/6/2010

*****

Sant Gadge Baba Amravati University, Amravati

DIRECTION

No. : 37 / 2011 Date : 26.7.2011

Subject : Corrigendum to Direction No.16/2010 in respect of Examinations leading to the Degree of (Bachelor of Science) (Three Year Degree Course – Semester Pattern)

Whereas, the Direction No. 16 of 2010 regarding Examinations leading to the Degree of (Bachelor of Science) (Three Year Degree Course – Semester Pattern), Direction-2010 is in existence.

AND

Whereas, the existing provision regarding theory examination of Semester-I & II shall be simultaneously conducted by the University at the end of Semester-II in Summer as well as the practical examinations shall be conducted annually for each semester.

AND

Whereas, the Committee constituted by the faculty of Science, under the Chairmanship of Dean of the faculty in its meeting held on 28.6.2011 and 14.7.2011 has considered the issues regarding conduction of theory and practical examination of B.Sc. Semester-I to VI at the end of each semester, from the Academic Session 2011-12.

AND

Whereas, making amendments in the Ordinance for above examination is a time consuming process.

AND

Whereas, it is necessary to carryout the corrections to Direction No.16 of 2010 issued earlier as stated in para No.1 above, urgently.

Now, therefore, I, Dr.Mohan K.Khedkar, Vice Chancellor of Sant Gadge Baba Amravati University, in exercise of powers conferred upon me under sub-section (8) of section 14 of the Maharashtra Universities Act., 1994, do hereby direct as under:

1. This Direction may be called "Corrigendum to Direction No.16/2010 in respect of Examinations leading to the Degree of (Bachelor of Science) (Three Year Degree Course – Semester Pattern)".

2. This direction shall come into force from the date of its issuance.
3. From the Academic Session 2011-12, theory and practical examinations of each Semester shall be conducted separately at the end of each semester.

Sd/-
Amravati (Dr.Mohan K.Khedkar)
Date : 26/7/2011 Vice-Chancellor

*****

DIRECTION

No. : 1 / 2012 Date : 23.1.2012

Subject : Corrigendum to Direction No.16/2010 in respect of Examinations leading to the Degree of (Bachelor of Science) (Three Year Degree Course – Semester Pattern)

Whereas, the Direction No.16 of 2010 in respect of Examinations leading to the Degree of (Bachelor of Science) (Three Year Degree Course – Semester Pattern) in the faculty of Science is in existence.

AND

Whereas, corrigendum to Direction No.16 of 2010 in respect of Examinations leading to the Degree of (Bachelor of Science) (Three Year Degree Course – Semester Pattern) was issued vide Direction No.37/2011 on dated 26.7.2011.

AND

Whereas, the Academic Council in its meeting held on 13.1.2012 vide item Nos.14 (5) (E) and 14 (5) (O) respectively has accepted to allow the students passing H.S.S.C. examination (M.C.V.C. stream) with Medical Laboratory Technician Trade for admission to B.Sc. Part-I under the group-"Chemistry, Environmental Science, Industrial Microbiology", and the recommendations of the Monitoring Committee under the Chairmanship of Dean, faculty of Science of its meeting dated 15.11.2011 regarding correction in marking scheme of Internal Assessment Marks at B.Sc. level.

AND

Whereas, as per decision of Academic Council, the above correction are to be carried out in Column No.3 against Sr.No. 1 under the table of sub-clause (II) of Para 6 and in Appendix-G of Direction No.16 of 2010 issued earlier for the Examinations leading to the Degree of (Bachelor of Science) (Three Year Degree Course – Semester Pattern) in the faculty of Science for Summer-2012 examinations and onwards.

AND

Whereas, it is necessary to carry out the corrections in the above said Direction immediately.

Now, therefore, I, Dr.Mohan K.Khedkar, Vice Chancellor of Sant Gadge Baba Amravati University, in exercise of powers conferred upon me under sub-section (8) of section 14 of the Maharashtra Universities Act., 1994, do hereby direct as under:

1. This Direction may be called "Corrigendum to Direction No.16/2010 in respect of Examinations leading to the Degree of (Bachelor of Science) (Three Year Degree Course – Semester Pattern) in the faculty of Science".
2. This direction shall come into force from the date of its issuance.
3. In Direction No.16/2010 in respect of Examinations leading to the Degree of (Bachelor of Science) (Three Year Degree Course – Semester Pattern) in the faculty of Science-

   A) the words "Industrial Microbiology" after the word "Bioinformatics" in column No.3 against Sr.No.1 under the table of Sub-clause (II) of para 6 of Direction No.16 of 2010 shall be added.

   B) in Appendix-G following corrections be carried out :
      1. In column No.4, at Sr.No.1, the words "Two assignments" be replaced by the words "One assignment".
      2. In column No.4, at Sr.No.2, the words & signs "Two Class Tests (On passing test)" be replaced by the words "One test".
      3. In column No.4, at Sr.No.4, the words & signs "Two Class Tests (On passing test)" be replaced by the words "One test".
      4. In column No.4, at Sr.No.5, the words "Any one of the activity" be replaced by the words "Any one of the activities".

UG Syllabus
Dept. of Botany

B.Sc. Part-I (Sem-I & II) Prospectus No. 2017121
Exam. 2016-17

संत गाडगे बाबा अमरावती विद्यापीठ

SANT GADGE BABA AMRAVATI UNIVERSITY

विज्ञान विद्याशाखा
(FACULTY OF SCIENCE)

अभ्यासक्रमिका
विज्ञान स्नातक भाग-१
सत्र-१, परीक्षा हिवाळी-२०१६
सत्र-२, परीक्षा उन्हाळी-२०१७

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13. BOTANY

There shall be following paper and practical for B. Sc. Part – I Semester one examination. The syllabus is based on six theory periods and six practical periods per week (Total 75 – 80 theory sessions and 25 practical sessions per complete semester). There shall be one compulsory paper of 3 hours duration, in theory as stated below and practical examination extending for 4 hours. Every examinee shall offer the following paper of 100 marks (out of which 80 marks will be for written examination and 20 marks for internal assessment) and practical examination of 50 marks. Candidates are required to pass separately in theory and practical examination.

1.	Paper – 1		Marks
	a. Theory	-	80
	b. Internal Assessment	-	20
2.	Practical	-	50
		Total	**150 Marks**

1S – BOTANY

Diversity & Applications of Microbes and Cryptogams

UNIT-I : Plant Diversity **(15)**

1.1 Cyanobacteria and its impact on origin of life
1.2 Introduction to Plant Kingdom: Cryptogams
1.3 Diversity of plants with respect to habitat, form, nutrition and ecological status
1.4 General Account of Viruses and structure of TMV and HIV
1.5 Bacteria: structure, Nutrition and reproduction
1.6 Role of microbes in Agriculture, Medicine and Industries

UNIT-II: Algae **(15)**

2.1. Classification according to F. E. Fritsch and G. M. Smith up to classes
2.2. General characters of algae with reference to Habitat, Thallus organization, Pigmentation, Reserve food and Reproduction
2.3. General characters of following classes with special reference to examples mentioned –
  2.3.1. Chlorophyta - Oedogonium
  2.3.2. Charophyta – Chara (Thallus structure and reproduction)
  2.3.3. Phaeophyta – Sargassum (Thallus structure and reproduction)
  2.3.4. Rhodophyta – Batrachospermum

UNIT-III : Fungi **(15)**

3.1. Classification according to Ainsworth (1973)

3.2. General characteristics of following classes with special reference to examples mentioned –

3.2.1. Mastigomycotina : Albugo (Cystopus)

3.2.2. Ascomycotina : Aspergillus

3.2.3. Basidiomycotina : Puccinia graminis-tritici

3.2.4. Deuteromycotina : General characters

3.3 Lichen-Types & Economic importance

Unit-IV : Bryophyte **(15)**

4.1. Classification according to G. M. Smith

4.2. General characters, thallus organization and life cycle of–

1.2.1. Hepaticopsida – Marchantia

1.2.2. Bryopsida – Funaria

4.3. Evolution of sporophyte in bryophytes

4.4. Affinities of bryophytes with algae and pteridophytes

4.5. Brief Account on some Indian Bryologist.

Unit-V : Pteridophyte **(15)**

5.1. Pteridophytes as First Vascular Plants.

5.2. Classification according to G. M. Smith

5.3. General characters of the following classes with special reference to examples mentioned –

5.3.1. Sphenopsida – Equisetum

5.3.2. Filicopsida – Marsilea

5.4. Stele types in pteridophytes

5.5 Heterospory and Seed Habit in Pteridophytes

Unit-VI : Application of Microbes Cryptogams **(15)**

6.1. Economic Importance of Algae with special reference to Food, Industries, Agriculture and Harmful aspects

6.2. Mycorrhiza – Types and Application

6.3. Role of Fungi in Industries, Medicine, Food & Agriculture

6.4. Plant Diseases –

6.4.1. Viral – TMV

6.4.2. Bacteria – Black arm of cotton (Xanthomonos malvacearum)

6.4.3. Fungal – Tikka disease of groundnut (Cercospora sps.)

6.5. Economical and Ecological Importance of Bryophytes

LABORATORY EXERCISE :

I ALGAE

Preparation of temporary mount, identification with reason of following algal materials-
edogonium, Hydrodictyon, Chara, Vaucheria, Ectocarpus, Sargassum, Batrachospermum

II. FUNGI AND PLANT PATHOLOGY

(1) Study of following genera
Albugo, Uncinula, Penicillium, Agaricus, Puccinia, Cercospora

(2) Study of Crustose, Fruticose & Foliose Lichen

(3) Study of symptoms of fungal, viral, bacterial and Mycoplasmal diseases

(4) Collection of fungal specimen & infected plant part from local region

(6) Demonstration of Mushroom Cultivation Technology

III. BRYOPHYTES

Study of external and anatomy features of vegetative and reproductive parts of following genera – Marchantia, Anthoceros, Funaria, Polytrichum and Sphagnum

IV. PTERIDOPHYTES

Study of Pteridophyte external and anatomy features of vegetative and reproductive parts of following genera –Lycopodium, Equisetum, Osmunda, Selaginella, Adiantum, Marsilea and any one fossil specimen

Note: 1. Omit the details of development of sex organs and sporophyte.
2. Botanical excursion (Two local and one outside the state is compulsory)
3. Common algal, fugal, pathological, bryophytic and pteridophytic collection and excursion report must be submitted at the time of practical examination.

BOOKS RECOMMENDED

1. Dube, H. C. (1990). An Introduction to Fungi. Vikas Pub. House Ltd. New Delhi.
2. Gangulee, H. C. and Kar, A.K. (2001). College Botany Vol. II. Books and Allied Press Ltd. Kolkata.
3. Krushnamurthy, K. V. (2007). An advanced Text Book on Biodiversity: Principles and Practice. Oxford and IBH Publishing Kumar, H.D. (1988). Introductory Phycology. Affiliated East-West Pres Ltd. New Delhi.
4. Kumar, H. D. and Singh, H.N. (1976). A Text Book of Algae. Affili-

Field Work.

1.	Geological Harmmer 1000 gm.	10 Nos.
2.	Harver Sack	20 Nos.
3.	Field camera (Plntax) with zoomlens and flash guns	1 Nos.
4.	Water bottle	2 Nos.
5.	Steel tapes 5 Mtr., 10 & 50 Metrs.	2 Each.
6.	Clinometer campass	15 Nos.
7.	Bruten campass	5 Nos.

In addition of these following additional equipments if kept will help to improve teaching and practical demonstration techniques related to course.

1.	Overhead Projector	1 Nos.
2.	Epidio Scope	1 Nos.
3.	Any geophysical instrument Resistivity/Seismic	1 Nos.
4.	Water analysis kit	1 Nos.

(Note: 1) Necessary arrangement should be made available to display these moels so that students can observe them as and when they like, Adequate no of trays, showcases should be made available.

2) As far as possible Geological Musium should be separate.)

13. BOTANY

2S – BOTANY

Gymnosperm, Morphology of Angiosperms and Utilization of Plants

UNIT-I : Palaeobotany (15)

1.1. Process of plant fossilization and types of fossils

1.2. Geological Time Scale

1.3. Fossil Gymnosperms

1.3.1. Pteridospermales: Lyginopteris oldhamia

1.3.2. Bennettitales: Bennittites

UNIT-II : Gymnosperms (15)

2.1. Classification according to D. D. Pant

2.2. General account: morphology, anatomy, life cycle and taxonomic position of Pinus and Gnetum

2.3. Affinities with pteridophytes and angiosperms

2.4. Economic importance of Gymnosperms

UNIT-III : Morphology (15)

3.1. Diversity in Plants habits – Annual, biannual, perennials

3.2. Roots – Types of root : tap and adventitious, modification of root : for food storage, respiration, and supports.

3.3. Stem – Types of Stem, Characteristic features, branching, modification of Stem – Underground

7. BOTANY

3S- BOTANY

ANGIOSPERM SYSTEMATICS, ANATOMY & EMBRYOLOGY

UNIT I: Angiosperm Systematics and Biodiversity.

1.1 Angiosperms: Origin and Evolution **(Pteridospermean and Bennititalean Theory)**

1.2 Botanical Nomenclature: Principles of rules, Taxonomic Ranks, Type concept, Valid publication.

1.3 Herbarium – Concept & significance, Royal Botanical Garden, Kolkata.

1.4 Concept of biodiversity, Ex situ and In situ conservation

1.5 Concept & importance of Biodiversity.

UNIT II: Angiosperm Systematics

2.1 Systems of Classification: Bentham and Hooker's System, Engler and Prantle's system.

2.2 Systematic studies & economic importance of following Families

Dicotyledons (Polypetalae) : Malvaceae, Brassicaceae, Leguminosae, Apiaceae,

UNIT III: Angiosperm Systematics

3.1 Systematic studies & economic importance of following Families

Dicotyledons (Gamopetalae): Asteraceae, Asclepiadaceae, Apocynaceae, Solanaceae, Verbenaceae, Lamiaceae.

3.2 Dicotyledons (Monoclamydeae): Euphorbiaceae.

3.3 Monocotyledons: Liliaceae, Poaceae.

UNIT IV: Anatomy

4.1 Types of Tissues:

Meristematic – Types of meristems

Permanent – Simple and complex.

4.2 Characteristics of growth rings, Sapwood and heartwood.

4.3 Anatomy of root: Primary structure in dicot and monocot root, normal secondary growth in dicot root.

UNIT V: Anatomy

5.1 Anatomy of stem: Primary structure in monocot and dicot

stem, normal secondary growth in dicot stem.

5.2 Anomalies in primary structure in *Boerhhavia* stem, secondary structure in *Bignonia* and *Dracaena* stem.

5.3 Leaf Anatomy: Internal structure in *Nerium* and *Maize* leaf.

UNIT VI : Embryology

5.1 Microsporangium, microsporogenesis, development of male gametophyte.

5.2 Megasporangium, types of ovules, megasporogenesis, development of female gametophyte (monosporic, Bisporic & tetrasporic).

5.3 Double fertilization and triple fusion.

5.4 Embryo – Classification of embryo.

5.5 Endosperm types & significance, Suspended animation

LABORATORY EXERCISES

1) Embryology of Angiosperms:
   - i) Observation of wide range of flowers available in the locality and methods of their pollination.
   - ii) Study through permanent slides of T.S. of anthers, microsporogenesis, L.S. of ovule, types of endosperms and embryo of Capsella .
   - iii) Mounting of T.S. of anthers, Pollen grains and pollinia.
2) Anatomy of angiosperms : Preparation of double stained slides of root, stem and leaves of angiosperms mentioned in the syllabus.
3) Taxonomy : Description of ten plants belonging to different families in technical language and identifiction upto family level.
4) Long and short excursion is essential

Note : Field tour reports should be supported by exhaustive field notes and photographic representation of plant species studied

Brassiacaceae- *Brassica*, **Malvaceae-** *Hibiscus, Sida, Malvastrum*, **Fabaceae-** *Crotalaria, Indigifera, Tephrosia,* **Caesalpinoidae-** *Caesalpinea, Cassia*, **Mimosoidae-** *Prosopis, Acasia*, **Apiaceae-** *Corindrum,*
Apocynaceae- *Vinca, Thevetia*, **Asclepiadaceae-** *Cryptostegia,Calatropis*, **Solanaceae-** *Datura, Solanum, Withania*, **Euphorbiacea-** *Croton, Jatropha, Euphorbia,* , **Lamiaceae**- *Oscimum, Hyptis*, **Asteraceae-** *Tridax, Lagasca* **Verbanaceae** – *Lantana, Clerodendron*

PRACTICAL EXAMINATION

Time;- 5 Hours **Max. Marks- 50**

Q. 1 Preparation of double stained permanent micropreperation of given angiospermic Material Identification with reasons 10 Marks

Q. 2 Description of given angiospermic plant in technical language, identification up to family, floral formula, floral diagram (two Plants) 20 Marks

Q. 3 Spotting (taxonomy-1, anatomy-2, Embryology-2) 10 Marks

Q. 4 Class record, Excursion report with plant photographic submission 06 Marks

Q. 5 Submission of micropreperation and viva voce 04 Marks

Books Recommended :

1) **A.C.Dutta** : Text Book of Botany.
2) **Andrews A.N.** : Studies in Paleobotany.
3) **Arnold C.A.** : Introduction of Paleobotany.
4) **Bhojwani & Bhatnagar** : Embryology of Angiosperms.
5) **Chandurkar** : Plant Anatomy
6) **Cutter E.G.**, 1971 : Plant Anatomy Experiment and Interpretation Part-II, Organs, Edward Arnold, London.
7) **Davis P.H.**, and Heywood V.H., 1993 : Principles of Angiosperm Taxonomy : Oliver and Boyd, London.
8) **Eames E.J.** : Morphology of vascular Plants. edition, prentice Hall of India Pvt.Ltd. New Delhi.
9) **Esau K.** : 1977, Anatomy of seed plant, 2nd Edition, John Wiley and Sons, New York.
10) **Gangulee & Kar** : College Botany Vol.II
11) **Gangulee Das and Dutta** : College Botany, Vol.I
12) **Giford E.M. and Foster A.S.**, 1988 : Morphology and Evolution of Vascular Plants, W.H. Freeman & Company, New York.
13) **Hartmann H.T. and Kestler D.E.**, 1976 : Plant Propagation Principles and practices, 3rd
14) **Heyhood V.H. and Moore D.M.** (Eds) 1984 : Current concepts in plant Taxonomy. Academic Press, London.
15) **Jeffrey C.**, 1982 : An introduction to Plant Taxonomy, Cambridge University Press, Cambridge, London.

B.Sc. Final Year, Semester-V
7: BOTANY

The examination in Botany of fifth Semester shall comprise of one theory paper, internal assessment and practical examination. Theory Paper will be of 3 Hrs. duration and carry 80 marks. The internal assessment will carry 20 marks. The practical examination will be of 4 hours duration and carry 50 marks.

The following syllabi is prescribed on the basis of six lecturers per week and 6 practical periods per batch per week. Each theory paper has been divided into 6 units. There shall be one question in every unit with internal choice for each of 12 marks & one compulsory question covering all the syllabus of Semester-V (8 marks).

5S - BOTANY
PLANT PHYSIOLOGY AND ECOLOGY

Unit - I: Plant Water Relations

1.1 Importance of water to plant life.
Imbibition , Diffusion,Osmosis, Plasmolysis.

1.2 Active and passive Absorption of water.

1.3 Ascent of sap - Root Pressure and Transpiration Pull Theory.

1.4 Transpiration - Types of transpiration, Stomatal movements, Mechanism of transpiration (Starch) sugar hypothesis), Significance. Antitranspirant, Guttation.

1.5 Mineral uptake - Active uptake - Career Concept, Passive up take - Ion Exchange.

Unit - II: Metabolism-

2.1 Photosynthesis - Introduction, Role of Light, Photosynthetic Apparatus and Pigments, Two Pigment Systems, Photophosphorylation, C3 and C4 cycle, CAM Pathway.

2.2 Respiration - Introduction, Mitochondria as a Respiratory centre, Types of Respiration - Aerobic and Anaerobic, Mechanism of aerobic respiration- Glycolysis, Kreb cycle, Electron transport system and Chemiosmotic ATP generation, Respiratory Quotient.

Unit - III: Metabolism and growth

3.1 Nitrogen Metabolism- Sources of nitrogen, Symbiotic nitrogen fixation, Role of Nitrate reductase.

3.2 Growth - Phases of growth, Growth curve, Physiological role of growth hormones (Auxins, Gibberellins, Cytokinins, Abscisic acid, and Ethylene).

3.3 Physiology of Senescence and Abscission.

Unit – IV: Plant responses

4.1 Photoperiodism - Concept of Florigen, Role of Phytochrome,

4.2 Vernalization- Concept and Significance.

4.3 Plant movement- Tropic (Phototropic and Geotropic) and Nastic (Epinasty, Hyponasty and Seismonasty)

4.4 Stress physiology- Concept, Types of stress, Water and Salinity stress.

Unit – V: Ecology and Environment:

5.1 Concept of environment, Concept and scope of ecology.

5.2 Ecological factors- Climatic- Light, Temperature and Water.

5.3 Atmosphere and its composition.

5.4 Edaphic factor- Process of soil formation, soil profile, soil biota and their role.

5.5 Ecological Adaptations - Morphological and Anatomical adaptation in Hydrophytes, and Xerophytes.

Unit – VI: Ecosystem:

6.1 Population Ecology- Natality and Mortality, Community characteristics – Frequency, Density and Abundance

6.2 Ecological Succession - Hydrosere and Xerosere

6.3 Ecosystem – Definition, Structure and Function,

Food chain, Food web, Energy flow model (Single channel model)

6.4 Types of Ecosystem- Pond ecosystem, Desert ecosystem.

LABORATORY EXERCISE :

Plant Physiology: Major experiment (Any Seven)

1. To study the effect of temperature and organic solvent on permeability of plasma membrane.
2. To study osmotic pressure of cell sap by plasmolytic method.
3. To determine water potential of plant tissue.
4. To determine the path of water (ascent of sap)
5. To determine the rate of transpiration by Ganongs photometer.
6. To determine rate of photosynthesis under varying quality of light and CO2 concentration.
7. To study the rate of photosynthesis in terrestrial plants with the help of Ganongs Photosynthometer.
8. Separation of chloroplast pigments by paper chromatography/ solvent extraction method.
9. Separation of amino acids by paper chromatography method.
10. To determine R.Q. using different substrates.
11. To determine the rate of respiration by Ganongs respirometer.
12. To study antagonism of salts.
13. To study phenomenon of adsorption.
14. To study effect of IAA and Gibberellins on seed germination.
15. Test for secondary metabolites- Alkaloid, Phenolics, Tannin, Flavonoids and Lignin
16. To study Endo and Exo-osmosis by egg membrane osmoscope

Plant Physiology: Minor experiment- (Any Three)

1. To demonstrate fermentation.
2. To demonstrate exo and endosmosis
3. To demonstrate transpiration by Bell jar.
4. To demonstrate light is necessary for photosynthesis
5. To demonstrate anaerobic respiration in germinating seeds.
6. To demonstrate the evolution of CO2 in respiration.
7. To demonstrate the phenomenon of nastic movement with help of *Mimosa pudica* / or *Biophytum sensitivum.*

Ecology: Major experiment (Any Three)

1. Study of morphological and anatomical adaptations in hydrophytes – *Hydrilla*, *Eichhornia*, *Typha, Vallisneria* and *Nymphaea* (any two)

Study of morphological and anatomical adaptations in xerophytes -*Asparagus*, *Nerium*, *Casuarina*, *Euphorbia*, *Cycas*, *Opuntia* (any two)

3. Study of community characterstics by quadrat method.
4. Determination of water holding capacity of different soils.
5. To determine the texture of different soils by sieve method.

Ecology: Minor experiment (Any Two)

1. To determine the porosity of soil.
2. To determine the transparency and temperature of water bodies.
3. Estimation of salinity of different water samples
4. Determination of pH of different soils and water samples by pH papers/ pH meter.
5. Study of meteorological instruments -Rain gauge, Hygrometer, Barometer

PRACTICAL EXAMINATION

Time: 4 Hours Marks: 50

Q. 1 -	Physiology- major experiment-.	15
Q. 2 -	Comment one Minor Physiology experiment-	5
Q. 3 -	Ecology major experiment.	10
Q. 4 -	Ecology minor experiment.	5
Q. 5 -	Viva – voce	5
Q.6 -	Class record.	5
Q. 7 -	Co-curricular Activity Report	5

Co-curricular Activity Report" which mean the report on the activity
Such as Study Tour, Industrial visit to Research Institute, Excursion Tour to be submitted by the students at the time of practical examination.

Books Recommended:

Plant Physiology and Ecology:

1. Curtis & Clark. : Introduction of Plant Physiology.
2. H.N.Shrivastav. : Plant Physiology
3. Devlin R.M. : Plant Physiology
4. Salisbury F.B and Ross C.W. (1992).: Plant physiology (Fourth Edition) Wadsworth Publishing Company, California,USA.
5. William G. Hopkins. (1995): Introduction to Plant Physiology, Published by – John Wiley and Sons, Inc.
6. V.Verma : Plant Physiology Verlag, New York.Vol. II.

28. Cunningham.W.P. and Saifo S.W. 1997. Environmental Science: A Global Concern WCB. McGraw Hill.
29. Dash M.C. 1993. Fundamentals of Ecology. Tata McGraw Hill Publishing Co. Ltd., New Delhi.
30. Kumar.H.D. 1996. Modern Concepts of Ecology (3rd edition). Vikas Publishing House Pvt., Ltd. Delhi.
31. Kumar.H.D. 1997. General Ecology. Vikas Publishing Pvt. Ltd., Delhi.
32. Miller.W.R. and Donahue. R.L. 1992. Soils-An Introduction to Soil and Plant Growth (6th edition). Prentice Hall of India Pvt. Ltd., New Delhil.
33. Odum.E.P. 1996. Fundamentals of Ecology. Natraj Publishing, Dehradun.
34. Pickering.K.T. and Owen L.A. 1997. An Introduction to Global Environmental Issues (2nd edition). Butter and Tanner Ltd., Great Britain.
35. Smith L.R. and Mith T.M. 1998. Elements of Ecology. (4th edition). Animprint of Addison Wesley, Longman ink. California.
36. Smith.L.R. 1996. Ecology and Field Biology (5th edition). Harper Collns
37. Tyler. M.G. Jr. 1997. Environmental Science: Working with Earth (6th edition). Wordsworth Publishing Co.
38. Weaver. J.E. and Clements. S.E. 1966. Plant Ecology. Tata McGraw publishing Co. Ltd. Bombay.
39. Chaudhari M.A. and Gupta K.K. 2009. Practical plant physiology. New Central Book agency Ltd. Kolkata.
40. Bendre: Practical Botany for B.Sc.III year. Rastogi Publications, Meerut.

Semester-VI

6S Botany

The examination in Botany of sixth Semester shall comprise of one theory paper, internal assessment and practical examination. Theory Paper will be of 3 Hrs. duration and carry 80 marks. The internal assessment will carry 20 marks. The practical examination will be of 4 hours duration and carry 50 marks.

The following syllabi is prescribed on the basis of six lecturers

per week and 6 practical periods per batch per week. Each theory paper has been divided into 6 units. There shall be one question in every unit with internal choice for each of 12 marks & one compulsory question covering all the syllabus of Semester-VI (8 marks).

SEMESTER VI – MOLECULAR BIOLOGY AND BIOTECHNOLOGY

Unit-I : DNA the genetic material :

1.1 Historical account – Giffith 's Expt, Hershy and Chase Expt.
1.2 DNA– Chemical composition and Double Helical model,
1.3 DNA replication in Eukaryotes;
1.4 DNA Packaging - Nucleosome and Solenoid
1.5 Satellite, Repetitive DNA and Transposable element in plants (AC-DS system)

Unit-II : Gene Structure and Expression -

2.1 Concept of gene, Fine structure of Gene
2.2 Gene Expression –
Central Dogma, Types of RNA, Genetic code, Ribosome as a translation machine
2.3 Transcription in Eukaryotes – Mechanism of Transcription and RNA Processing
2.4 Translation in Eukaryotes.
2.5 Endomembrane system (Flow of Peptide)

Unit – III : Regulation of Gene Expression

3.1 Regulation of Gene Expression in Prokaryotes – Operon concept with special reference to Lac Operon
3.2 Regulation of gene expression of Eukaryotes – Britton Davidson Model
3.3 Protein Folding Mechanism and Structure (Primary, Secondary, Tertiary and Quaternary)
3.4 Protein Sorting – Targeting to proteins to organelles
3.5 Protein Trafficking

Unit-IV : Genetic Engineering -

4.1 Tools and techniques of recombinant DNA technology,
4.2 Restriction Enzymes – Nomenclature and Types
4.3 Cloning vectors – Plasmids, Phages, Cosmids
4.4 Gene Source- Genomic and c-DNA library

4.5 Gene Transfer Techniques –
Direct - (1) Chemical method, (2) Electroporation, (3) Gene gun method
Indirect – Agrobacterium mediated gene transfer

4.6 Gene Amplification - _Polymerase Chain Reaction (PCR)

Unit-V : Plant Tissue Culture -

5.1 Basic aspects of plant tissue culture

5.2 Laboratory Requirement –
Infrastructure,
Instruments (laminar air flow, autoclave, growth chamber),
Culture Media (MS Media),
Growth Hormone (Auxin, Cytokinin and Gibberellins)
Sterilization Techniques

5.3 Tissue Culture Technique - Cellular totipotency, differentiation and morphogenesis; Callus Culture; Micro propagation

Unit-VI : Applications of Biotechnology -

6.1 Agriculture – Haploid plant production (Anther and Pollen Culture); Protoplast Culture and Somatic Hybridization; Transgenic Plant - BT Cotton, Synthetic seed. Salient achievements of crop biotechnology

6.2 Industry – Fermentation Technology- Bakery Products and Alcohol Productions.

6.3 Health Care – Edible Vaccines

6.4 Conservation – Cryopreservation, Genetically Modified Organisms: - Pros and Cons

LABORATORY EXERCISE

1) Molecular biology (Major) (Any One)

1. Isolation of DNA by crude method
2. Estimation of DNA by Diphenylamine method
3. Estimation of RNA by Orcinol method

2) Molecular biology (Minor) (Any One)

1. Demonstration of DNA Electrophoresis,
2. Demonstration of double helical model of DNA
3. Demonstration of AC-DS System in Maize kernel
4. Demonstration of Centrifugation

3) Biotechnology (Any Six)

1. Working Principle and application of Autoclave

2. Working Principle and application of Laminar Air Flow
3. Cleaning and Sterilization of Glassware
4. Sterilization of Explant
5. Inoculation of Explant
6. Demonstration of in vitro culture techniques – anther and pollen culture
7. Isolation of Protoplast by Mechanical Method
8. Isolation of Protoplast by Enzymatic Method
9. Demonstration of technique of Micropropogation
10. Preparation of Artificial Seed
11. Demonstration of hardening of tissue culture plant
12. Preparation of Tissue culture media
13. Pollen viability test.

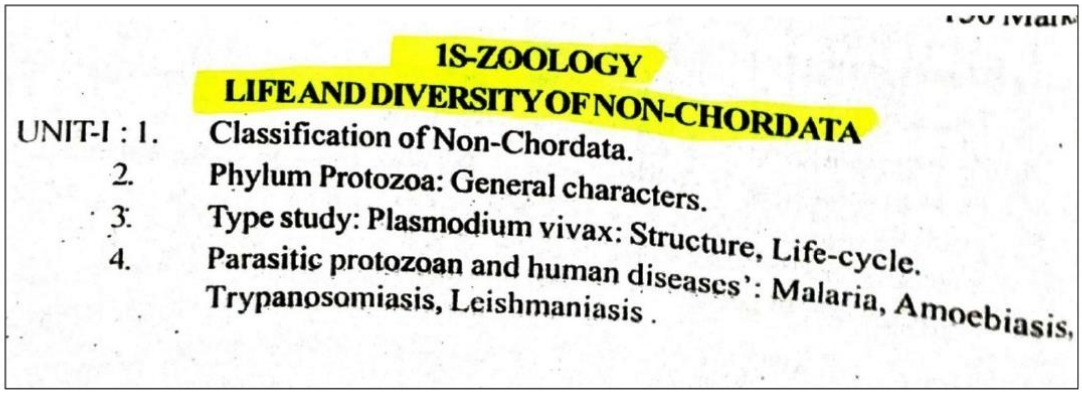
Note: Visit to molecular biology, biotechnological research institute/ industry

PRACTICAL EXAMINATION

Time : 4 hours. **Marks : 50**

Que.1 : To perform given Molecular Biology experiment 15 Marks
Que.2 : Comment on minor molecular Biology Experiment 05 Marks
Que.3 : To perform given Biotechnology experiment 15 Marks
Que.4 : Comment on any one Biotechnology Experiment 05 Marks
Que.5 : Visit report 05 Marks
Que.6 : Class record/ and viva-voce 05 Marks

1. Pradip's Botany Vol. V, Biochemistry and Biotechnology- New Millenium Edition
2. Alberts, B.Bray, D.Lewis, J.Raff, M.Roberts, K. and Watson, I.D. 1999. Molecular Biology of Cell - Garland Publishing Co. Inc New York, U.S.A.
3. Gupta, P.K. 1999 : A Text book of Cell and Molecular Biology, Rastogi Publication, Meerut, India.
4. Wolfe, S.L. 1993. Molecular and Cell Biology. Wordsworth Publishing Co., California, U.S.A.
5. Fakui, K. and Nakayama S. 1996. Plant Chromosomes. Laboratory Methods. CRC Press, Boca Raton, Florida.
6. Sharma, A.K. and Sharma, A. 1999. Plant Chromosomes : Analysis; Manipulation and Engineering. Harwood Academic Publishers, Australia.
7. Bhojwani, S.S. 1990. Plant Tissue Culture : Applications and Limi-



1S-ZOOLOGY

LIFE AND DIVERSITY OF NON-CHORDATA

UNIT-I : 1. Classification of Non-Chordata.

2. Phylum Protozoa: General characters.

3. Type study: Plasmodium vivax: Structure, Life-cycle.

4. Parasitic protozoan and human diseases': Malaria, Amoebiasis, Trypanosomiasis, Leishmaniasis .

UNIT-II :
1. Phylum Porifera: General Characters.
2. Type study: Scypha: Habits and habitat, External features, cell types, spicules & Structure and significances of canal system.
3. Phylum Coelenterata: General Characters,
4. Type study: Metridium: Habits and habitat, External features, Gastro-vascular cavity, Mesenteries, Reproduction.

UNIT-III:
1. Phylum Platyhelminthes: General Characters.
2. Type study: Fasciola hepatica: Habits and habitat, External features, Digestive, Excretory, Reproductive system and Life cycle.
3. Phylum Aschelminthes: General Characters.
4. Type study, Ascaris lumbricoides: Habits and habitat, External features, Digestive, Excretory, Reproductive system and Life cycle.

UNIT-IV:
1. Phylum Annelida: General Characters.
2. Type study: Leech: External features, Digestive, Excretory and Reproductive system.
3. Phylum Arthropoda: General Characters
4. Type study: Cockroach: Habits and habitat, External features, Digestive system, Respiratory system, Reproductive system.

UNIT-V
1. Phylum Mollusca: General Characters.
2. Type study: Pila globosa: Habits and habitat, External features (Shell and Body), Digestive, Respiratory and Reproductive system.
3. Phylum Echinodermata: General Characters.
4. Type study: Asterias: Habits and habitat, External features, Digestive system, Water vascular system,

UNIT-VI
1. Phylum Hemichordata: General Characters, Body organization of Balanoglossus, Affinities of Balanoglossus, with non-Chordata, and Chordata.
2. Corals, coral-reefs.
3. Parasitic adaptations in Helminthes: Morphological and physiological
4. Larval forms and their significance: Amphiblastula, Planula, Trochophore, Bipinnaria, Brachiolaria,

Two practical per week each of 3 period's duration. The Examination shall be of 4 hrs duration and of 50 marks.

I-Life and diversity of Non-Chordata

1. Observation, Classification up to classes and sketching of the followi animals, (Specimens or Models):
   - Phylum Protozoa: Plasmodium trophozoite, Euglena, Entamoe histolytica.
   - Phylum Porifera: Sycon, Bath sponge, Euplectella.
   - Phylum Coelenterata: Obelia, Aurelia, Tubipora.
   - Phylum Helminthes: Fasciola, Taenia, Ascaris (male & female
   - Phylum Annelida: Nereis, Earthworm, Leech, Aphrodite
   - Phylum Arthropoda: Prawn, Limulus, Aranea, Scolopendra, Jul Moth, Mosquito.
   - Phylum Mollusca: Chiton, Pila, Dentalium, Unio, Octopus.
   - Phylum Echinodermata: Antedon, Holothuria, , Echinus, Sea st Brittle star
   - Phylum Hemichordata: Balanoglossus
2. Study of Permanent slides:
   L.S.Sycon, nematocyst, Ascaris egg, T.S. Ascaris and fasci through gonads, T.S.Leech through crop, T.S Cockroach gizza Compound eye of insect, T.S.Arm of Asterias, T.S.Balanogloss through different body regions. Larval forms; Amphiblastu Planula, Trochophore, Bipinnaria, Brachiolaria
3. Dissections: (Live/Preserved Animals)
   Leech/Earthworm: Alimentary canal, Reproductive syste Nervous system,
   i) Grasshopper/Cockroach: digestive system, Nervous syste Reproductive system
   ii) Pila: Nervous system.
4. Mounting :
   - Earthworm: Setae, nephridium, nerve ring, spermatheca, ovar
   - Pila: Radula, osphradium, and gill lamella.
   - Cockroach: Mouth parts, Salivary gland, trachea. Spirac gizzard.

Distribution of Marks during Practical Examination:

Time : 4 hrs.

i)	Identification and comments on spots (1-8) - 4 specimens, 4 slides	
ii)	Dissection	12 Marks
iii)	Permanent stained micro preparation.	10 Marks
	.....	8 Marks

iv) Study tour diary - ..... 4 Marks

v) Permanent stained micro preparation Submitted by examinee - ..... 4 Marks

vi) Certified class record and animal collection - 5Marks

vii) Check-list of (20) locally available invertebrate fauna 2Marks

vii) Viva-voce - ..... 5 Marks

Total :- ..... 50 Marks

Note:

1] One or two short excursion / study tours are compulsory for the collection and observation of animals in their natural habitat.

2] Candidates shall be required to produce at the practical examination the following.

- Practical record book duly signed by the teacher in charge and Certified by the Head of the department as bonafiede work of the Candidate.
- Ten permanent stained micro preparations.
- Study tour report or field diary duly signed by the teacher.
- Check list of locally available faunal diversity.

Reference Books Recommended (All latest editions):

1] Hickman, C.P. Jr.F.M. Hickman and L.S.Roberts, Integrated principles of Zoology Mosby College publication St.Louis.

2] Ayyar, E.K. and T.N.Ananthakrishnan, Manual of Zoology Vol.I (Invertebrata), Part-I & II S. Viswanathan (Printers and Publishes) Pvt. Ltd. Madras.

3] Jordan, E.L. and P.S.Verma Invertebrate Zoology, S.Chand and Co., Ltd. Ram Nagar, New Delhi.

4] Parker and Haswell, Text book of Zoology, Vol. I (Invertebrata), A.Z.T.B.S. Publishers and Distributors, New Delhi – 110051.

5] Waterman, Allyn J. etal., Chordate structure and Function, Mac Millan and Co Newyork.

6] S.N.Prasad : Text Book of Invertebrate Zoology.

7] Vishwanathan : Invertebrate Zoology.

8] Majpuria : Invertebrate Zoology.

9] Dhami and Dhami : Non-chordate Zoology.

10] Baini Prasad: Indian Zoological memoir. Pila.

11] R.L.Kotpal : Modern Text Book of Invertebrate Zoology.

5. A Handbook of Seed Inspectors : Central Seed Committee Ministry of Agriculture.
6. Indian Minimum Seed Certification Standards : N.S.Tunwar, S.V.Singh.
7. Principles of Seed Certification and Testing : N.P.Nema.

BSc.II Semester III

10.ZOOLOGY

There shall be the following paper and practical for B.Sc. Part-II Semester III examination. The syllabus is based on 6 theory periods and six practical periods per week (Total 75-80 theory sessions and 25 practical sessions during the complete semester). There shall be one compulsory theory paper of 3 hours duration, as stated below and a practical examination extending for four hours. Every examinee shall offer the following paper of 100 marks (80 for written examination and 20 marks for internal assessment) and a practical examination of 50 marks. Candidates are required to pass separately in theory and practical examination.

Semester III

1) Paper-I:
Life and diversity of Chordata and concepts of evolution — **Marks Allotted**
Written examination..... 80
Internalassessment..... 20
2) Practical: 50

Total: ..... 150 Marks

Paper -3 S-Zoology

LIFE AND DIVERSITY OF CHORDATA AND CONCEPT OF EVOLUTION

Unit I : Phylum Chordata;

Origin of Chordata.

Protochordates:– Type study: Amphioxus: Habits and habitat, External Characters - Digestive system and feeding, Excretory organs, gonads- Affinities of Amphioxus.

Affinities of Agnatha:

Series Picses:

Type study: *Scoliodon sarrokawah* (Dogfish) – Habits and habitat, External Characters, Digestive system: alimentary canal and digestive glands, Respiratory system: respiratory organ and mechanism of respiration, circulatory System: Structure and working of Heart, major arteries and veins, Lateral line receptors, Migration in fishes-Types, causes and significance.

Unit II : Class Amphibia:

Type Study – *Rana tigerina*, Habits and habitat, external, characters. Respiratory organs- Circulatory system; Structure of Heart, major arteries and veins, urinogenital system.. Parental care in amphibia.

Class Reptilia:

Type study- *Calotes versicolor*- Habits and habitat, External characters, circulatory system- Structure of Heart, major arteries and veins. Urinogenital system, snake venom and anti-venom,

Unit III : Class Aves:

Type study: Pigeon-*Columba livia* Habits and habitat, External characters, Respiratory system,

urinogenital system. Flight adaptations, Migration in birds.

Class Mammalia:

Primitive mammals: salient features of Prototheria and Metatheria, Morphology of mammalian endocrine glands.

Aquatic mammals.

Unit IV : Evolution: Meaning and scope,

Indirect Evidences of evolution: Evidences of organic evolution- morphological and anatomical, physiological and biochemical, embryological.

Direct evidences of evolution: Paleontological evidences: Fossils and fossilization: petrified fossils dead and preserve bodies cast and moulds, trails and foot prints, condition for fossilizations.–, Radioactive carbon dating of fossils - Living fossils. Importance of fossil record. Evidences from connecting links- Peripatus and Archaeopteryx.

A) **Taxonomy of Chordata:**

1. **General characters and classification of Phylum Chordata:**
2. **General characters and Classification up to orders of the following chordates or as per the availability in the laboratory from the major orders, (Specimens or Models):**

Protochordata: Herdmania, Doliolum Salpa, Amphioxus.
Agnatha: Petromyzon, Myxine.
Pisces: Scoliodon, Torpedo, Acipenser, Exocoetus. Hippocampus
Amphibia: Ichthyophis, Salamander, Bufo, Hyla.
Reptilia: Varanus, Phrynosoma, Chameleon, Cobra, krait, Russell's viper, Typhlops, Hydrophis
Aves: Duck, Woodpecker, Kingfisher, Parrot.
Mammalia: Mongoose, Squirrel. Manis. Bat., monkey,

B) **Dissections:**

1. Dissection - afferent and efferent branchial vessels, cranial nerves, internal ear of scoliodon.
2. Dissection - Digestive system, Arterial system, venous system, reproductive system of rat.
3. Permanent micro-preparations .a. Fish scales. b. Ampullae of Lorenzini. c. Eyeball muscles.
4. Observations of air bladder in air breathing fishes.

C) **Osteology.** Rabbit, Varanus (excluding loose bones of skull).

D) **Evolution:**

1. Study of fossils, including living fossils.
2. Study of Evidences of evolution.
   i) Analogous and Homologous organs.
   ii) Connecting links (Peripatus, Archaeopteryx, Limulus)
   iii) Embryological evidences
3. Application of Hardyweinberg`s law
4. Study of Mesozoic Reptiles (By Models/Charts).
5. Mimicry, coloration in animals.
6. Beak and Leg modifications with reference to: Parrot, Woodpecker, Kingfisher, Heron, Duck, Sparrow/Pigeon Hawk/Kite, Owl.

E) **Histological Slides** :- Amphioxus, Frog, Rat

Slides :

Amphioxus : T.S, Oral hood, Pharynx, Tail
Frog :- T.S. lung, Stomoch, Kidney, T.S. Intestine,
Rat:- T.S. Liver, Pancrease, Ovary, Testies, Pituitary, Thyroid, Adrenal

DISTRIBUTION OF MARKS FOR PRACTICAL EXAMINATION

1.	Dissection: -	10
2.	Permanent stained micro preparation.	05
3.	Spotting. (Specimens, Slides, bones, fossil)	10
4.	Practical on evolution -	10
5.	Class record	05
6.	Viva - Voce	05
7.	Submission of study tour report.	05
	Total Marks:	**50**

BSc.II Semester IV

ZOOLOGY

There shall be the following paper and practical for B.Sc. Part-II Semester IV examination. The syllabus is based on 6 theory periods and six practical periods per week (Total 75-80 theory sessions and 25 practical sessions) during the complete semester. There shall be one compulsory theory paper of 3 hours duration the semester, as stated below and a practical examination extending for four hours. Every examinee shall offer the following paper of 100 marks (80 for written examination and 20 marks for internal assessment) and a practical examination of 50 marks. Candidates are required to pass separately in theory and practical examination.

Marine ecosystem: Characteristics, salinity, temperature - pressure, zonation and stratification Estuarine ecology: Characteristics types, fauna and their adaptations.

REFERENCE BOOKS:

1. Cell Biology, Genetics, Molecular Biology, Evolution & Ecology – P.S. Verma & V.K. Agrawal.
2. Principles of Genetics – S.K. Jain
3. Genetics – P.K. Gupta
4. Applied Genetics – C. Pnmanuol.
5. Genetics: M.W. Strickberger, New York.
6. Principles of Genetics: Sinnot, Dunn and Dobzansky.
7. Principles of Genetics: Edidon Gardner.
8. Genetics. Verma, P.S. and V.K. Agarwal.. S. Chand & co. New Delhi
9. Gene VI. Lewin, B. 1998. Wiley Eastern Ltd., New Delhi.
10. Human Genetics. Rothwell, N.V. 1979. Prentice Hall of India, New Delhi

Practical:-

Two practical per week of 3 periods duration. Examination shall be of 5 Hrs. duration and of 50 marks.

A) Genetic experiments:

1. Recording of Mendelian traits in man.
2. Detection of monohybrid and dihybrid cross with the help of plastic beads.
3. Culturing *Drosophila* using standard methods .Drosophila – male and female identification, Mutant forms (from pictures)
4. Demonstration of bar bodies.
5. Preparation of human Karyotypes from Xerox pictures.
6. Photo slides for, Turner's syndrome, Klinefelter's syndrome, Down's syndrome
7. Detection of syndrome from chromosome spread picture.
8. Study of following human genetic traits and application of Hardy-Weinberg Principle to them – Baldness, length of index and ring Finger, attached and free earlobes, rolling of tongue, PTC taste. Other notable traits.

B) Ecology

1. Use of pH meter for estimation of pH in soil samples, b. Use of pH meter for estimation of pH in water samples
2. Estimation of Dissolved oxygen, salinity, pH, free CO_2, carbonates and bicarbonates, calcium in water samples.
3. Adaptations of aquatic and terrestrial animals based on a study of museum specimens. Such as rocky, sandy, muddy shore animals, flying and burrowing animals.
4. Study of natural ecosystem and field report of the visit.
5. Field collection methods;
6. Identification of common animals - Soil invertebrate diversity, diversity of birds and mammals in parks / botanical gardens, threats to local biodiversity.
7. Construction of a food web diagram based on a field visit.
8. Mounting of plankton.
9. Qualitative analysis of fresh water plankton

C) General:-

1. Visit to a National park or sanctuary, and submission of report.

DISTRIBUTION OF MARKS FOR PRACTICAL EXAMINATION.

1.	Ecological: Estimations -/Analysis	10
2.	Spotting. (2Spot from Sec. A & 3 Spot from Section B of 2 Marks each)	10
3.	Micro preparation.	05
4.	Genetic experiment -	10
5.	Class record	05
6.	Viva - Voce	05
7.	Submission of study tour report.	05
	Total Marks :	**50**

B.SC. FINAL, SEMESTER-V
10 : ZOOLOGY

There shall be the following paper and practical for B.Sc. Part-III Semester V examination. The syllabus is based on 6 theory periods and six practical periods per week (Total 75-80 theory sessions and 25 practical sessions during the complete semester). There shall a compulsory theory paper of 3 hours duration, as stated below and a practical examination extending for five hours. Every examinee shall offer the following paper of 100 marks (80 for written examination and 20 marks for internal assessment) and a practical examination of 50 marks. Candidates are required to pass separately in theory and practical examination.

Theory -5 S-ZOOLOGY:
(ANIMAL PHYSIOLOGY AND ECONOMIC ZOOLOGY)

		Marks Allotted
1)	Written examination.....	80
	Internal assessment.....	20
2)	Practical:	50
	Total:	150 Marks

Paper 5 S-ZOOLOGY
(ANIMAL PHYSIOLOGY AND ECONOMIC ZOOLOGY)
Max. Marks - 100 Total **Period - 75**

UNIT I : Respiration:

Structure of respiratory organs: Gills and Lungs

Mechanism of respiration: regulation of ventilation in lungs, exchange of gases at respiratory surface, Respiratory pigments in animals: Haemoglobin, Haemocyanin, Haemerythrin, chlorocruorin. Transport of gases: O2 and CO2 transport, Neurophysiologic control of respiration,

Circulation:

Blood : Definition and its constituents, functions of blood. Heart: Structure of human heart, pace maker, Cardiac cycle. Blood coagulation factors, blood groups A, B, O system and Rh-factor.

UNIT II : Muscle Physiology:

Types of Muscles: striated, non-striated and cardiac muscles

E.M. Structure and **Chemical** Composition of striated muscle, Neuromuscular junction.

Mechanism of muscle contraction by Sliding filament theory

Physical and Chemical changes during muscle contraction: muscle twitch, tetanus, isometric and isotonic contraction, summation of Stimuli, all or none law, fatigue, rigor mortis.

UNIT III : Nerve Physiology: Neuron: E.M. Structure of nuron and Types : Myelinated and non-Myelinated nerve fibres.

Conduction of Nerve impulse, Resting potential, initiation and propagation of action potential, Saltatory transmission, Neurotransmitters (Acetylcholine, dopamine, GABA, Serotonin, Epinephrine, Nor-Epinephrine), Synapse and synaptic transmission

Chemical co-ordination: Endocrine system: Hormones and their physiological roles of-

Pituitary, Thyroid, Parathyroid, Adrenal, Islets of Langerhan's,
Hormonal disorders: Dwarfism, Gigantism, Acromegaly, Goiter, Myxoedema, Cretinism, Osteoporosis,

UNIT IV : Reproductive Physiology: Estrous and menstrual cycle, hormonal control of reproduction in males and female, Structure and physiology of mammalian Placenta.

Homeostasis and conservative regulation: Osmoregulation and ionic regulation in aquatic animals. Osmoregulation in terrestrial animals Ammonotelism, ureotelism and uricotelism.

Thermoregulation in Poikilotherms and Homeotherms.

UNIT V : Agricultural Zoology: Economic importance of Insects

Beneficial insects – Spider, Mantis, Ladybugs, Damsel bug, Mealybug destroyer, Soldier beetle,

Green lacewing, Syrphid fly, Tachinid fly, Ichneumon wasp

iii) Those Institutions which are already having Zoology museums should not procure museum specimens now onwards and should use charts / slides / models / photographs and digital alternatives in case of need. Those new institutions which are not having Zoology museum in their department should provide learning related to zoological specimens with the help of charts / slides / models / photographs and digital alternatives / and arrange visit of students to already established museums.

Practicals:

1. Detection of blood groups in human being.
2. Differential counts of blood.
3. Estimation of hemoglobin percentage with the help of haemometer.
4. R.B.C. count.
5. W.B.C. count.
6. Preparation of haemin crystals
7. Measurement of blood pressure.
8. Action of salivary amylase on starch.
9. Qualitative detection of nitrogenous waste products (Ammonia, urea, uric acid) in given sample.
10. Demonstration of kymograph unit, Respirometer through available resources.
11. Observation and identification of Insect Pests of local crops, and predator insects.
12. Life Cycles of Honey bee, Lac insect, Silk Moth.
13. Histological Slides of major organs of Respiratory systems, circulatory system, Nervous system, Different types of Muscles, Endocrine glands, testis, ovary.
14. Study of locally available fishes, Indian major carps, Exotic carps, Common carp.

Distribution of marks for practical examination :

Time: 5 Hrs.	Marks
01. Physiological Expt.	
a) Major.....	10
b) Minor	05
02. Economic Zoology & Histology	
a) Spotting (A-F)	12
b) Description and Comments on Topic from Unit V and VI	08
04. Class record duly signed by teacher in charge and certified by H.O.D.	05
05. Study tour report.	05
06. Viva - voce	05
Total Marks	50

REFERENCES

1. Prosser and Brown : Comparative Animal Physiology
2. Hisotlogical Slides of Respirator systems, circulatory system, Muscles, Nervous system Endocrine glands, Gonads, placentae
3. Guyton : Physiology
4. Best and Taylor : Physiological basis of Medical practice
5. C Hoar, W.S.. General and comparative Physiology. Prentice Hall of India.
6. Lehninger. L.. Biochemistry. W.H. Freeman & co.
7. Nagabushnam, R.. Animal physiology. S.Chand & co.
8. Martin, D.W. P.A. Mayes and W.W. Rodwell, Harper's Review of Biochemistry lange Medical Publications.
9. Prosser, C.L. and F.A.Brown Comparative Animal physiology. W.B. Suanders.
10. Rama Rao, A.V.S.S.. Biochemistry. UBSPD.
11. Stryer. L. Biochemistry Wiley International
12. Verma, P.S. and V.K. Agarwal.. Animal physiology. S.Chand & co.
13. Wilson, J.A., Principles of Animal Physiology, Macmillan
14. Chatterjee, C.J; Human Physiology(Vol-I and II)
15. Economic Zoology, G.S. Shukla, V.B. Upadhyay (2006)
16. Text Book of Applied Zoology, Pradip. V Jabde (2005).
17. Mac E. Hadley: Endocrinology, Prentice Hall, International Edition, 2000

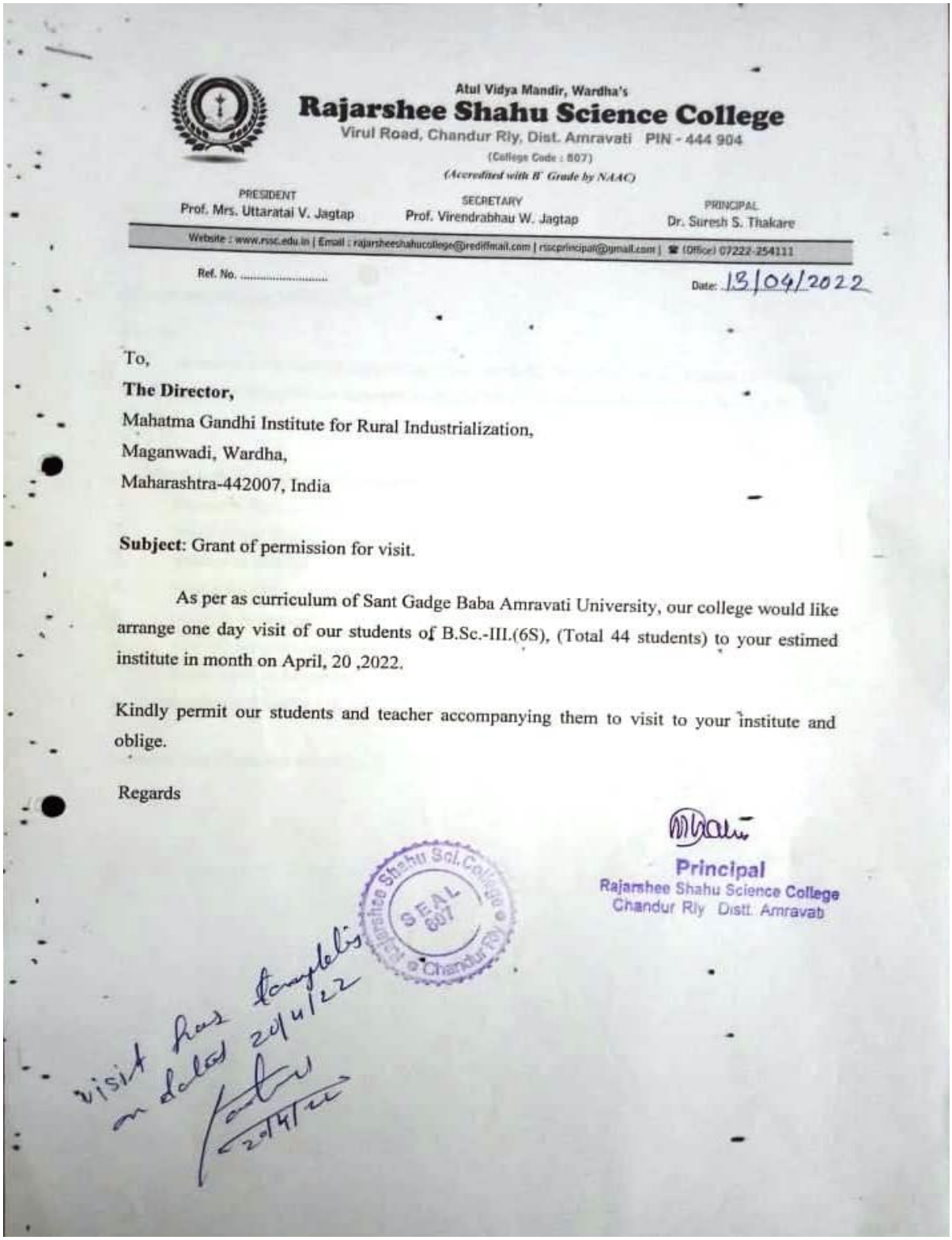
B.SC. FINAL, SEMESTER-VI

ZOOLOGY

There shall be the following paper and practical for B.Sc. Part-III Semester VI examination. The syllabus is based on 6 theory periods and six practical periods per week (Total 75-80 theory sessions and 25 practical sessions during the complete semester). There shall a compulsory

Field Visit

Field Visit by Department of Chemistry



Atul Vidya Mandir, Wardha's
Rajarshee Shahu Science College
Virul Road, Chandur Rly, Dist. Amravati PIN - 444 904
(College Code : 807)
(Accredited with 'B' Grade by NAAC)

PRESIDENT
Prof. Mrs. Uttaratai V. Jagtap
SECRETARY
Prof. Virendrabhau W. Jagtap
PRINCIPAL
Dr. Suresh S. Thakare

Website : www.rssc.edu.in | Email : rajarsheeshahucollege@rediffmail.com | rsscprincipal@gmail.com | ☎ (Office) 07222-254111

Ref. No. .....

Date: 13/04/2022

To,
The Director,
Mahatma Gandhi Institute for Rural Industrialization,
Maganwadi, Wardha,
Maharashtra-442007, India

Subject: Grant of permission for visit.

As per as curriculum of Sant Gadge Baba Amravati University, our college would like arrange one day visit of our students of B.Sc.-III.(6S), (Total 44 students) to your estimed institute in month on April, 20 ,2022.

Kindly permit our students and teacher accompanying them to visit to your institute and oblige.

Regards

Principal
Rajarshee Shahu Science College
Chandur Rly Distt. Amravati

SEAL 807

visit has completed on dated 20/4/22

20/4/22

Rajarshee Shahu Science College, Chandur Rly

Department of Chemistry

Study Tour Mahatma Gandhi Institute for Rural Industrialization, Wardha

As per University curriculum students' "Industrial Visit" was organized by Department of Chemistry at Wardha on 24th April 2022. During this visit, students got an opportunity to study the working and various training programme of Bio-Processing & Herbal Division, Khadi & Textile Division ,Chemical Industries Division, Rural Craft & Engineering Division, Rural Energy & Infrastructure Division manufacturing process taking place at **Mahatma Gandhi Institute for Rural Industrialization, Wardha** Students are largely benefited by this industrial knowledge.

Second part of tour we are visited to "**Maganwadi" and Sewagram "Bapu Kuti"** collected information of Mahatma Gandhi National work for India freedom.

लोकमत

लालपरीचेही झाले दर्शन : विविध स्मारकांची जाणली विद्यार्थ्यांनी माहिती

अन् तब्बल दोन वर्षांनी सेवाग्राम आश्रम परिसरात दाखल झाली शैक्षणिक सहल

लोकमत न्यूज नेटवर्क

सेवाग्राम : कोरोनामुळे सर्व काही ठप्प होते. त्यातच शैक्षणिक सहली, शाळा महाविद्यालये, पर्यटन स्थळेही बंद होती. मात्र, आता कोरोना निर्बंध हटविण्यात आल्याने सेवाग्राम येथील महात्मा गांधीजींच्या आश्रम प्रतिष्ठानात तब्बल दोन वर्षांनी शैक्षणिक सहल आली. यावेळी विद्यार्थ्यांनी स्मारकांची माहिती जाणून घेतली.

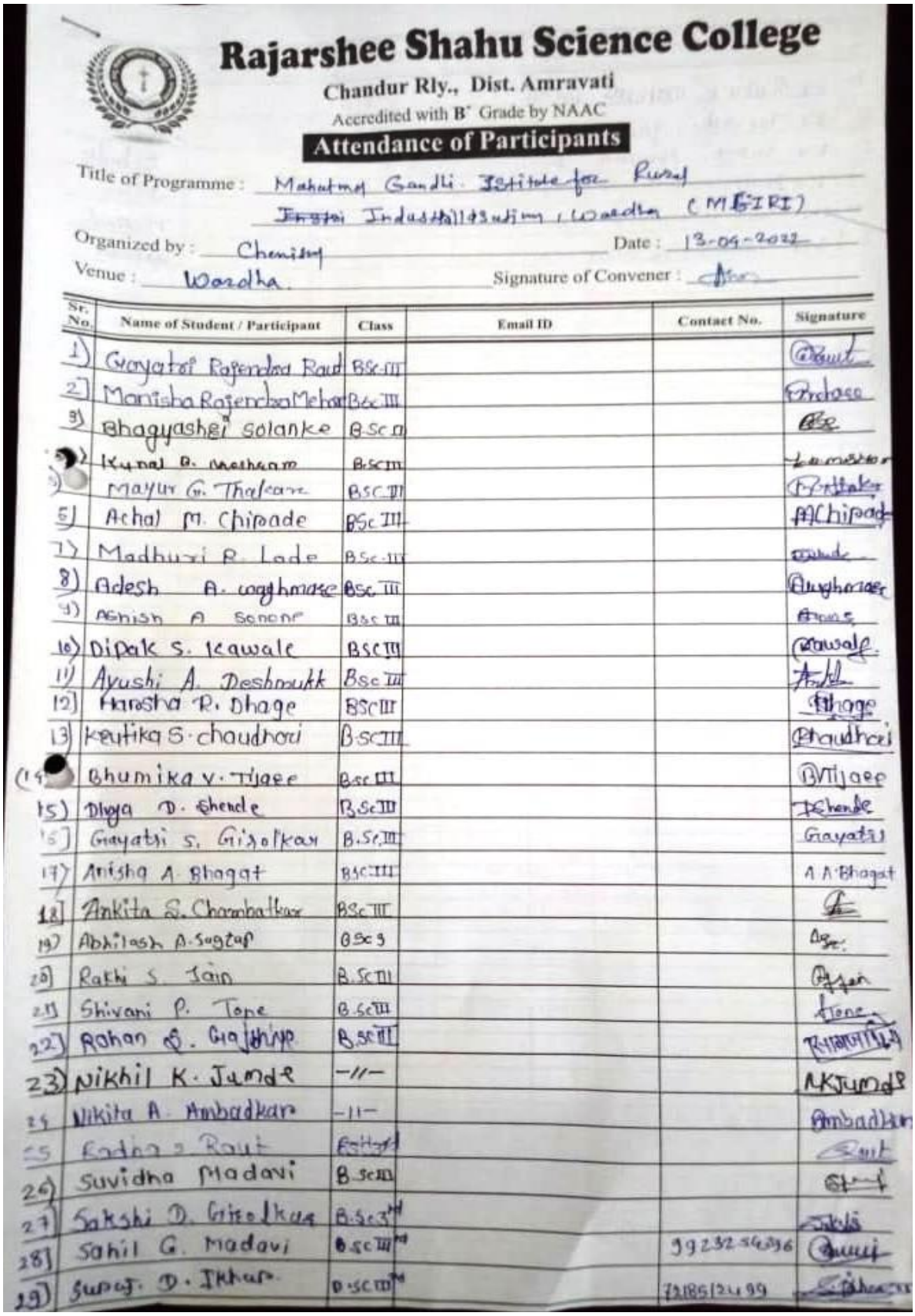
कोरोना काळात तब्बल दोन वर्ष सर्व काही बंद होते. घरात राहून अनेकांना मानसिक, आर्थिक व शारीरिक त्रास सहन करावा लागला. अशातच राज्य परिवहन महामंडळाच्या कर्मचाऱ्यांचाही संप झाला. बस सेवाही बंद झाली होती. मात्र, बुधवारी २० रोजी महात्मा गांधी आश्रमात शैक्षणिक सहल आली आणि लालपरीचेही दर्शन यानिमित्ताने झाले.

शाळा महाविद्यालय म्हटले की, शैक्षणिक सहल ओघाने आलीच. मागील काही महिन्यांपासून शैक्षणिक सत्र सुरू झाल्याने नव्या उत्साहाने आपापली अध्यापनाची कामे सुरू झाली. परीक्षेचा कालावधी असल्याने तसेच अभ्यासक्रम पूर्ण करावयाचा असल्याने सर्वांनाच घाई आहे. त्यामुळे शैक्षणिक सहल हा विषय हा तस बाजूलाच राहिला. पण, चांदूर रेल्वे येथील राजर्षी शाहू महाराज विज्ञान महाविद्यालयाची शैक्षणिक सहल आश्रमात आली. या माध्यमातून लालपरीचेही दर्शन झाले हे विशेष.

IQAC Co-ordinator
Rajarshee Shahu Science College
Chandur Rly., Dist. Amravati

Rajarshee Shahu Sci College SEAL 807

Principal
Rajarshee Shahu Science College
Chandur Rly. Dist. Amravati



Rajarshee Shahu Science College

Chandur Rly., Dist. Amravati

Accredited with B+ Grade by NAAC

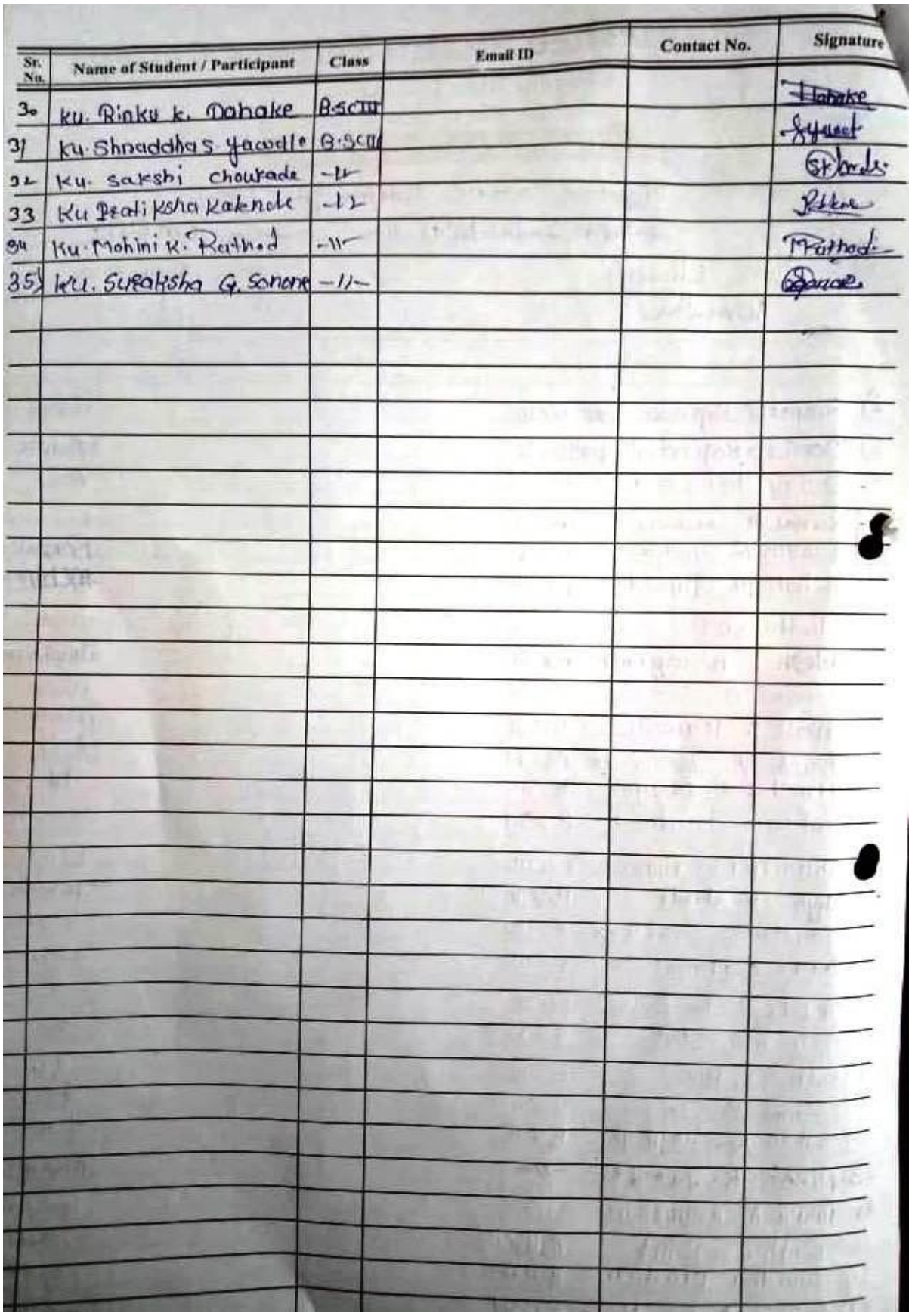
Attendance of Participants

Title of Programme : Mahatma Gandhi Institute for Rural Industrialisation, Wardha (MGIRI)

Organized by : Chemistry Date : 13-09-2022

Venue : Wardha. Signature of Convener :

Sr. No.	Name of Student / Participant	Class	Email ID	Contact No.	Signature
1)	Gayatri Rajendra Raut	BSc III			Raut
2)	Manisha Rajendra Mehar	BSc III			Mehare
3)	Bhagyashri Solanke	B.Sc III			Bhagyashri
4)	Kunal B. Meshram	B.Sc III			Meshram
5)	Mayur G. Thalcare	BSc III			Thalcare
6)	Achal M. Chipade	BSc III			AChipade
7)	Madhuri R. Lade	BSc III			Lade
8)	Adesh A. Waghmare	BSc III			Waghmare
9)	Ashish A. Sonone	BSc III			Sonone
10)	Dipak S. Kawale	BSc III			Kawale
11)	Ayushi A. Deshmukh	BSc III			Deshmukh
12)	Harsha R. Dhage	BSc III			Dhage
13)	Kavita S. Chaudhari	B.Sc III			Chaudhari
14)	Bhumika V. Tijare	BSc III			BTijare
15)	Divya D. Shende	B.Sc III			Shende
16)	Gayatri S. Gijolkar	B.Sc III			Gayatri
17)	Anisha A. Bhagat	BSc III			A A Bhagat
18)	Ankita S. Chambhalkar	BSc III			
19)	Abhilash A. Sugtap	BSc 3			
20)	Rakhi S. Jain	B.Sc III			
21)	Shivani P. Tone	B.Sc III			Tone
22)	Rohan S. Gajbhiye	B.Sc III			
23)	Nikhil K. Jumde	-//-			NKJumde
24)	Nikita A. Ambadkar	-//-			Ambadkar
25)	Radha S. Raut				Raut
26)	Suvidha Madavi	B.Sc III			
27)	Sakshi D. Gijolkar	B.Sc III			Sakshi
28)	Sahil G. Madavi	B.Sc III		9923254396	
29)	Suraj D. Ikhar	B.Sc III		7218512499	



Sr. No.	Name of Student / Participant	Class	Email ID	Contact No.	Signature
30	Ku. Rinku k. Dahake	B.Sc III			Dahake
31	Ku. Shraddha s yawale	B.Sc III			Syawale
32	Ku. sakshi chourade	-II-			Shourade
33	Ku Pratiksha Kakade	-II-			Pkkade
34	Ku. Mohini K. Rathod	-II-			Rathod
35	Ku. Suraksha G. Sonone	-II-			Sonone

Field Visit by Department of Physics

RajarsheeShahu Science College, Chandur Rly

Report on

Visit to Mahatma Gandhi Institute for Rural Industrialisation, Wardha

Session 21-22

Name of Activity	Visit to Mahatma Gandhi Institute for Rural Industrialization, Wardha, Mahatma Gandhi Ashram, Bapukuti, Wardha and MaganSangrahalaya, National Gandhi Museum, Wardha organized by 'Department of Physics' and 'Department of Chemistry'.
Day & Date	Wednesday, 20April 2022
Time & Venue	8.00 AM to 6.30 PM, Venue: 1) Mahatma Gandhi Institute for Rural Industrialization, Wardha 2) Mahatma Gandhi Ashram, Bapukuti, Wardha 3) MaganSangrahalaya, National Gandhi Museum, Wardha
Targeted Audience	Students of B.Sc. III (44 Students), Faculty Members (04)
Objective of the Activity	Objectives of industrial visit is to provide students an insight regarding internal working of institute for Rural Industrialization. Theoretical knowledge is not enough for making a goodprofessional career. With an aim to go beyond academics, industrial visit provides student a practical perspective on the world of work.

Briefing of activity

Brief Report on

Visit to Mahatma Gandhi Institute for Rural Industrialization, Wardha

Industry visit to Mahatma Gandhi Institute for Rural Industrilization, Wardha, Mahatma Gandhi Ashram, Bapukuti, Wardha and MaganSangrahalaya, National Gandhi Museum, Wardha organized by Department of Physics and Department of Chemistry, RajarsheeShahu Science College, Chandur Rly. Total 44 students and 04 Faculty members Dr. A. P. Pachkawade, Dr. A. D. Bansod, Dr. S. S. Padhen and Dr. R. N. Bhagat went to the field visit.

MIGIRI's Origin in A.I.V.I.A founded by Gandhiji. Gandhiji started the all india village industries association on 14-12-1934 in the upperroom of Mahaila Ashram, Wardha which later became MGIRI

Students visited the section in which

1)Chemical Based Industries- High performance liquid (HPLC), Gas (GC) Chromatograph

- Atomic Absorption Spectrophotometer (AAS)

- UV- Visible Spectrometer

- High Performance Thin Layer Chromatograph (HPTLC)

- Tintometer, Polarimeter.

2) Khadi and Textile Section- Solar Charkha & Handloom Workshed

- Semi Automatic Looms

- Design Studio, CATD Facilities

-Hank & Jigger Dyeing M/C, Calendaring M/C

- Mini Central Silver Plant, Water Softening Plant

3) Bioprocessing & Herbal Section- Development of Herbal & Food Rural Industries

- Bio-Pesticides for Sustainable Agriculture

-Pilot Plant Facilities for Incubation & Training

- Innovative Biomanure& Microbial Diagnostic Kits

- Standardization, Quality Certification of Traditional Products.

4) Rural Infrastructure & Energy- Engineering Design Studio

- Hank Dyeing Machine

- Packaging Machine

-Energy Lab, LED Lab

-Innovation & Incubation Centre

5) Rural Craft & Engineering Section- Terracotta

- Metal Craft

- Wood & Bamboo Crafts

- Textile Craft

- Leather Craft

6) Management & Systems- Exploration of ICT Application in Rural Industry

- Design, Development, Implementation and Management of ICT Infrastructures in

MGIRI

- ICT Based Courses Training for Entrepreneurs

- Entrepreneurs Development in ICT Domain

- Training of Internal Staff for Adopting ICT in the day to day office work

One of the representative gave information to all the sections of our students.


महात्मा गांधी ग्रामीण औद्योगीकरण संस्थान,वर्धा
Rajarshee Shahu Science College
DEPARTMENT OF PHYSICS
SIR C. V. RAMAN PHYSICS SOCIETY


Rajarshee Shahu Science College
GPS Map Camera
Wardha, Maharashtra, India
Mahatma Gandhi Institute for Rural Industrialization, Maganwadi,
Ramnagar, Maganwadi, Wardha, Maharashtra 442001, India
Lat 20.739805°
Long 78.594591°
20/04/22 11:59 AM
Google

After that we went to MaganSangrahalaya, National Gandhi Museum, Wardha. Almost 76 years back on 30th December 1938, Gandhiji inaugurated the UdyogBhawan, the Museum of Rural Technology which was called MaganSangrahalaya. This Sangrahalya stands on 2.3 acres of land in a building of 10,000 Sq.Ft. floor area and has two wings– one of Khadi and second of Village Industries. Gandhiji last visited the Museum in 1944 after his release from the prison after the 'Quit India movement. At that time he observed that the Museum should not be a static picture of the techniques which can improve the village life but should be a dynamic window on evolving techniques in rural industrialization and thus be ever changing all the time. Dr. Devendra Kumar took up the work of Museum in 1978 to create a new awareness on the part of the scientists, technologists, economists, sociologists and experts in other disciplines all over the country towards Gandhian values. Students get information to visit this place after that we went to Bapukuti, Mahatma Gandhi Ashram.

Firstly we all taken lunch their then after visited the complete Aashram. After that we went to return to Chandu We Came sharply at 6.30 pm to RajarsheeShahu Science College,Chandur Rly.

News

लोकमत

लालपरीचेही झाले दर्शन : विविध स्मारकांची जाणली विद्यार्थ्यांनी माहिती

अन् तब्बल दोन वर्षांनी सेवाग्राम आश्रम परिसरात दाखल झाली शैक्षणिक सहल

लोकमत न्यूज नेटवर्क

सेवाग्राम : कोरोनामुळे सर्व काही ठप्प होते. त्यातच शैक्षणिक सहली, शाळा महाविद्यालये, पर्यटन स्थळेही बंद होती. मात्र, आता कोरोना निर्बंध हटविण्यात आल्याने सेवाग्राम येथील महात्मा गांधीजींच्या आश्रम प्रतिष्ठानात तब्बल दोन वर्षांनी शैक्षणिक सहल आली. यावेळी विद्यार्थ्यांनी स्मारकांची माहिती जाणून घेतली.

कोरोना काळात तब्बल दोन वर्ष सर्व काही बंद होते. घरात राहून अनेकांना मानसिक, आर्थिक व शारीरिक त्रास सहन करावा लागला. अशातच राज्य परिवहन महामंडळाच्या कर्मचाऱ्यांचाही संप झाला. बस सेवाही बंद झाली होती. मात्र, बुधवारी २० रोजी महात्मा गांधी आश्रमात शैक्षणिक सहल आली आणि लालपरीचेही दर्शन यानिमित्ताने झाले.

शाळा महाविद्यालय म्हटले की, शैक्षणिक सहल ओघाने आलीच. मागील काही महिन्यांपासून शैक्षणिक सत्र सुरू झाल्याने नव्या उत्साहाने आपापली अध्यापनाची कामे सुरू झाली. परीक्षेचा कालावधी असल्याने तसेच अभ्यासक्रम पूर्ण करावयाचा असल्याने सर्वांनाच घाई आहे. त्यामुळे शैक्षणिक सहल हा विषय हा तस बाजूलाच राहिला. पण, चांदूर रेल्व येथील राजर्षी शाहू महाराज विज्ञा महाविद्यालयाची शैक्षणिक सहल आश्रमात आली. या माध्यमातू लालपरीचेही दर्शन झाले हे विशेष.

Hello Wardha
Page No. 4 Apr 22, 2022
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Organising Committee

Dr. A. D. Bansod
Head, Dept of Chemistry

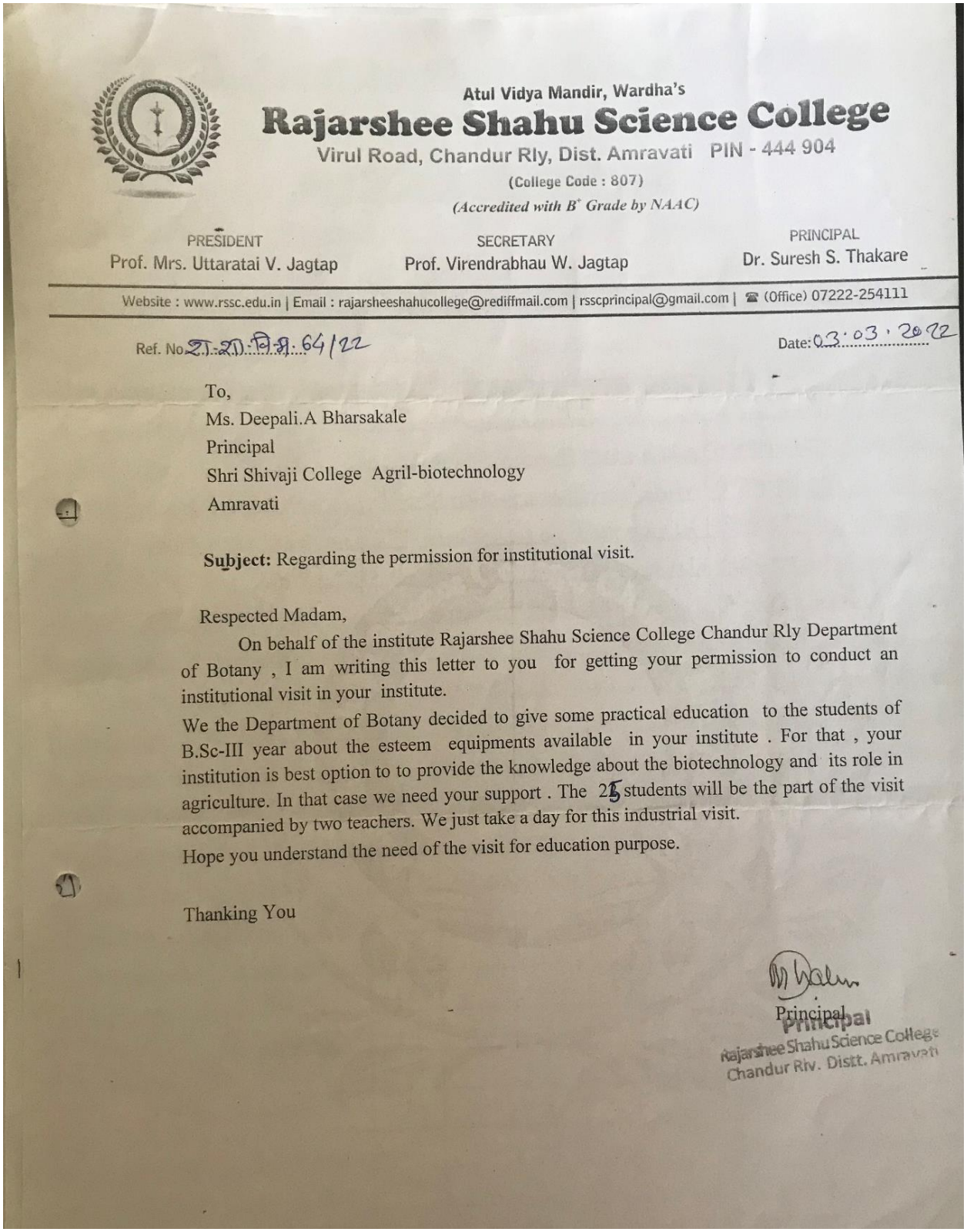
Dr. A. P. Pachkawade
Head, Dept of Physics

Dr. S. S. Padhen
Asst. Prof. of Chemistry

Dr. R. N. Bhagat
Asst. Prof of Physics

Principal
Rajarshee Shahu Science Coll
Chandur Rly. Distt. Amra

Field Visit by Department of Botany



Atul Vidya Mandir, Wardha's

Rajarshee Shahu Science College

Virul Road, Chandur Rly, Dist. Amravati PIN - 444 904

(College Code : 807)

(Accredited with B+ Grade by NAAC)

PRESIDENT
Prof. Mrs. Uttaratai V. Jagtap

SECRETARY
Prof. Virendrabhau W. Jagtap

PRINCIPAL
Dr. Suresh S. Thakare

Website : www.rssc.edu.in | Email : rajarsheeshahucollege@rediffmail.com | rsscprincipal@gmail.com | ☎ (Office) 07222-254111

Ref. No. 21-20-19-8-64/22 Date: 03·03·2022

To,
Ms. Deepali.A Bharsakale
Principal
Shri Shivaji College Agril-biotechnology
Amravati

Subject: Regarding the permission for institutional visit.

Respected Madam,

On behalf of the institute Rajarshee Shahu Science College Chandur Rly Department of Botany , I am writing this letter to you for getting your permission to conduct an institutional visit in your institute.

We the Department of Botany decided to give some practical education to the students of B.Sc-III year about the esteem equipments available in your institute . For that , your institution is best option to to provide the knowledge about the biotechnology and its role in agriculture. In that case we need your support . The 25 students will be the part of the visit accompanied by two teachers. We just take a day for this industrial visit.

Hope you understand the need of the visit for education purpose.

Thanking You

Principal

Principal
Rajarshee Shahu Science College
Chandur Rly. Distt. Amravati

Rajarshee Shahu Science College Chandur Rly
Department of Botany
Institutional Visit Report
Session (2021-2022)

As a part of curriculum, the Department of Botany organised a Institutional visit to Shri Shivaji Agri Biotechnology College Amravati on 4 th March 2022 . Visit was organised for B.Sc-III year students . All about 25 students from B.Sc-III participated in the visit. Students of B.sc-III year gathered in college at 10.30 am. At 11.00pm students left the college for Amravati. Before leaving the college Honourable Principal Dr.S.S.Thakre addressed the students and wished the students for the success of their study tour.

At about 11.45 am students reached amravati at shri shivaji Agri-Biotechnology college. Dr Deepali Bharshakale, Principal of college welcomed the students. After that students went to the auditorium where Mr.Nitin Ingole from Bioinformatic Department introduced the students what agri biotech is, what are their objectives , what are the different fields of biotechnology and what are the scope of biotechnology .
Thereafter students visit the poster presentation exhibited by the students of agribiotechnology . There they come to know about recent project work done by the students of Biotechnology regarding Plant Tissue Culture,Protein structure, antioxidant properties of medicinal plants, Bio - pesticides, Various fermentation techniques ect.

Later on they visit the Plant Pathology Lab and Biochemistry lab where Dr.-Atul Dhage and Prof Suresh Patil gave the information about the various plant diseases, their symptoms,. Students also observe the different plant specimens and also the Mushroom Culture lab. Here they also got the information about the working procedure and principle of fermenter. After that they visited the Bioinformatics lab where Dr Nitin Ingole gave the students information regarding the various software for the analysis of the protein structure , genetic mapping and Molecular structure of the molecule. Students also learn about the working principle of the various software. After visiting the Bioinformatics lab student visit to the Plant Tissue Culture Lab form the where Dr santoshChikate and Dr. Sarika Ingole Assistant Professor had given the information to students regarding the working Principle and application of Biotechnology equipments such as Centrifuge, Laminar Air Flow, Autoclave , Culture room ect From the Department of Horticulture Dr Dhiraj Kadam informed the students about different crops cultivated in various regions of Maharashtra . He also explained to the students about various Agriculture research centres present in the State and varieties of the crop on which research is going on.From the department of Food technology Dr.Pankaj Wankhade ,and Dr. Vrushali Oke informed the students about the food testing ,its different parameters ,and equipment used for testing the quality of food. After gathering the information about various laboratory students, they left for Chandur at 4.30 pm .


Rajarshee Shahu Science College,
Chandur Railway
Department of Botany
Chandur Railway
Maharashtra
India
2022-03-04(Fri) 11:50(am)
32°C
90°F
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2022-03-04(Fri) 01:09(pm)
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2022-03-04(Fri) 03:38(pm)

देशोन्नती

शनिवार, १२ मार्च २०२२

श्री शिवाजी कृषी जैवतंत्रज्ञान - महाविद्यालयाला शैक्षणिक भेट

देशोन्नती वृत्तसंकलन...

अमरावती - डॉ.पंजाबराव देशमुख कृषी विद्यापीठ, अकोला संलग्नित श्री शिवाजी शिक्षण संस्था अमरावतीद्वारा संचालित श्री शिवाजी कृषि जैवतंत्रज्ञान महाविद्यालय, अमरावती येथे श्री राजश्री शाहू विज्ञान महाविद्यालय चांदूररेल्वे येथील विद्यार्थ्यांनी शैक्षणिक भेट दिली.

महाविद्यालयाच्या प्राचार्या दीपाली मारसाकळे यांनी डॉ.मिनल केचे, विभागप्रमुख वनस्पतीशास्त्र, श्री राजश्री शाहू विज्ञान महाविद्यालयाच्याचमूचे पुष्पगुच्छ देऊन स्वागत केले. प्रा.नितीन इंगोले यांनी पॉवर पॉइंट प्रेझेंटेशनव्दारे महाविद्यालयातील विविध विषयांची व जैवतंत्रज्ञानातील भविष्यातील संधींबद्दल विस्तृत माहिती दिली. उपस्थितांचे आभार प्रा.सारिका इंगोले यांनी मानले.

Dr.S.P.Patharkar
Co-Convenor

Dr.M.J.Keche
Convenor

Principal
Rajarshee Shahu Science College
Chandur Rly Distt. Amravati

IQAC Co-ordinator
Rajarshee Shahu Science College

Rajarshee Shahu Science College

Chandur Rly., Dist. Amravati

Accredited with B+ Grade by NAAC

Attendance of Participants

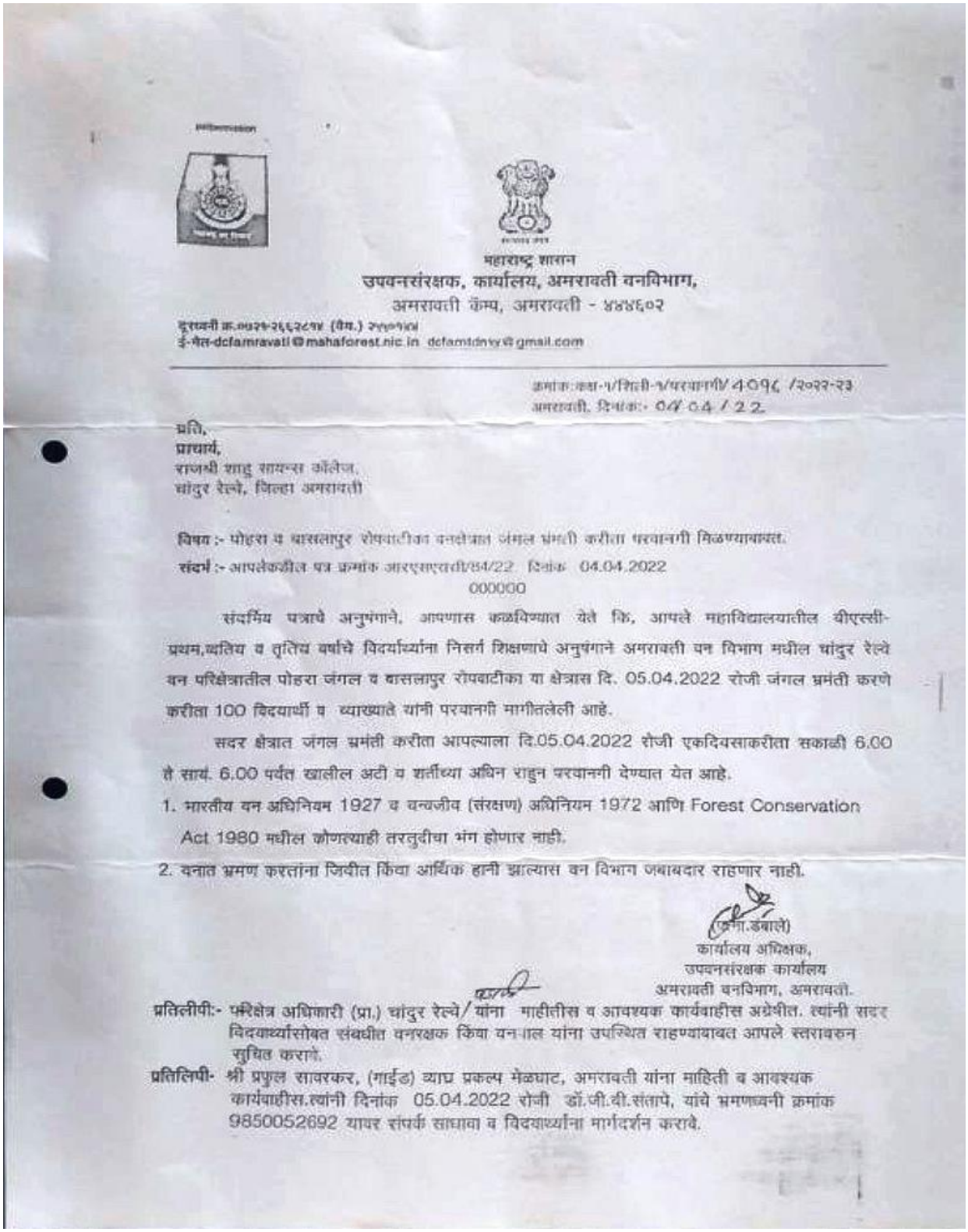
Title of Programme : Intistitutal Visit to Shri ~~Shivaji~~ Shivaji College of Agribiotechnology

Organized by : Department of Botany Date : 4/2/2022

Venue : Agribiotechnology College Amravati Signature of Convener : Dr. M. J. Kemr. Dr. S. P. Patnorkar

Sr. No.	Name of Student / Participant	Class	Email ID	Contact No.	Signature
1.	Ankita R. Pokale	B.Sc III	ankita.pokale@rssc.edu.in	7559140965	S.Pokale
2.	Arpita S. Maskare	-11-	arpitamaskar@rssc.edu.in	98229587	Arpita
3	Ankita S. Maskare	-11-	ankitamaskare@rssc.edu.in	98229587	Amaskar
4	Anushka R. Londe	-11-	anushka.londe@rssc.edu.in	9529034597	A.Londe
5	Aashish A. Sonone	-11-	asononeashish@rssc.edu.in	7448584289	[illegible]
6.	Ayushi A. Deshmukh	-11-	Ayushi.deshmukh.edu.in	9850125374	[illegible]
7.	Akanksha S. Gulhane	-11-	akansha.gulhane.edu.in	9623918168	A.Gulhane
8.	Aafrin S. A. J. Qureshi	-11-	aafreenqureshi.edu.in	9623088324	Aafrin
9.	Gayatri D. Chaudhari	-11-	gayatri.chaudhari@rssc.edu.in	7821011395	G.Chaudhari
10	Divya D. Shende	-11-	Divya.shende@rssc.edu.in	9922576152	D.Shende
11)	Bhagyashri R. Deore	-11-	-11-	7509814000	[illegible]
12)	Bhushan S. Jadhav	-11-	bhushanjadhav@rssc.edu.in	9158155002	[illegible]
13)	Dipak Kawle	-11-	-11-	—	[illegible]
14)	Krutika Chaudhari	-11-	-11-	8767288725	Chaudhari
15)	Bhumika V. Tijare	-11-	-11-	8767646583	B.V.Tijare
16)	Gayatri S. Girolkar	-11-	-11-	7820935621	Gayatri
17)	Kanta R. Busare	-11-	-11-	7498619275	R.Busare
18)	Harsha R. Dhage	-11-	-11-	9665083603	R.Dhage
19)	Khushabu M. Lokhande	-11-	-11-	8767026987	[illegible]
20)	Dnyaneshwari R. Jadhav	-11-	-11-	9529013453	R.Jadhav
21)	Mohini Kailas Rathod	-11-	-11-	7499494062	M.Rathod
22)	Pooja Anilrao Gawande	-11-	-11-	9022700221	P.Gawande
23)	Harsha S. Thakare	-11-	-11-	9623796803	[illegible]
24)	Pallavi N. Raut	-11-	-11-	8010807483	P.Raut
25)	Pratiksha D. Thawalkar	-11-	-11-	—	[illegible]

Field Visit by Department of Zoology



महाराष्ट्र शासन
उपवनसंरक्षक, कार्यालय, अमरावती वनविभाग,
अमरावती कॅम्प, अमरावती - ४४४६०२
दूरध्वनी क्र.०७२१-२६६२८१४ (वैम.) २५०१४
ई-मेल-dcfamravati@mahaforest.nic.in dcfamdnvv@gmail.com

क्रमांक:कक्ष-५/शिक्षी-५/परवानगी/४०१६ /२०२२-२३
अमरावती, दिनांक:- ०४/०४/२२

प्रति,
प्राचार्य,
राजश्री शाहु सायन्स कॉलेज,
चांदुर रेल्वे, जिल्हा अमरावती

विषय :- पोहरा व बासलापुर रोपवाटीका वनक्षेत्रात जंगल भ्रमंती करीता परवानगी मिळण्याबाबत.

संदर्भ :- आपलेकडील पत्र क्रमांक आरएसएसएस/04/22 दिनांक 04.04.2022

000000

संदर्भिय पत्राचे अनुषंगाने, आपणास कळविण्यात येते कि, आपले महाविद्यालयातील बीएस्सी-प्रथम,द्वतिय व तृतिय वर्षाचे विदर्यार्थ्यांना निसर्ग शिक्षणाचे अनुषंगाने अमरावती वन विभाग मधील चांदुर रेल्वे वन परिक्षेत्रातील पोहरा जंगल व बासलापुर रोपवाटीका या क्षेत्रास दि. 05.04.2022 रोजी जंगल भ्रमंती करणे करीता 100 विदयार्थी व व्याख्याते यांनी परवानगी मागीतलेली आहे.

सदर क्षेत्रात जंगल भ्रमंती करीता आपल्याला दि.05.04.2022 रोजी एकदिवसाकरीता सकाळी 6.00 ते सायं. 6.00 पर्यंत खालील अटी व शर्तीच्या अधिन राहुन परवानगी देण्यात येत आहे.

1. भारतीय वन अधिनियम 1927 व वन्यजीव (संरक्षण) अधिनियम 1972 आणि Forest Conservation Act 1980 मधील कोणत्याही तरतुदीचा भंग होणार नाही.
2. वनात भ्रमण करतांना जिवीत किंवा आर्थिक हानी झाल्यास वन विभाग जबाबदार राहणार नाही.

(प्रेमा.डंबाले)
कार्यालय अधिक्षक,
उपवनसंरक्षक कार्यालय
अमरावती वनविभाग, अमरावती.

प्रतिलीपी:- परिक्षेत्र अधिकारी (प्रा.) चांदुर रेल्वे/ यांना माहीतीस व आवश्यक कार्यवाहीस अग्रेषीत. त्यांनी सदर विदयार्थ्यांसोबत संबधीत वनरक्षक किंवा वनपाल यांना उपस्थित राहण्याबाबत आपले स्तरावरुन सुचित करावे.

प्रतिलिपी- श्री प्रफुल सावरकर, (गाईड) व्याघ्र प्रकल्प मेळघाट, अमरावती यांना माहिती व आवश्यक कार्यवाहीस.त्यांनी दिनांक 05.04.2022 रोजी डॉ.जी.बी.संतापे, यांचे भ्रमणध्वनी क्रमांक 9850052692 यावर संपर्क साधावा व विदयार्थ्यांना मार्गदर्शन करावे.

Atul Vidya Mandir, Wardha's
Rajarshee Shahu Science College
Virul Road, Chandur Rly, Dist. Amravati PIN - 444 904
(College Code : 807)
(Accredited with 'B' Grade by NAAC)

PRESIDENT
Prof. Mrs. Uttaratai V. Jagtap

SECRETARY
Prof. Virendrabhau W. Jagtap

PRINCIPAL
Dr. Suresh S. Thakare

Website : www.rssc.edu.in | Email : rajarsheeshahucollege@rediffmail.com | rsscprincipal@gmail.com | ☎ (Office) 07222-254111

Ref. No. RSSC/80/2022 Date: 30/03/2022

To,
The Divisional Forest Officer,
Pohara - Chirodi Cicle
Chandur Railway Dist.Amravati

Subject: Permission to Visit or Nature Walk in the Pohara Forest and Basalapur Nursery
Through: Dr.G.B.Santape, Convener, **SIGNature** (Student Initiative towards Green Nature)

Dear Sir

With reference to above cited subject, approximately Seventy-Five students of SIGNature Club of our College studying in B.Sc.I,II and III wish to visit the Pohara Reserve Forest. We have a great interest in wildlife and their habitat. We should like to visit the forest sometime in the first week of April. We are planning a half day visit and will make transport arrangement of students by our own vehicle

We would like to have the following regarding our visit:

(i) Are there any special rules and regulations that we need to follow during our visit?
(iii) Is there any arrangement for a staff member of the Forest, guide or Safari vehicle to show us around?

If you have a brochure giving detailed information regarding our queries, we would be very grateful if you could send it to email gajanan.santape@rssc.edu.in

Kindly let us know at your earliest if our visit will be convenient.

Thanking you.

Yours truly,

Place: Chandur Rly.

Rajarshee Shahu Sc College SEAL 807 Chandur Rly

Dr.S.S.Thakare
Principal
Rajarshee Shahu Science College
Chandur Rly. Distt. Amravati

Atul Vidya Mandir, Wardha's

Rajarshee Shahu Science College

Virul Road, Chandur Rly, Dist. Amravati PIN - 444 904

(College Code : 807)

(Accredited with B+ Grade by NAAC)

PRESIDENT	SECRETARY	PRINCIPAL
Prof. Mrs. Uttaratai V. Jagtap	Prof. Virendrabhau W. Jagtap	Dr. Suresh S. Thakare

Website : www.rssc.edu.in | Email : rajarsheeshahucollege@rediffmail.com | rsscprincipal@gmail.com | ☎ (Office) 07222-254111

Ref. No. RSSC/84/22 Date: 04/04/2022

To,
The Deputy Conservator of Forest
Amravati Forest Division,
Amravati

Subject: Permission to Visit or Nature Walk in the Pohara Forest and Basalapur Nursery
Through: Dr.G.B.Santape, Convener, **SIGNature** (Student Initiative towards Green Nature)

Dear Sir

With reference to above cited subject, approximately Seventy-Five students of SIGNature Club of our College studying in B.Sc.I,II and III wish to visit the Pohara Reserve Forest. We have a great interest in wildlife and their habitat. We should like to visit the forest sometime in the first week of April. We are planning a half day visit and will make transport arrangement of students by our own vehicle

We would like to have the following regarding our visit:

(i) Are there any special rules and regulations that we need to follow during our visit?
(iii) Is there any arrangement for a staff member of the Forest, guide or Safari vehicle to show us around?

If you have a brochure giving detailed information regarding our queries, we would be very grateful if you could send it to email gajanan.santape@rssc.edu.in

Kindly let us know at your earliest if our visit will be convenient.

Thanking you.

Yours truly,

Place: Chandur Rly.

Dr.S.S.Thakare
Principal

Principal
Rajarshee Shahu Science College
Chandur Rly Distt. Amravati

लिपिक
उप वनसंरक्षक कार्यालय,
अमरावती वन विभाग अमरावती

Rajarshee Shahu Science College Chandur Rly.

SIGNature

Report of Nature Walk

05th April 2022

The Nature walk was organized on 5th April 2022 in Pohara Malkhed Reserve Forest. It was 5Km.round.The aim of the activity was orienting students to the unique biological and cultural aspects of the region. This camp was provided students an experiential learning opportunity about the biodiversity, livelihoods, lifestyles and culture in the Forest .The Nature walk was attended over 95 Students with Six Faculties and Two NGO Members of WECS Mr.Saurabh Javanjal and Shashank Nagrale.

IQAC Co-ordinator
Rajarshee Shahu Science College
Chandur Rly., Dist. Amravati

Rajarshee Shahu Sci. College SEAL 807

Principal
Rajarshee Shahu Science College
Chandur Rly. Dist. Amravati

Rajarshee Shahu Science College

Chandur Rly., Dist. Amravati

Accredited with B⁺ Grade by NAAC

Attendance of Participants

Title of Programme : Nature Walk

Organized by : SIC Nature Date : 05/04/22

Venue : Pohara Forest Signature of Convener : [signature]

Sr. No.	Name of Student / Participant	Class	Email ID	Contact No.	Signature
1	KU. Rutuja M. Bhusate	BSc III		9145743505	R. Bhusate
2]	KU. Anjali G. Zele	-11-		8329076483	A. Zele
3]	KU. Vaishnavi G. Magar	-11-		8605415330	[signature]
4)	KU. Sakshi A. Ghatol	-11-		7507219751	[signature]
5)	Abhilash A. Jogtap	-11-		7219258685	A.A.Jg.
6)	Darshan. V. Raut	BSC II		7385093536	[signature]
7)	Deep M. Chaudhari	BSC II		9356665806	Deep
8)	Abhishek D. Surse	BSC II		7397875702	[signature]
9)	Ankita S. Chambatkar	BSC III	—	9146217620	[signature]
10)	Bhagyshri G. Solanke	-11-	-	9730080916	[signature]
11)	Rakhi S. Jain	-11-	—	7219383147	RJain
12)	Shivani P. Tone	-11-	—	8856011752	Tone
13)	Sweta V. Jalit	BSC II		8761236580	[signature]
14)	Kunal B. Meshram	B.Sc III	—	7498528177	K. Meshram
15)	Pranay A. Qureshi	BSC I	—	8010760804	[signature]
16)	Ashish P. Sonone	BSC III	-	7438884380	Asonone
17)	Suraj Ikhar	-11-		7218512499	[signature]
18)	Sahil Madavi	-11-	—	9923254596	[signature]
19)	Rohan Gajbhiye.	-11-	—	9359133705	[signature]
20)	Dipak Rawale	-11-	—	7262998289	Dipak
21)	Sakshi R. Shinganjude	-11-	—	9834097982	R.Shinganjude
22)	Samiksha G. Sahare	BSC II	—	7020886798	[signature]
23)	Shivani G. Deshmukh	BSC II	—	7620389181	[signature]
24)	Aditi P. Pawar	-11-	—	9637889897	[signature]
25)	Achal V. Nirutkar	-11-	—	7448224418	A.Nirutkar
26)	Mohini K. Pusnake	-11-	Cancle	9359178760	M.Pusnake
27)	Samiksha V. Tokase	BSC II		8308358141	S.V. Tokase
28)	Mayuri V. Dongare	BSC II	Cancle	9604192272	M.Dongare
29	Prajakta V. Kolhe	BSC II		9370670457	[signature]

Sr. No.	Name of Student / Participant	Class	Email ID	Contact No.	Signature
30)	Anjali P. Warhade	Bsc 1st	✓	8767609603	Anjali
31)	Mayuri P. Farkade	–	✓	9356964748	Farkade
32)	Divya N. Varhekar	–	✓	8766693498	Varhekar
33)	Ku. Snehal R. Shivankar	BSC II		9823402920	Shivankar
34)	Ku. Dhanashri R. Vijayankar	BSC III		8806192174	[illegible]
35)	Gauri Gandhekar	BSC I	✓	8208760330	Gandhekar
36)	Vanshika Deole	–11–	✓	9356970209	[illegible]
37)	Sakshi Chourade	BSC III	✓	8766988875	[illegible]
38)	Ayushi Deshmukh	BSC III	✓	9850125374	[illegible]
39)	Mohini Rathod	BSC III	✓	7499219462	Rathod
40)	Sejal Thakare	BSC III	✓	7768956527	Thakare
41)	Divya Shende	BSC III	✓	9922576152	Shende
42)	Shrutika Patil	–11–	✓	9527147032	S.patil
43)	Anuksha Londe	–11–	✓	9529034557	A.londe
44)	Kanta Belsare	–11–	✓	7498619275	Belsare
45)	Pooja Gawande		✓	9022700221	Gawande
46)	Dipali Gosode	–11–	✓	7249336046	[illegible]
47)	Shraddha Uike	–11–	✗	7385792790	[illegible]

continued

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Principal
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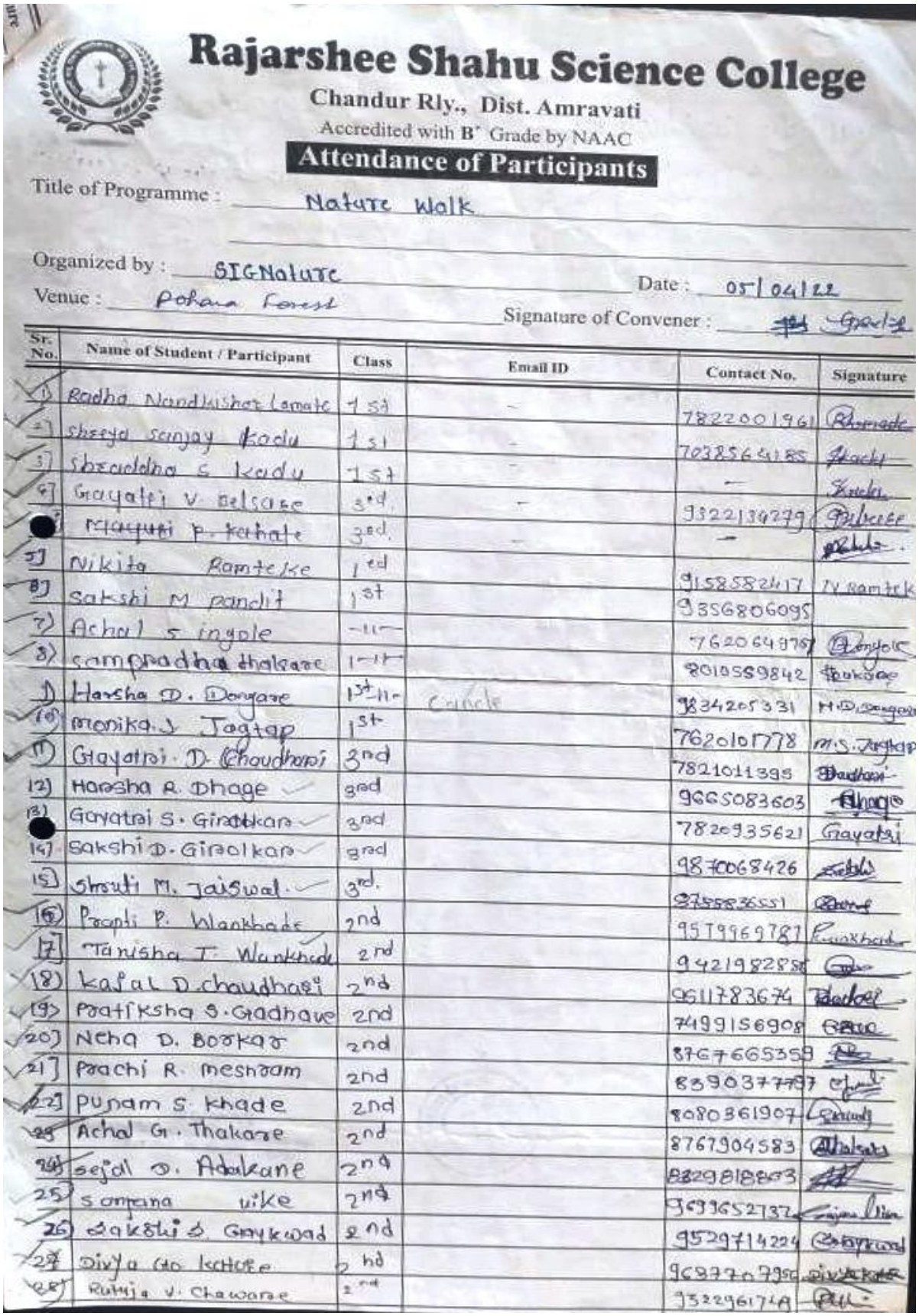

Rajarshee Shahu Science College

Chandur Rly., Dist. Amravati

Accredited with B+ Grade by NAAC

Attendance of Participants

Title of Programme : Nature Walk

Organized by : SIGNature Date : 05/04/22

Venue : Pohara Forest Signature of Convener :

Sr. No.	Name of Student / Participant	Class	Email ID	Contact No.	Signature
1)	Radha Nandkishor Lomate	1 st	-	7822001961	
2)	Sheeya Sanjay Kadu	1 st	-	7038564185	
3)	Shraddha S Kadu	1 st	-	-	
4)	Gayatri V. Belsare	3rd	-	9322134279	
5)	Mayuri P. Kathate	3rd	-	-	
6)	Nikita Ramteke	1 ed		9158582417	N Ramtek
7)	Sakshi M pandit	1 st		9356806095	
8)	Achal S ingole	-11-		7620649787	
9)	sampradha thakare	1-11		8010559842	
10)	Harsha D. Dongare	1st-11-	Cancle	9834205331	H D Dongare
11)	Monika J Jagtap	1st		7620101778	M.S. Jagtap
12)	Gayatri D Choudhari	3rd		7821011395	
13)	Harsha R. Dhage	3rd		9665083603	
14)	Gayatri S. Giratkar	3rd		7820935621	Gayatri
15)	Sakshi D. Giraolkar	3rd		9870068426	
16)	Shruti M. Jaiswal	3rd.		8788836551	
17)	Pragati P. Wankhade	2nd		9579969781	
18)	Tanisha T. Wankhede	2nd		9421982858	
19)	Kajal D chaudhari	2nd		9511783674	
20)	Pratiksha S. Gadhave	2nd		7499156908	
21)	Neha D. Borkar	2nd		8767665358	
22)	Prachi R. Meshram	2nd		8390377787	
23)	Punam S. Khade	2nd		8080361907	
24)	Achal G. Thakare	2nd		8767904583	
25)	sejal D. Adalkane	2nd		8829818803	
26)	sampana vike	2nd		9699652737	
27)	Sakshi S. Gaykwad	2nd		9529714224	
28)	Divya Go Ikchore	2 nd		9689707956	
29)	Ruhija V. Chaware	2nd		9322961749	

No.	Name of Student / Participant	Class	Email ID	Contact No.	Signature
	Peatiksha Gaybhiye	BSC I	✓	9021004087	Peatibhiy
	Rujuta J. mohalle	BSC I	✓	8767181573	[illegible]
	Ritika Chimankar	B.SC I	✓	9356694598	Ritika
	Payal K. Wanjari	B.ScI	✓	9665507636	[illegible]
	Achal K. Wanjari	BSCI	✓	8055720837	[illegible]
	Nikita S. Jambwar	BSC I	✓	9356981382	[illegible]
	Renuka M. Dolas	BSC I	✓	8767509803	Dolas
	Achal A. Galak	BSC I	✓	9356977023	Galak
	Prachi S. Mundane	BSC I	✓	–	P Mudane
	Suhani Santosh Dixit	BSC I	Suhani.dixit@Gmail.com	7720819...	Suhani Dixit
39	Pooja Anilrao Gawande	BSC III	✓	9022700221	Gawande
40	Manisha R Dongre	B.Sc III		9022670502	M Dongre
41	Arati S. Ghatol	B.Sc II		7020121639	Ghatol
42	Vaishnavi N. kamble	B.Sc II		9356458965	Kamble
43	Komal D. mate	B.Sc II		9322932946	Mate
44	Radha ... Aikar	B.Sc III		9022271699	[illegible]
45	Anushka Gujar	-II-			Gujar
46	Kalyani Gawande	-II-			Gawande
47	Akanksha Gawai	-II-			Gawai
48	Pranjali Raut	-II-			Raut

47 + 48 = 95 Total Students attended for Nature walk at Pohara Forest

Convener 05/04/20..

IQAC Co-ordinator
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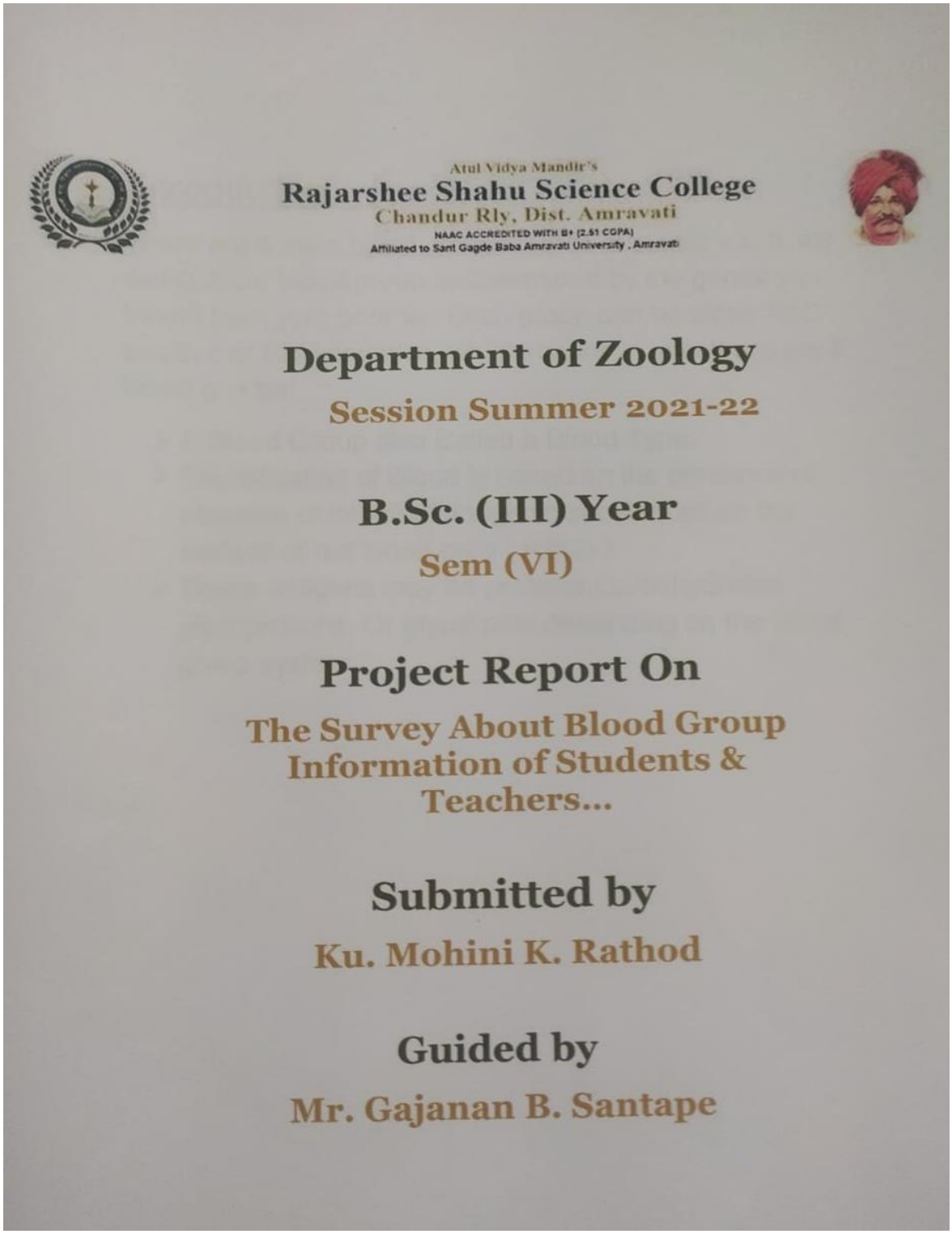
Chandur Rly., Dist. Amravati

Principal
Rajarshee Shahu Science College
Chandur Rly. Distt. Amravati

Project Work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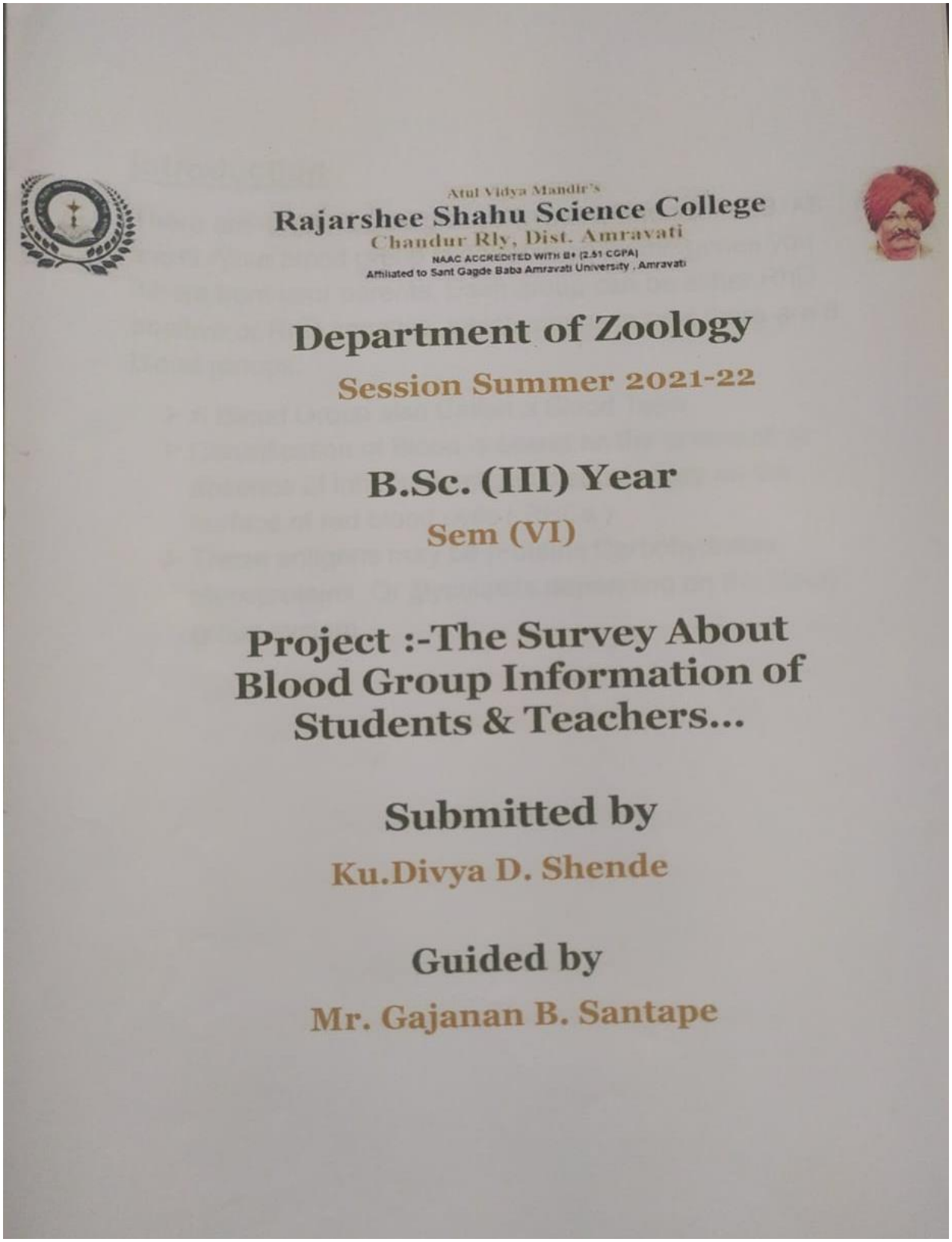
Department of Zoology
Session Summer 2021-22
B.Sc. (III) Year
Sem (VI)
Project Report On
The Survey About Blood Group Information of Students & Teachers...
Submitted by
Ku. Mohini K. Rathod
Guided by
Mr. Gajanan B. Santape



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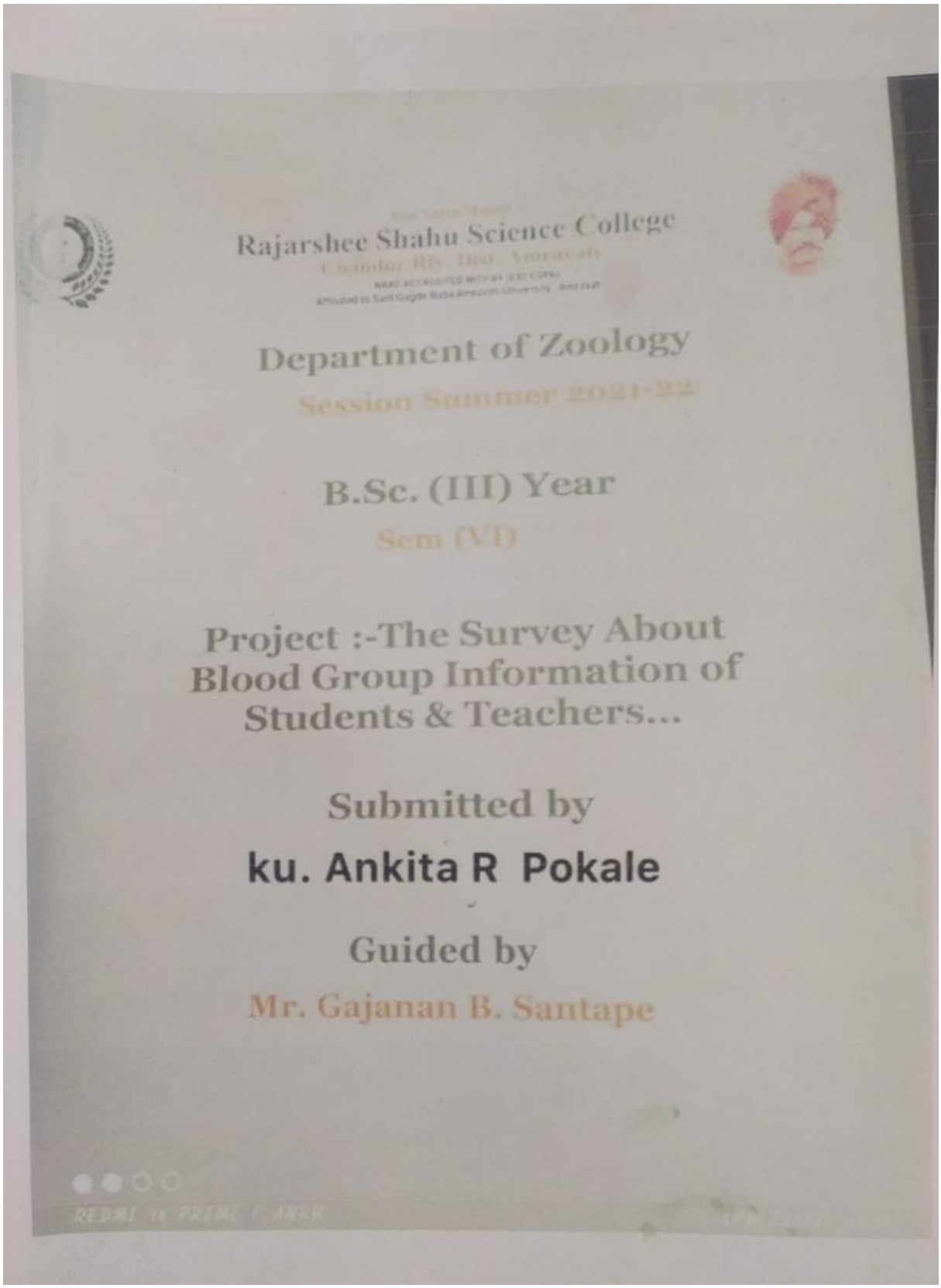
Project :-The Survey About Blood Group Information of Students & Teachers...

Submitted by

Ku.Divya D. Shende

Guided by

Mr. Gajanan B. Santape


Rajarshee Shahu Science College
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Project :-The Survey About Blood Group Information of Students & Teachers...
Submitted by
ku. Ankita R Pokale
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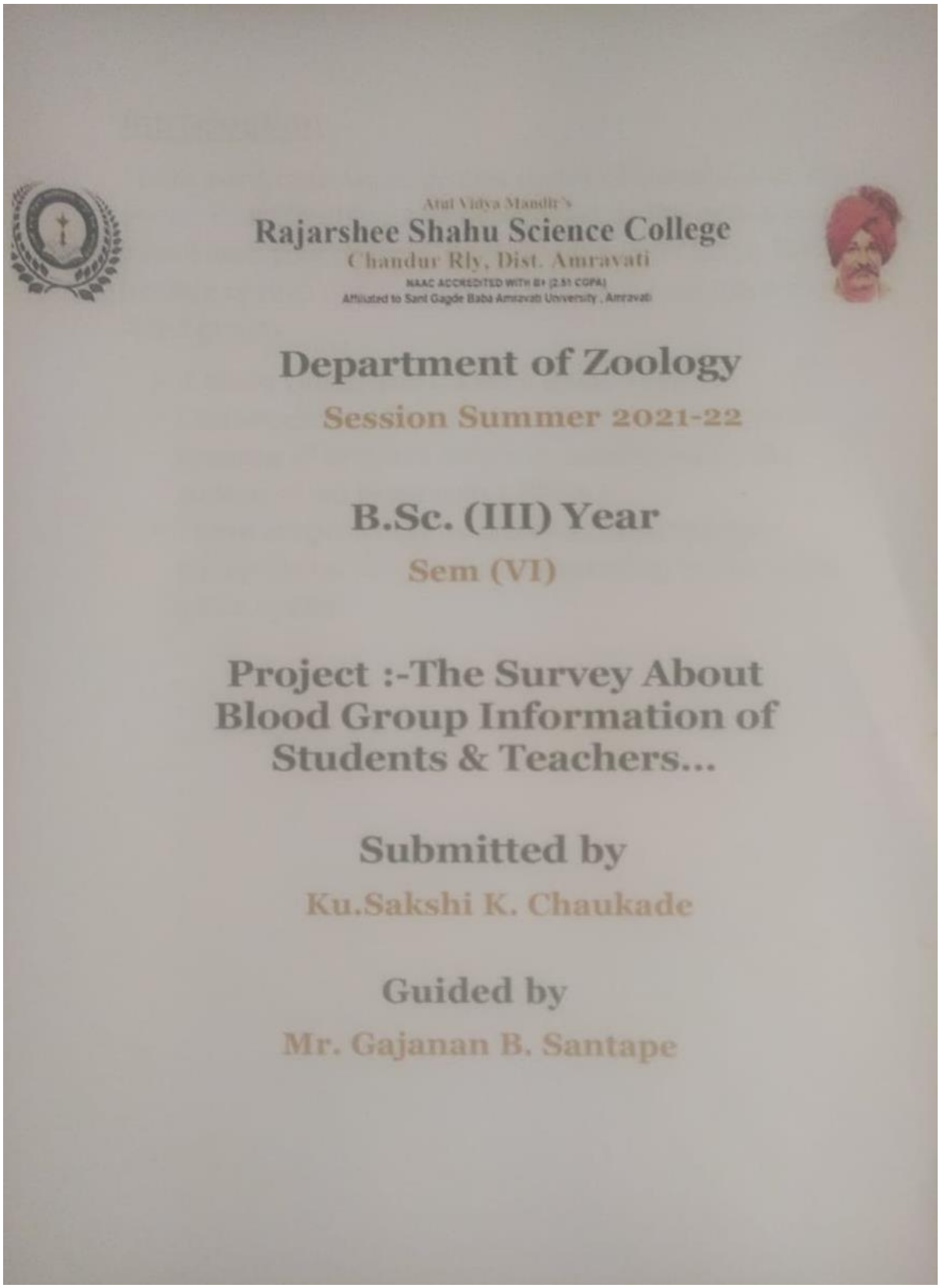

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Ku.Sakshi K. Chaukade

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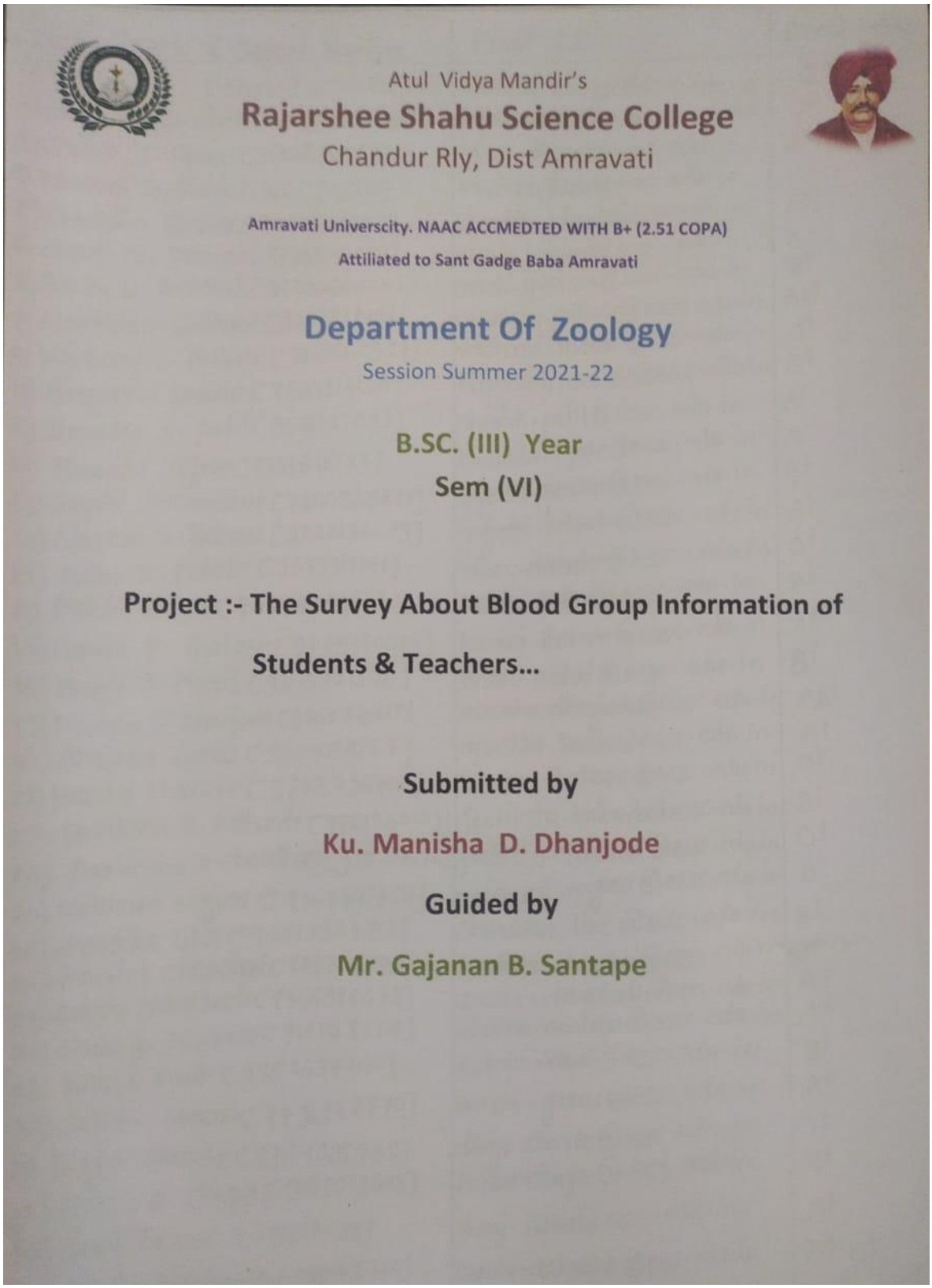

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Submitted by

Ku. Manisha D. Dhanjode

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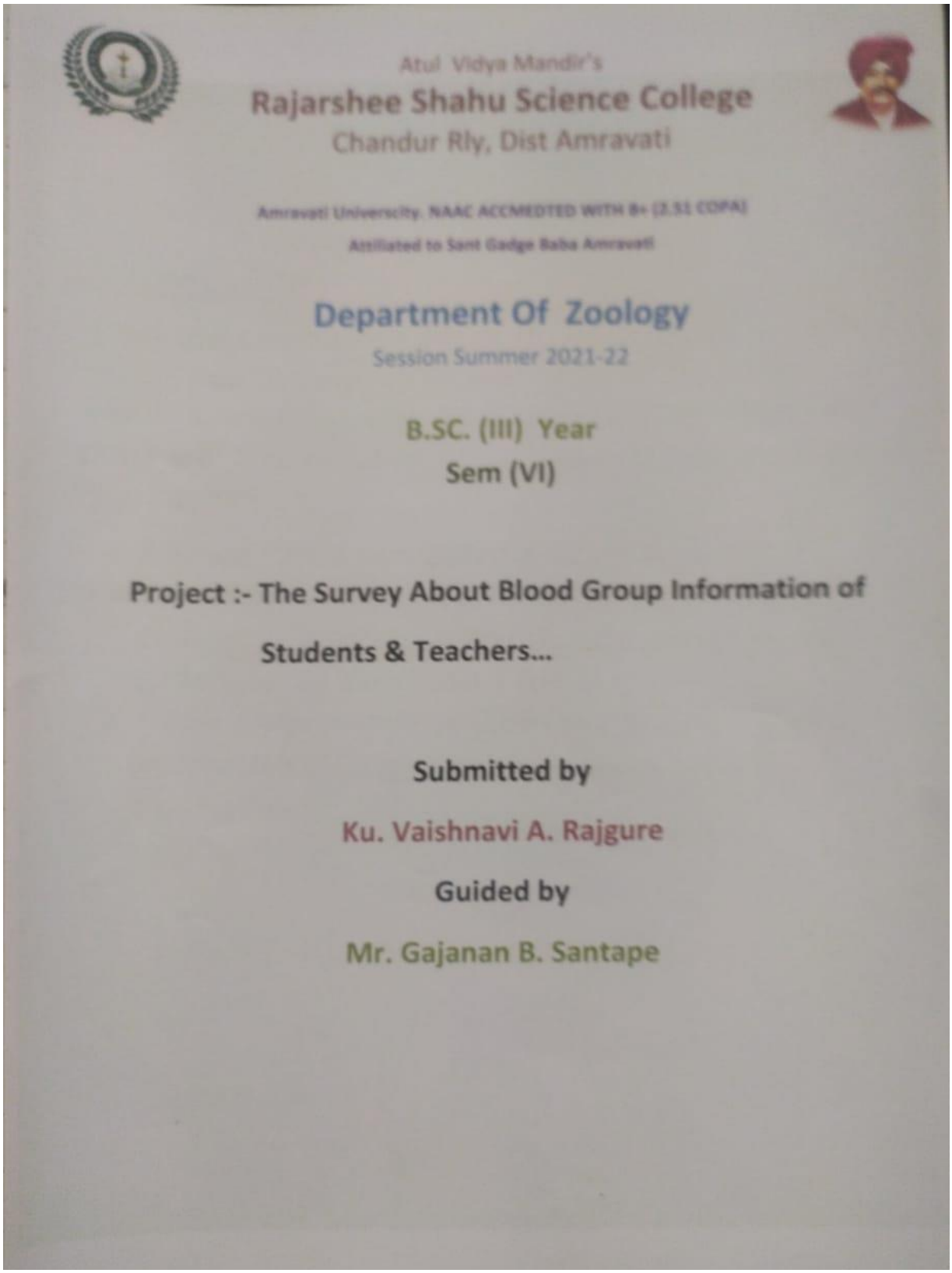

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Project :- The Survey About Blood Group Information of Students & Teachers...

Submitted by

Ku. Vaishnavi A. Rajgure

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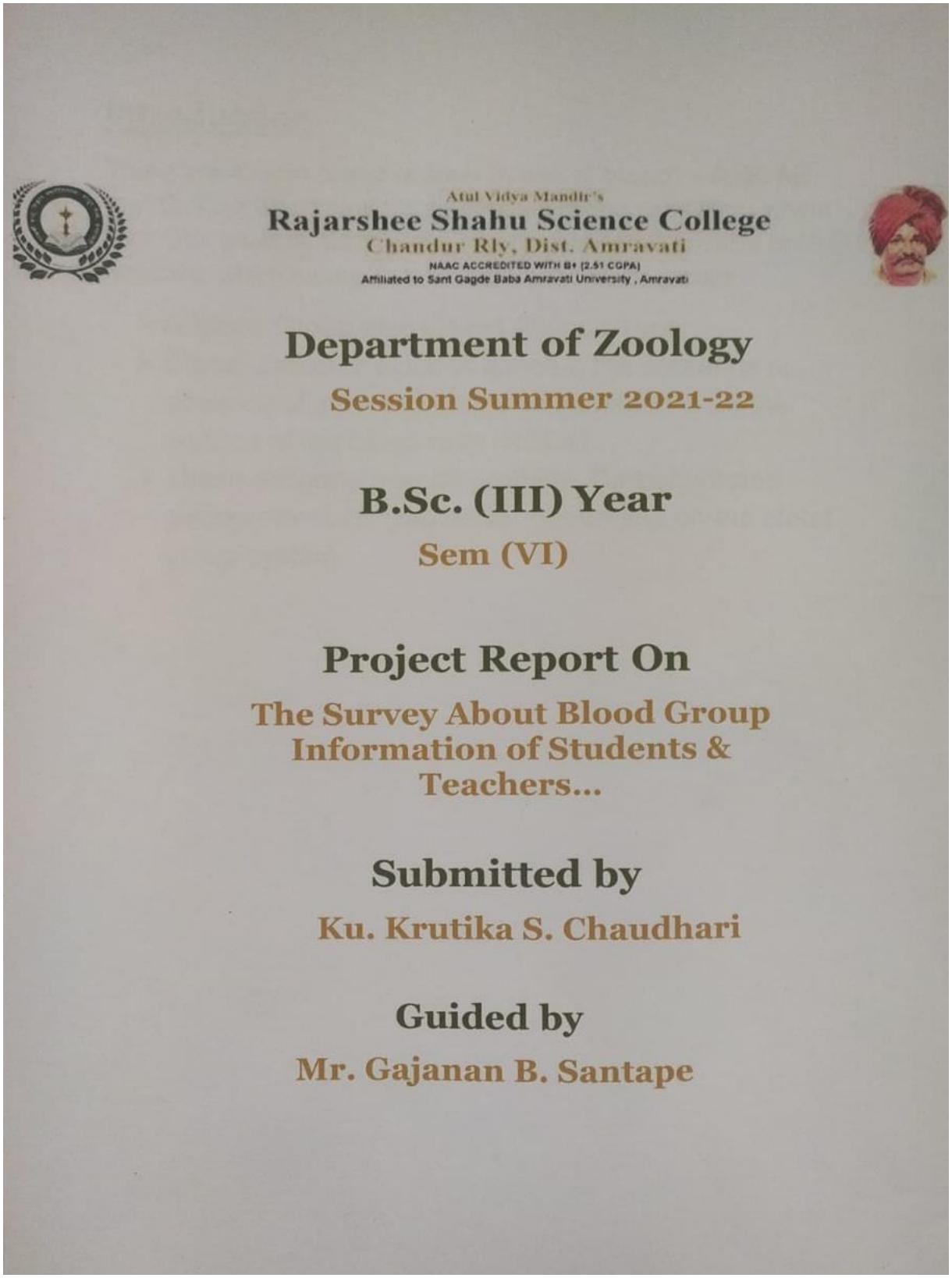
Mr. Gajanan B. Santape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Ku. Krutika S. Chaudhari
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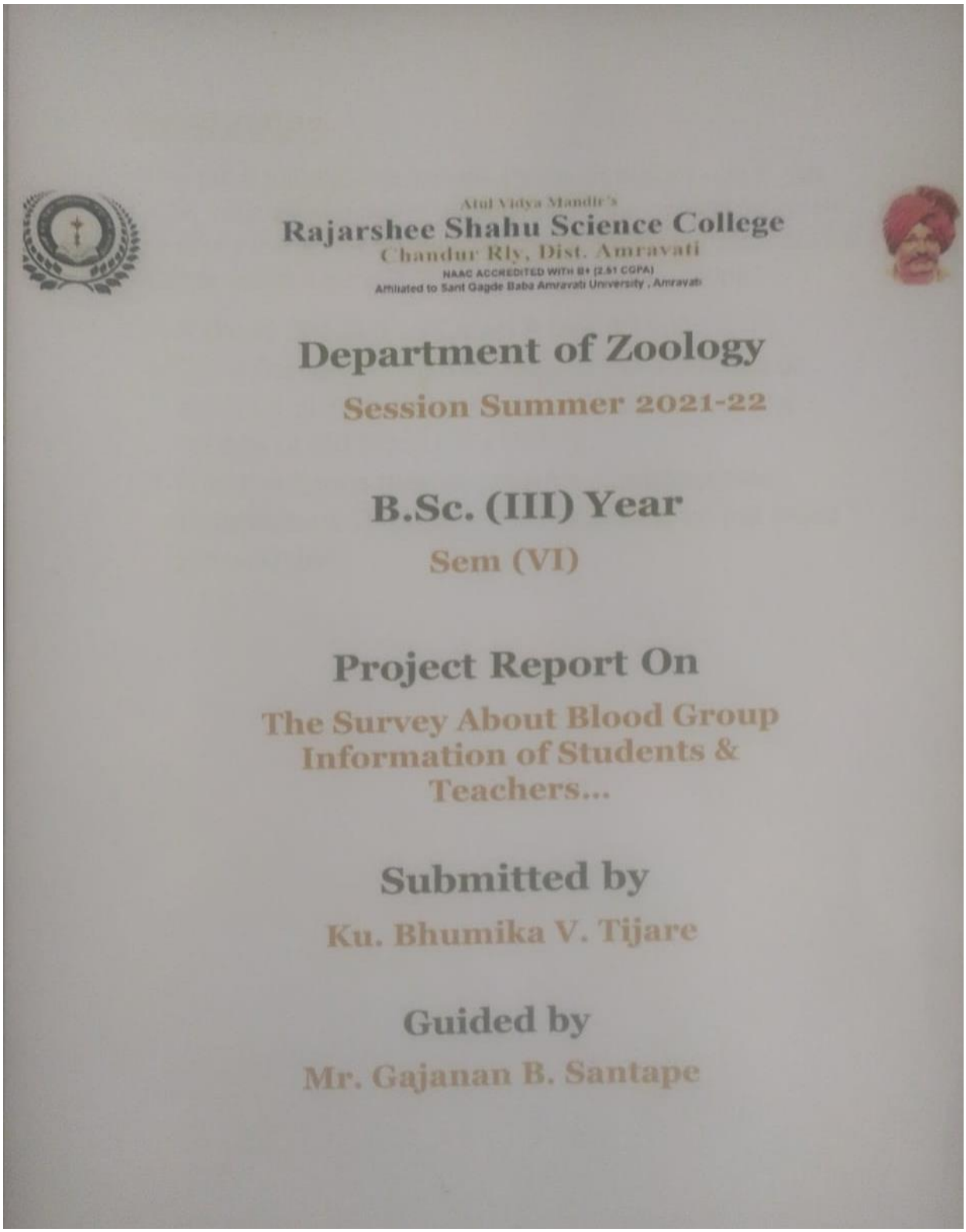
Mr. Gajanan B. Santape



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Submitted by

Ku. Bhumika V. Tijare

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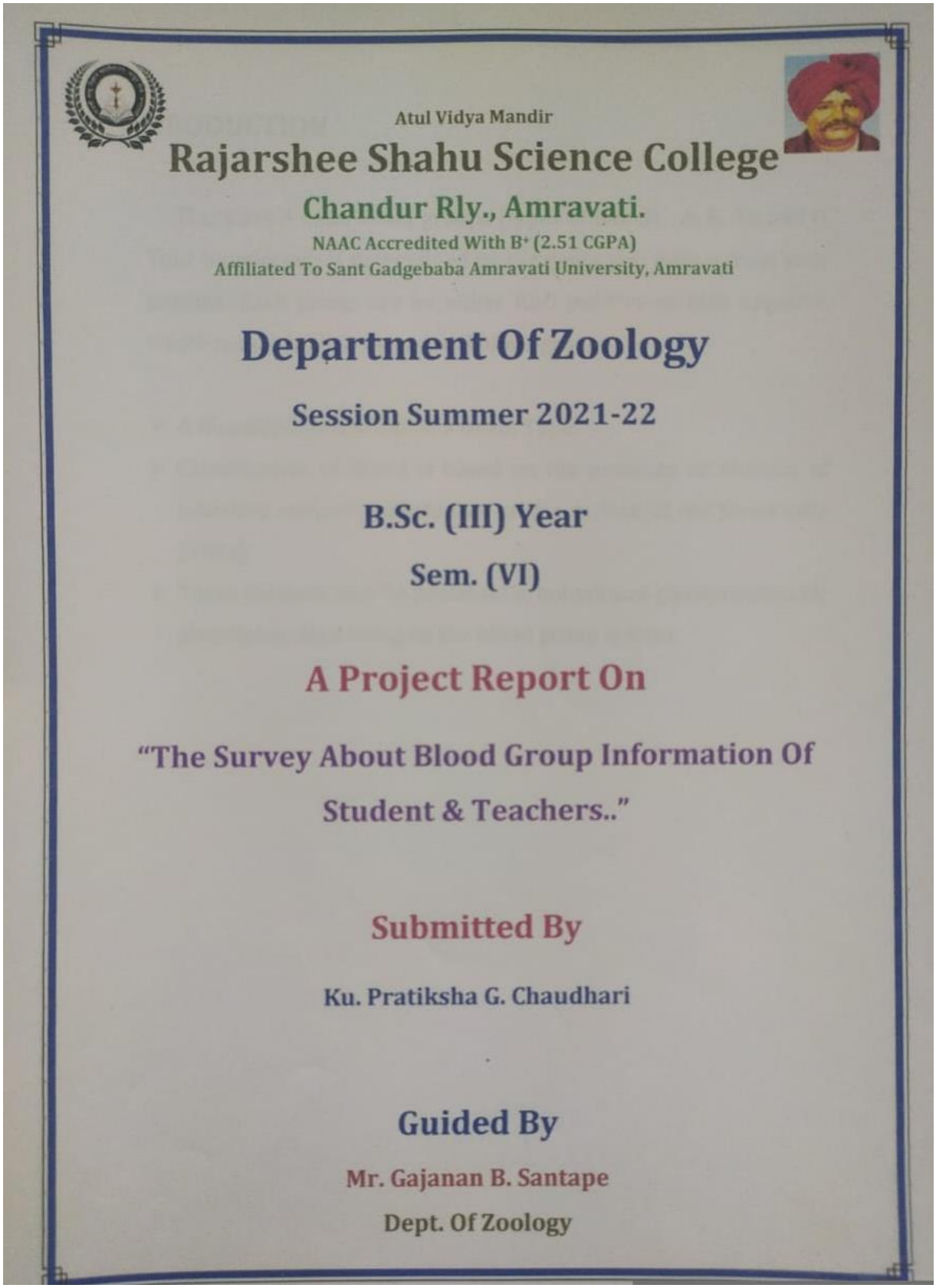

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A Project Report On

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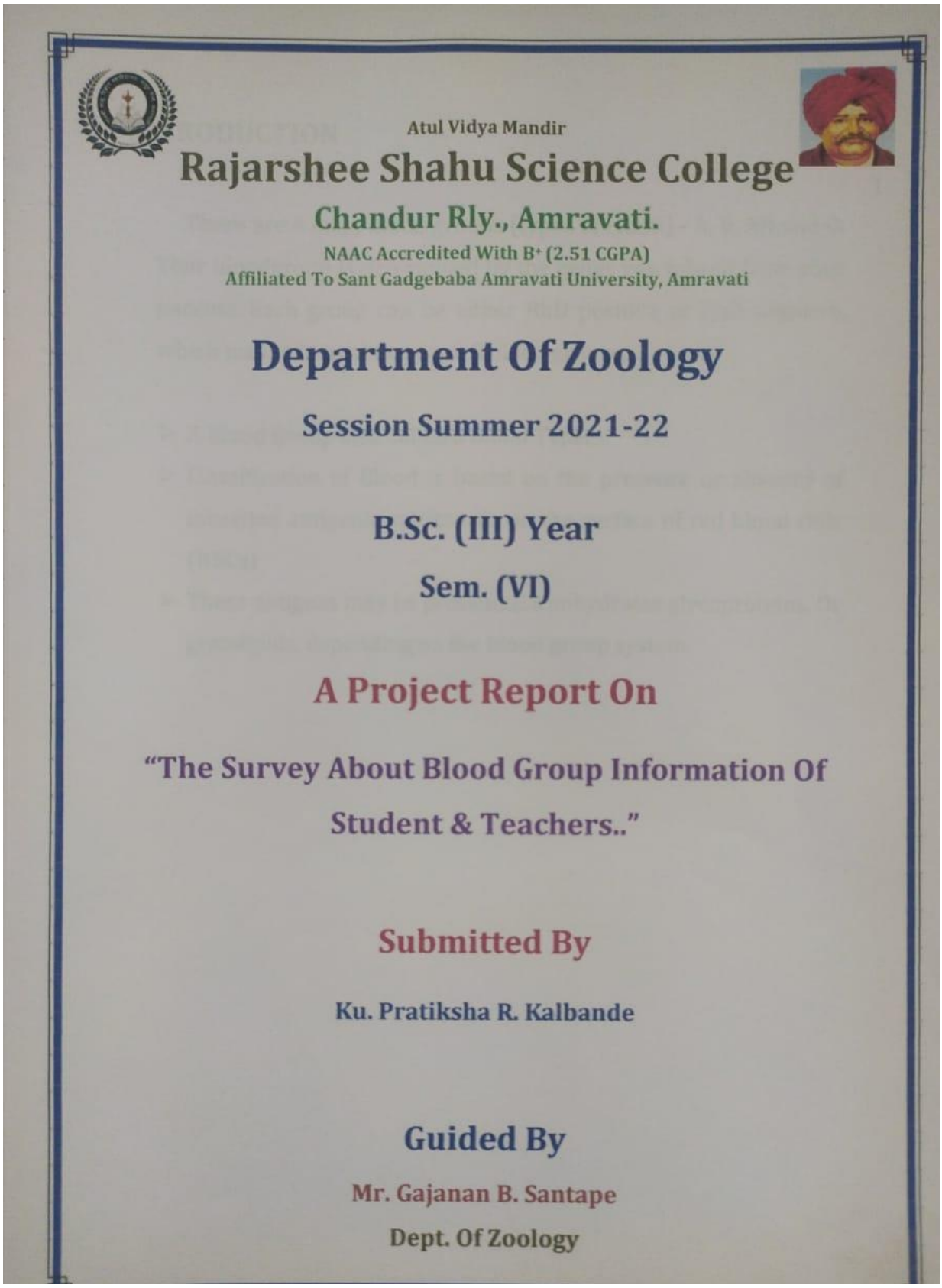
Submitted By

Ku. Pratiksha G. Chaudhari

Guided By

Mr. Gajanan B. Santape

Dept. Of Zoology



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Ku. Pratiksha R. Kalbande

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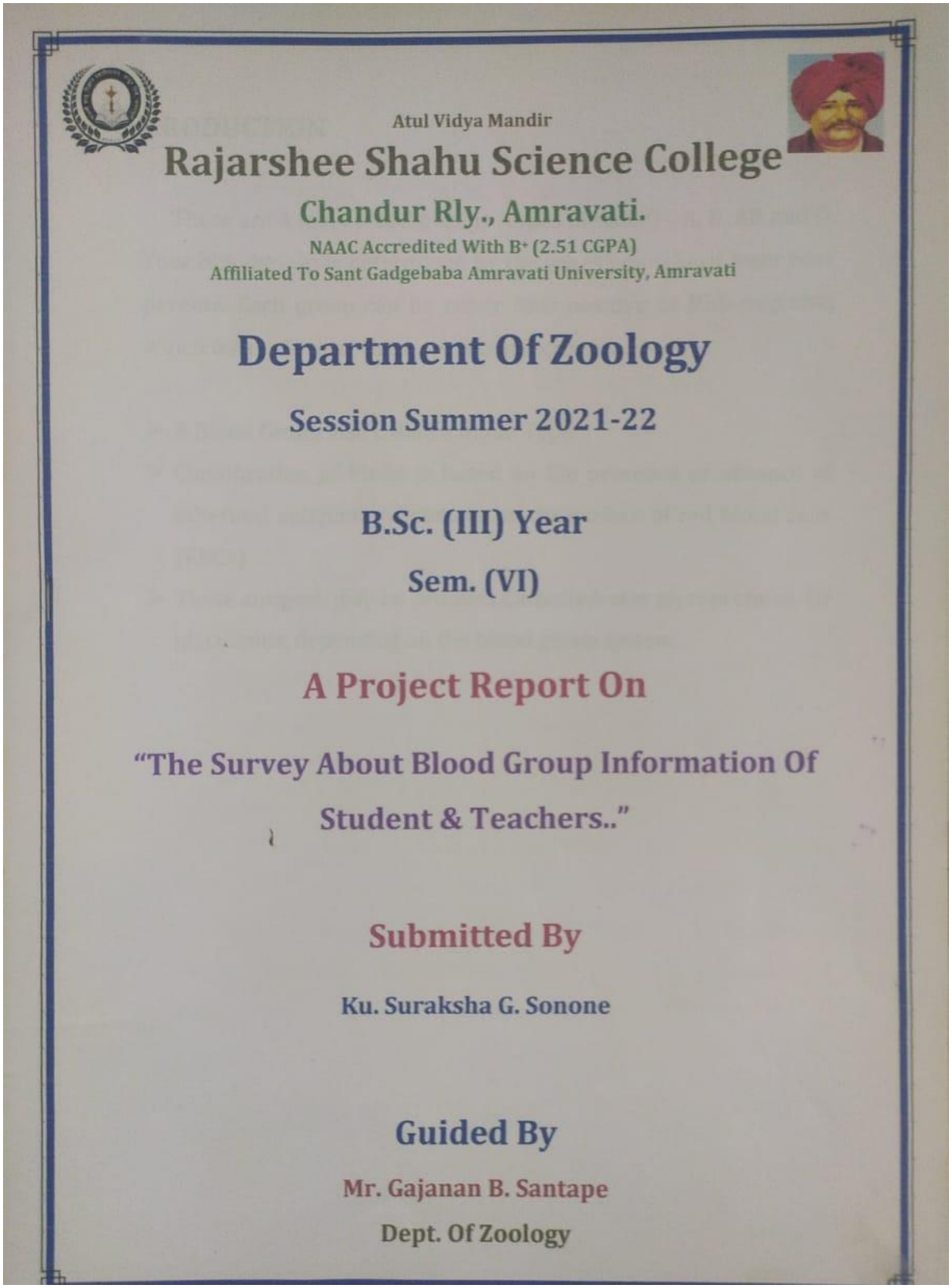

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Ku. Suraksha G. Sonone

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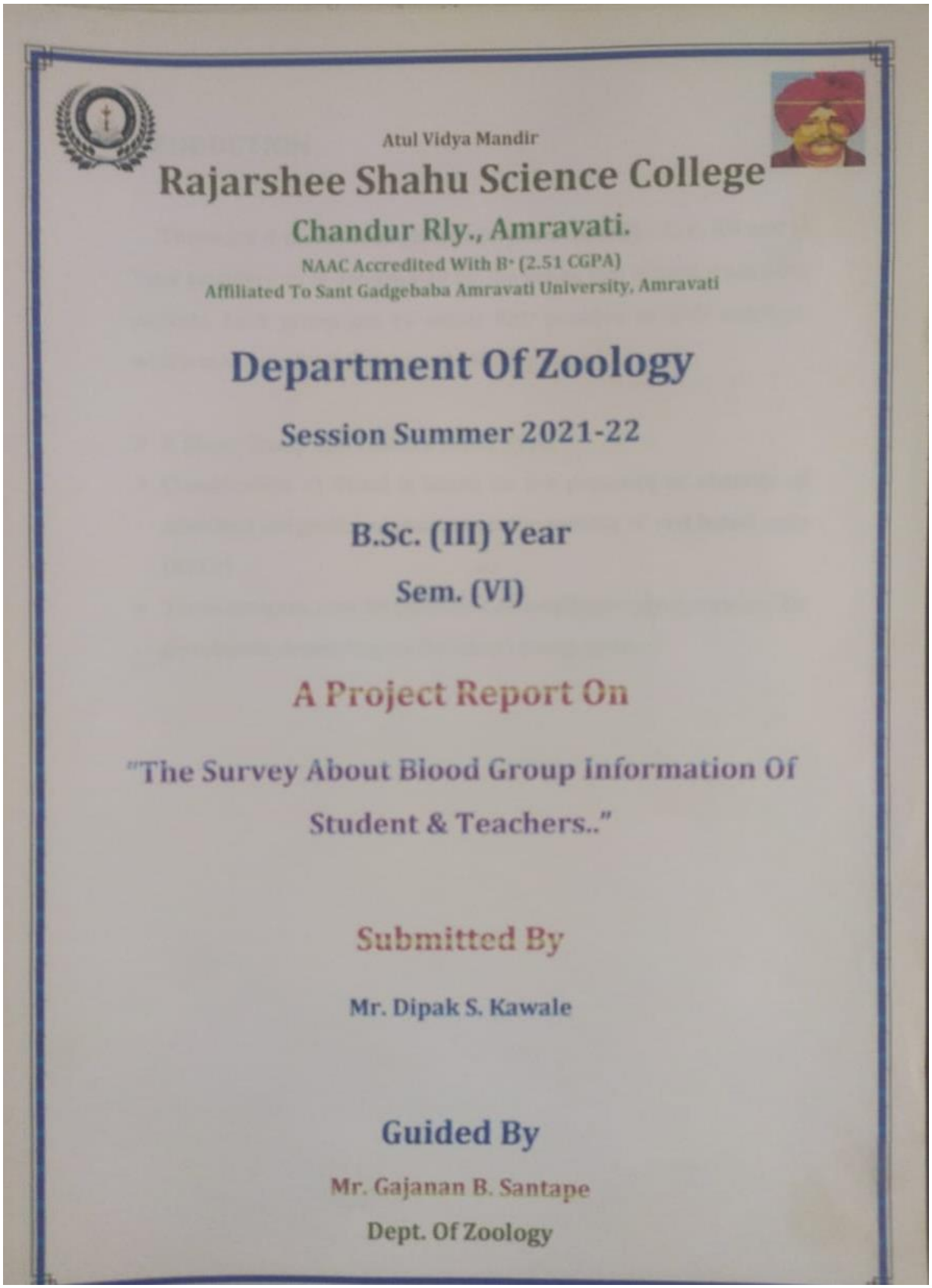

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Submitted By

Mr. Dipak S. Kawale

Guided By

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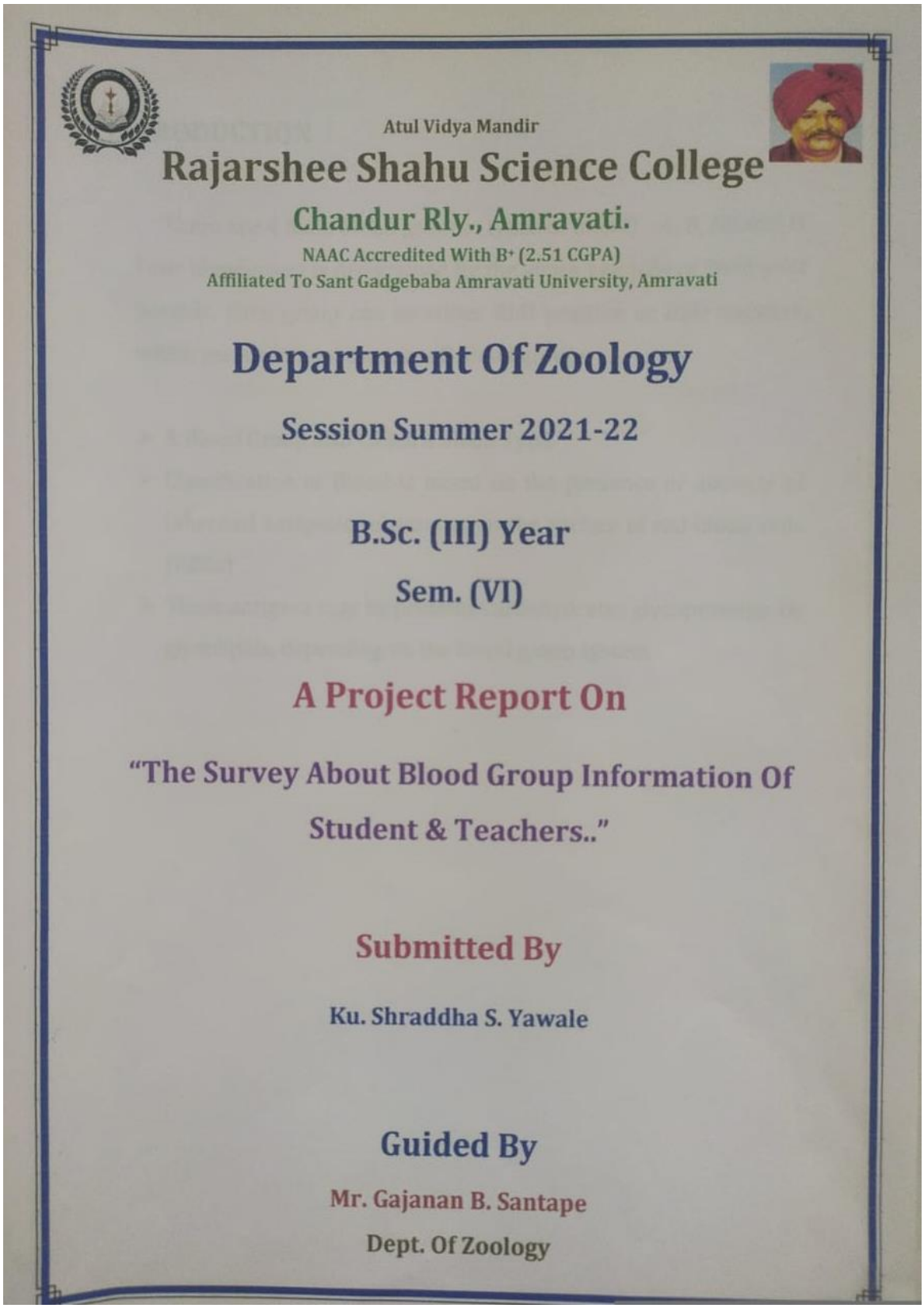
Dept. Of Zoology



Atul Vidya Mandir

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Department Of Zoology

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Sem. (VI)

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Submitted By

Ku. Shraddha S. Yawale

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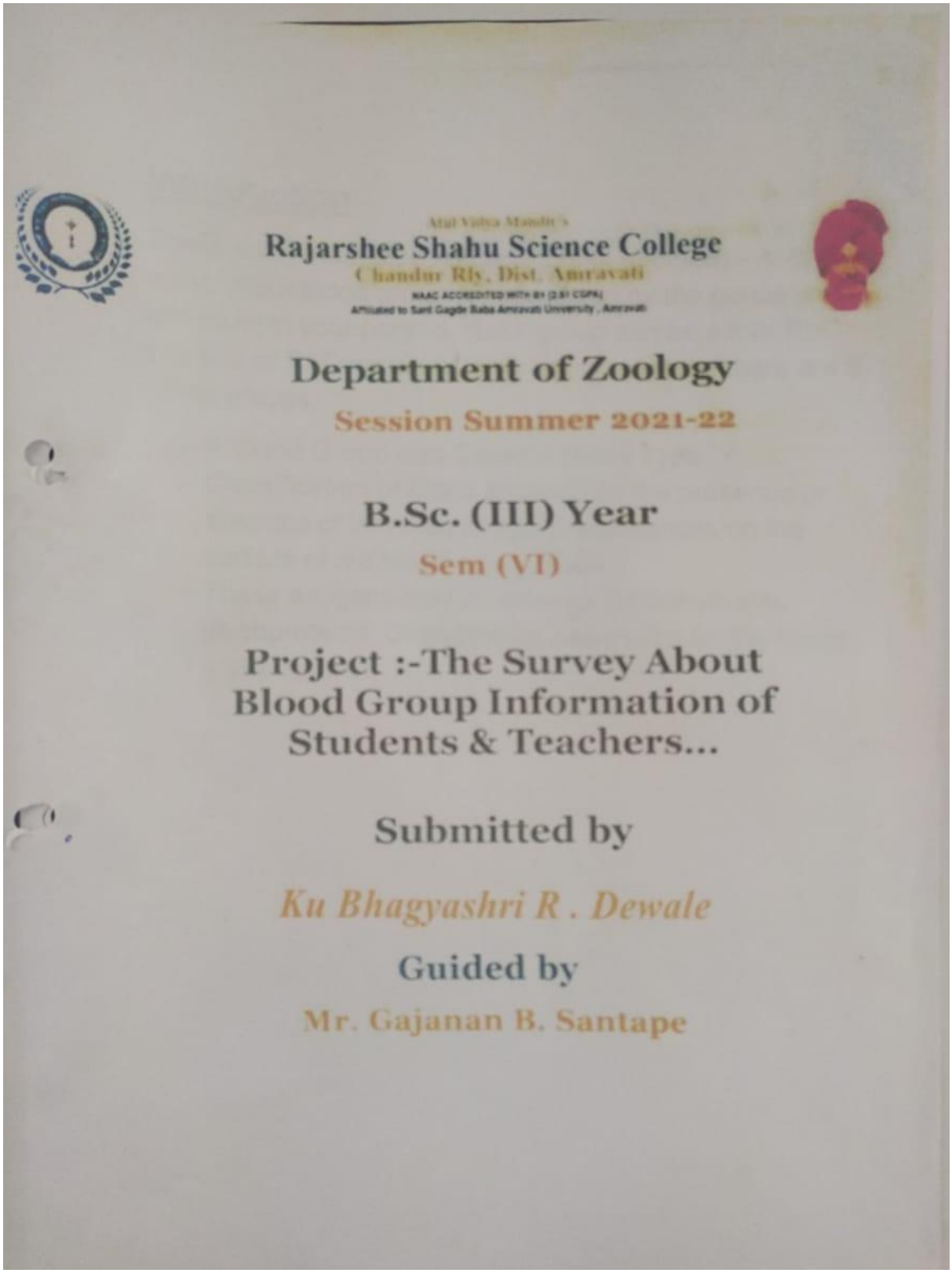

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Session Summer 2021-22

B.Sc. (III) Year

Sem (VI)

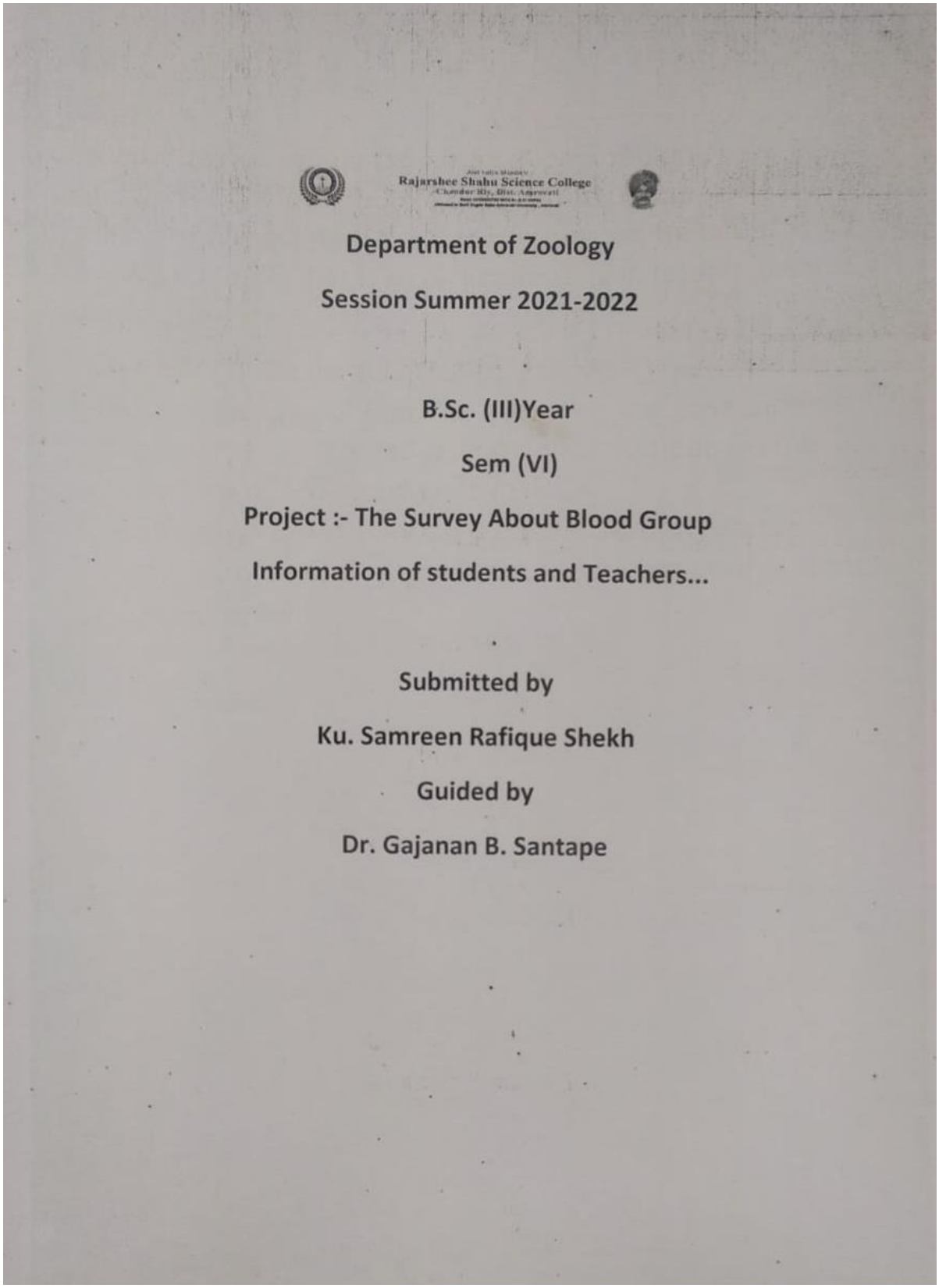
Project :-The Survey About Blood Group Information of Students & Teachers...

Submitted by

Ku Bhagyashri R . Dewale

Guided by

Mr. Gajanan B. Santape



Rajarshee Shahu Science College
Chandur Rly, Dist. Amravati

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Session Summer 2021-2022

B.Sc. (III)Year

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Project :- The Survey About Blood Group

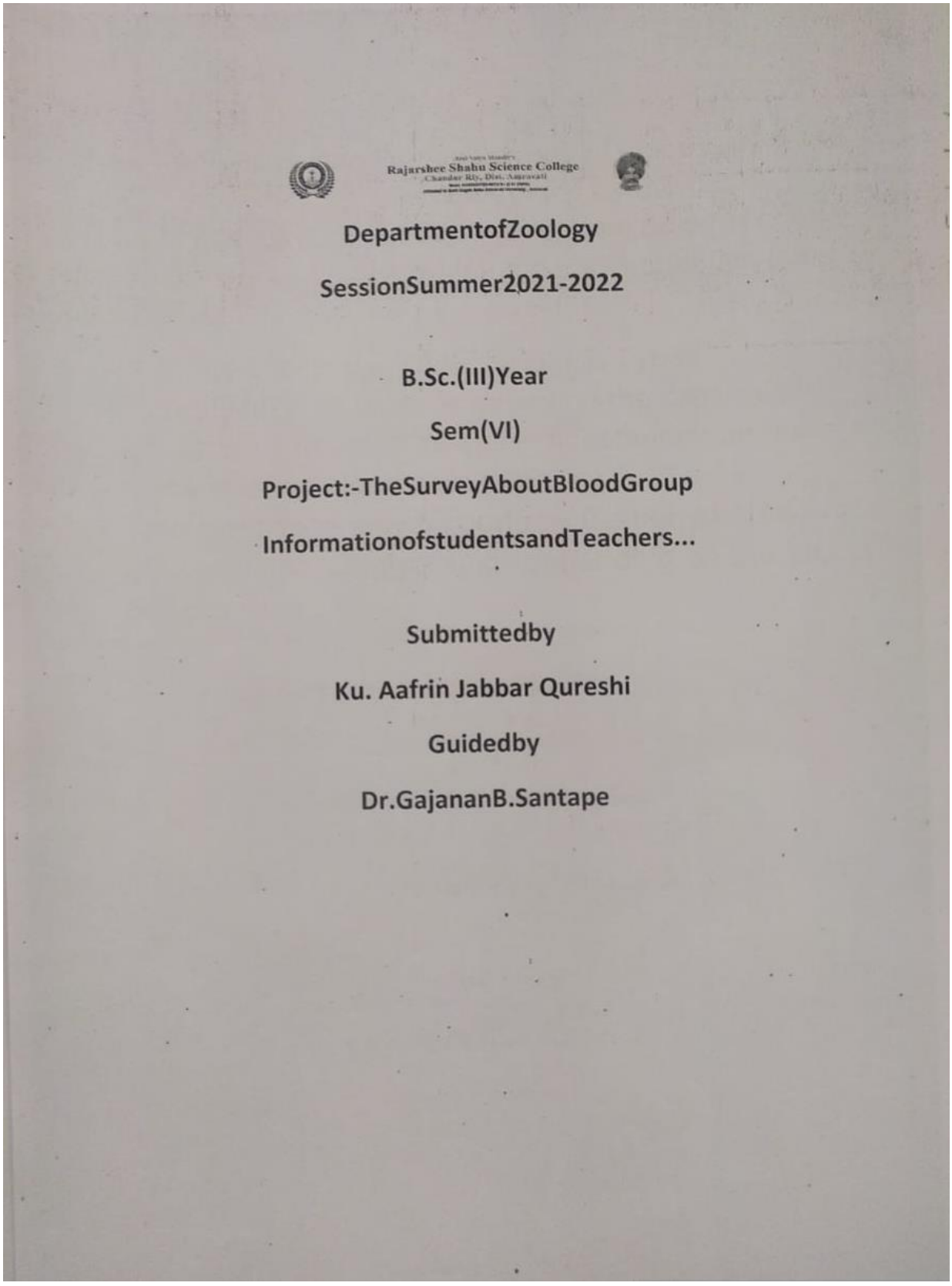
Information of students and Teachers...

Submitted by

Ku. Samreen Rafique Shekh

Guided by

Dr. Gajanan B. Santape



Rajarshee Shahu Science College
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DepartmentofZoology

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Project:-TheSurveyAboutBloodGroup

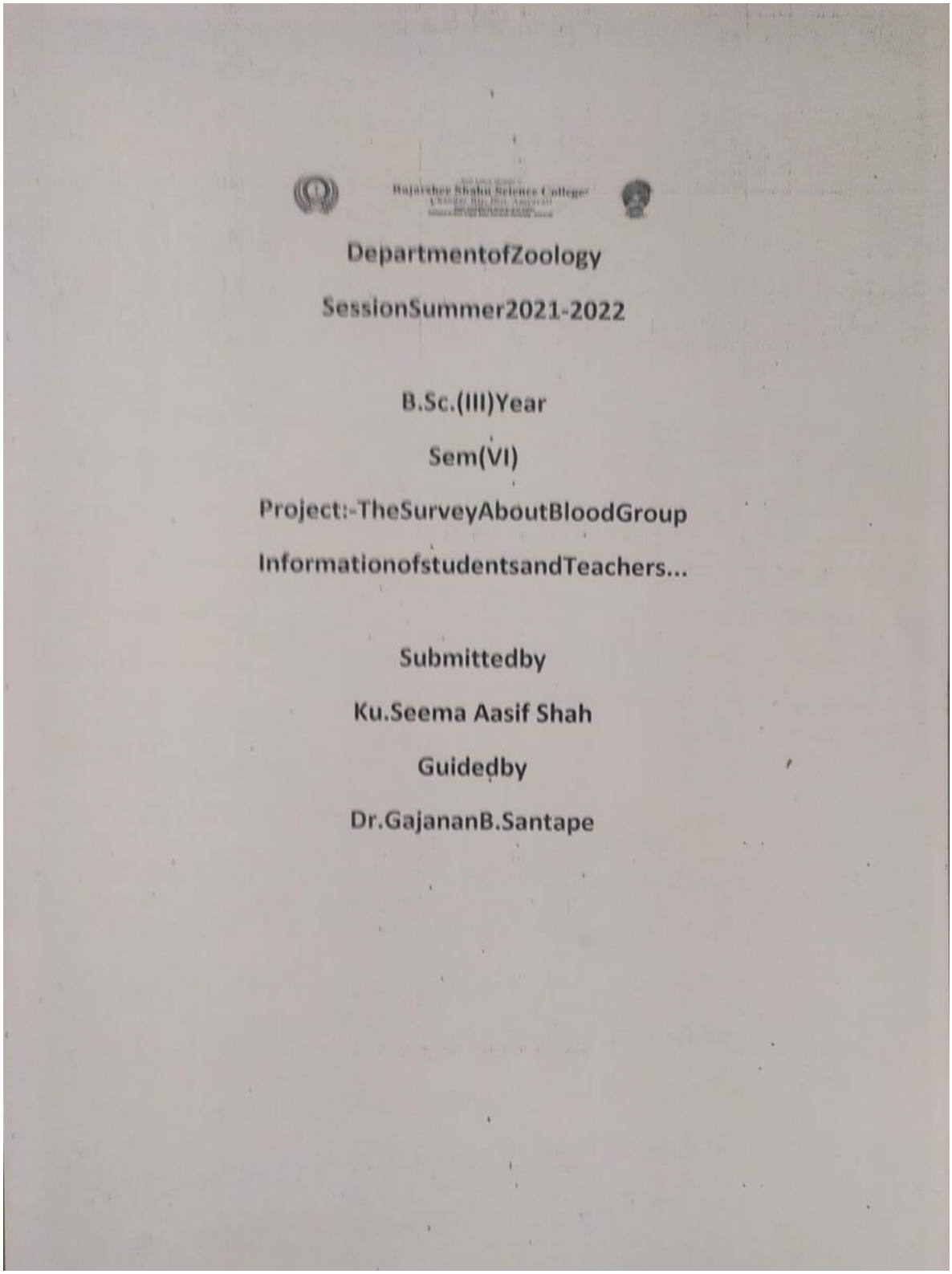
InformationofstudentsandTeachers...

Submittedby

Ku. Aafrin Jabbar Qureshi

Guidedby

Dr.GajananB.Santape



Rajarshee Shahu Science College

DepartmentofZoology

SessionSummer2021-2022

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Project:-TheSurveyAboutBloodGroup

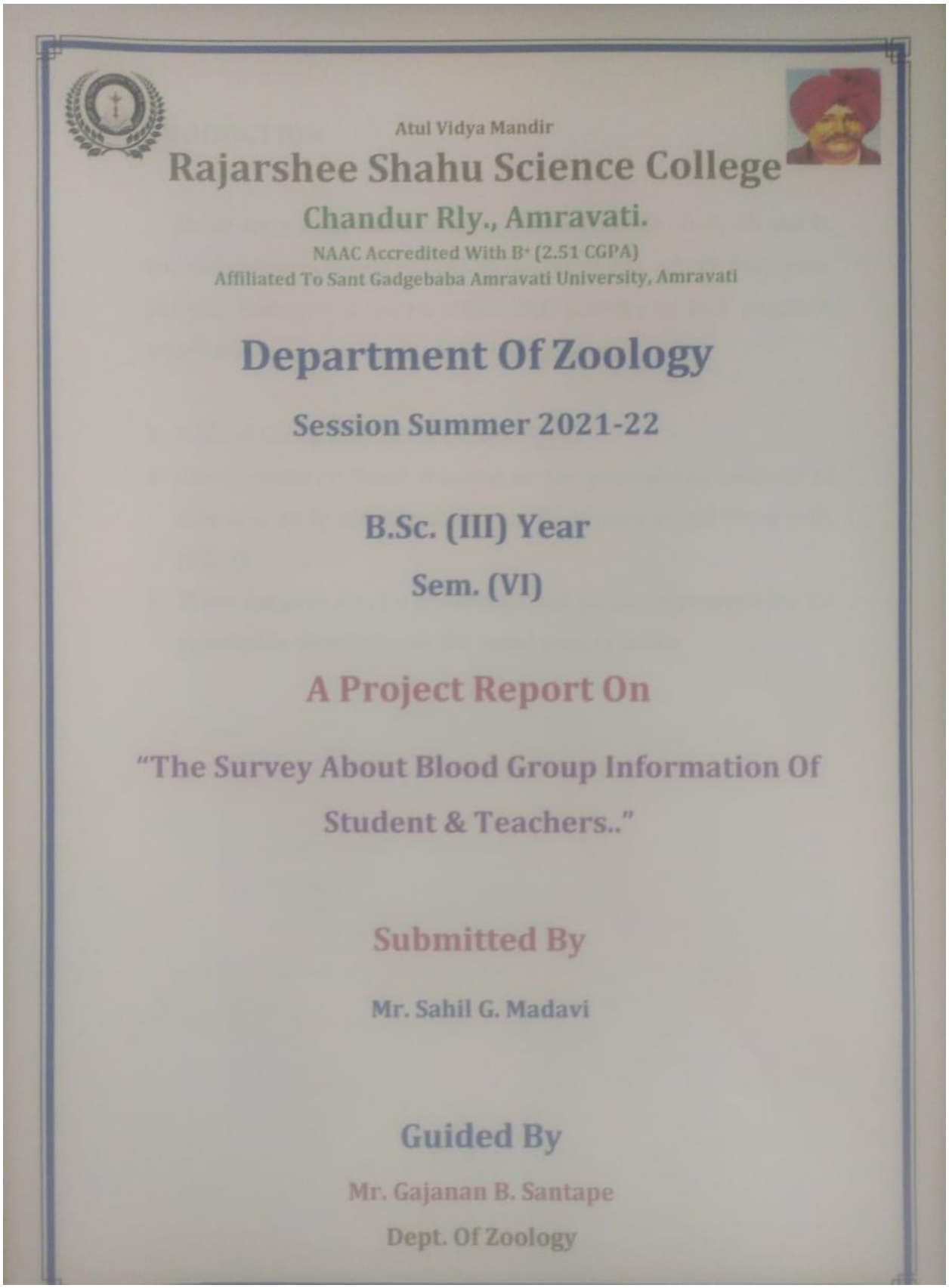
InformationofstudentsandTeachers...

Submittedby

Ku.Seema Aasif Shah

Guidedby

Dr.GajananB.Santape



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Department Of Zoology

Session Summer 2021-22

B.Sc. (III) Year

Sem. (VI)

A Project Report On

"The Survey About Blood Group Information Of Student & Teachers.."

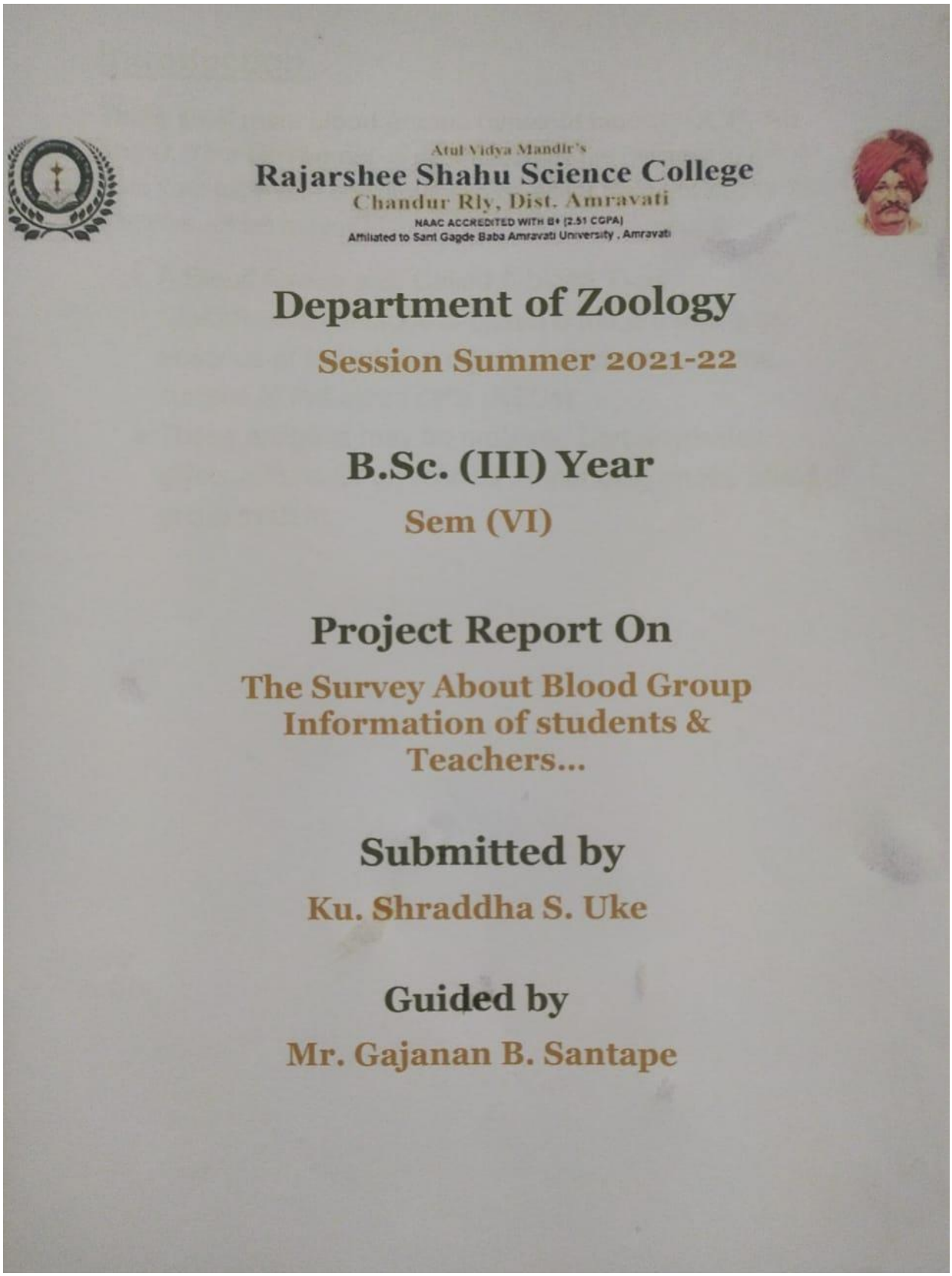
Submitted By

Mr. Sahil G. Madavi

Guided By

Mr. Gajanan B. Santape

Dept. Of Zoology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