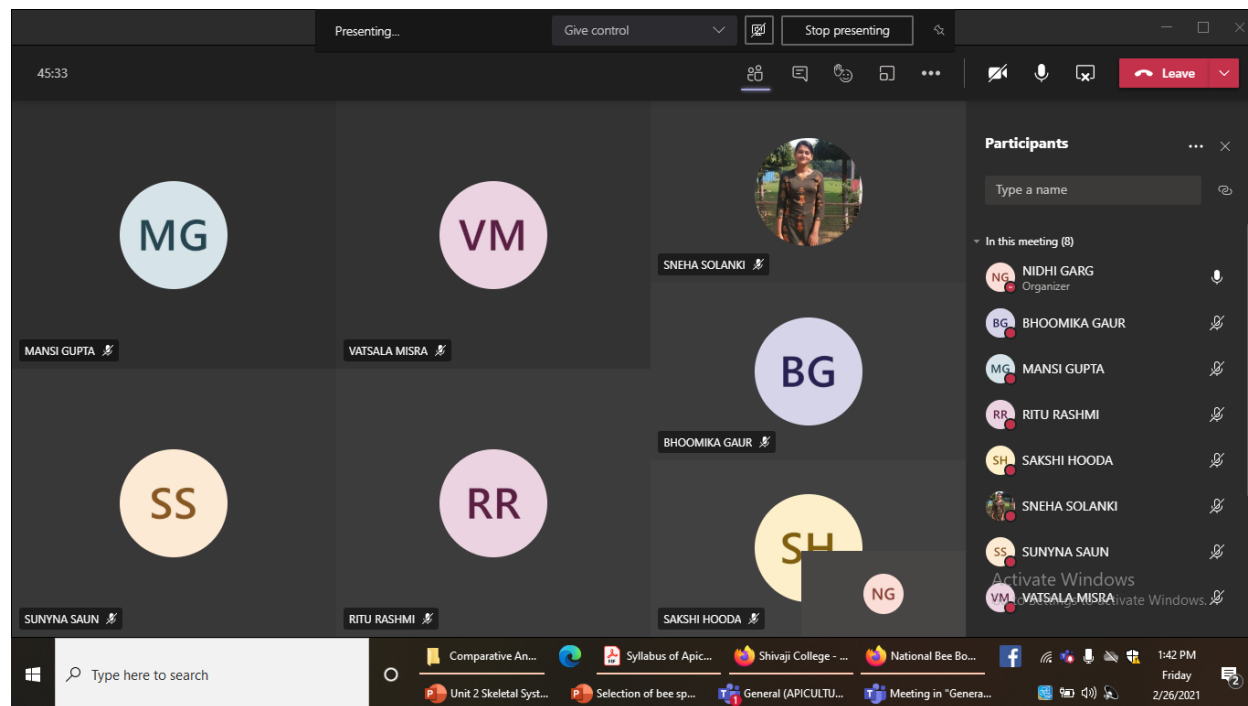


## Online Visit- Subject Apiculture

### SEC Practical Paper

An online visit of National Bee Board was done by the students of BSc Life Science (Semester VI) through MS Teams on 26.02.2021, as part of practical curriculum for the SEC paper Apiculture with Dr Nidhi Garg.



The online visit was attended by 7 students

1. Mansi Gupta (18/23160)
2. Vatsala Mishra (18/23141)
3. Sneha Solanki (18/23071)
4. Bhoomika Gaur (18/23)
5. Sunyna Saun (18/23110)
6. Ritu Rashmi (18/23114)
7. Sakshi Hooda (18/23130)

Attested by the Principal,  
Shivaji College (University of Delhi)


*Shivaji Solanki*

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Raja Garden, New Delhi-110027

APICULTURE INSTITUTE IN INDIA X Arya Gramodyog Sansthan, Beek... X Beekeeping - Dr. Rajendra Pras... X Beekeeping Training Centers; In... X National Bee Board X

https://nbb.gov.in

Home About Us Members Objectives Activities Contact Us NBHM




# NATIONAL BEE BOARD

सत्यमेव जयते

### Main Menu

- Governing Council
- Organizational Structure
- Memorandum of Association
- Advisory on Beekeeping
- Pests & Diseases of Honeybees & their Management
- Registered Beekeepers(State-Wise)
- Year-wise details of Fund Released to NBB
- Members NBB (State wise)
- State Correspondence
- Photo Gallery
- Registration
- New Initiative

### About Us



The Ministry of Agriculture & Farmers Welfare, Department of Agriculture Cooperation & Farmers Welfare, Govt. of India launched a Central Sector Scheme titled 'Development of Beekeeping for Improving Crop Productivity' during the VIII plan (1994-95). The scheme had various components covering R&D, production & distribution of honey, bee colonies, organizing trainings and awareness programmes and setting up honey processing plant, etc. A Beekeeping Development Cell was also functioning under the Chairpersonship of Secretary (A & C) to coordinate the Beekeeping activities.

Meeting in "General" 46:00

SH

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Comparativ... Syllabus of ... Shivaji Coll... National Be... Unit 2 Skele... Selection of bee sp... General (APICULTU... Meeting in "Genera... Microsoft Teams C...

1:43 PM  
Friday  
2/26/2021

Attested by the Principal,  
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*Shivaji S. S. S. S.*

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Raja Garden, New Delhi-110027

**B. A (Programme) I - ENVIRONMENTAL SCIENCE [72182801] - DR. ASHWANI SHARMA - ENVIRONMENTAL STUDIES - [IA-2020]**

S. No.	Roll Number	Student's Name	Total IAMaximum Marks25	Total IAMarks Obtained25
1	20/49001	SIDHANT PATHAK	25	19
2	20/49002	RITIKA SINGH	25	21
3	20/49004	LOVELY DHINGRA	25	18
4	20/49006	RAHUL BANSAL	25	20
5	20/49007	PRADYUMNA	25	19
6	20/49008	SHREYAN TEOTIA	25	20
7	20/49010	LAVKUSH SINGH	25	19
8	20/49011	UTKARSH RAI	25	20
9	20/49012	AKHIL KUMAR CHAUDHARY	25	20
10	20/49013	KHUSHI JOHAR	25	19
11	20/49014	MITALI SINGH	25	21
12	20/49015	ARYAN	25	22
13	20/49016	PREETI KUMARI	25	18
14	20/49017	KANISHK JAIN	25	17
15	20/49018	ISHIKA KASHYAP	25	18
16	20/49019	JIVANSHU NARANG	25	17
17	20/49021	SAMARTH CHAUHAN	25	19
18	20/49022	VANSH THAKRAN	25	18
19	20/49025	RUCHI YADAV	25	21
20	20/49026	YUKTA SHARMA	25	20
21	20/49029	KSHITIJ RANA	25	15
22	20/49031	HARSHITA MEENA	25	20
23	20/49032	SIMRAN	25	20
24	20/49033	ISHITA KAPOOR	25	18
25	20/49035	POOJA	25	19
26	20/49038	SADDAM HUSSAIN	25	18
27	20/49040	ANSH BHALLA	25	20
28	20/49042	AFJAL	25	18
29	20/49043	SHUBHAM	25	18
30	20/49045	SUMIT KUMAR	25	19
31	20/49047	MADHAV MEHRA	25	19
32	20/49049	GUNJAN GUPTA	25	20
33	20/49050	PRATYUSH MAHESHWARI	25	21
34	20/49052	APOORV VATS	25	0
35	20/49053	SAURABH TRIPATHI	25	18
36	20/49056	ANSHIKA PANDEY	25	21
37	20/49057	SONAM VERMA	25	21
38	20/49058	SHUBHI AGRAWAL	25	19
39	20/49059	PIYUSH PRESANTH	25	20
40	20/49060	ABHISHEK THREJA	25	18
41	20/49062	AMAN	25	19
42	20/49064	ANKIT SAHU	25	17
43	20/49065	ANJALI MISHRA	25	20

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Raja Garden, New Delhi-110027

S. No.	Roll Number	Student's Name	Total IAMaximum Marks25	Total IAMarks Obtained25
44	20/49066	KARTIK PATEL	25	19
45	20/49067	ANSHIKA	25	20
46	20/49068	SANJANA PARASHAR	25	21
47	20/49069	NITISH KUMAR	25	19
48	20/49070	RAHUL SHAH	25	0
49	20/49072	YASHBIR	25	18
50	20/49073	SHRUTI ROY	25	19
51	20/49075	HARSHIT GANWAL	25	19
52	20/49076	SHANTANU SINGH PALIWAL	25	17
53	20/49078	ROSHAN KUMAR	25	19
54	20/49079	OJASWI KUMAR GAUTAM	25	18
55	20/49080	RIYA SHAHI	25	19
56	20/49081	KARTIK	25	16
57	20/49082	UTKARSH UPADHYAY	25	19
58	20/49083	SIDDHARTH TIWARI	25	18
59	20/49084	AJIT SINGH BHATI	25	17
60	20/49085	MEGHNA SHRIVASTAVA	25	20
61	20/49086	APARNA KUMARI	25	21
62	20/49087	HARSH	25	18
63	20/49090	MOHHMAD FAIZ	25	19
64	20/49091	LOVE	25	19
65	20/49092	JANVI NARWAL	25	18
66	20/49093	ABHISHEK BISHNOI	25	18
67	20/49095	MANISHA SWAMI	25	19
68	20/49096	MUKESH KUMAR	25	20
69	20/49097	PRATHAM SHOKEEN	25	17
70	20/49098	PREETI	25	20
71	20/49099	RAJESH	25	20
72	20/49101	VISHAL CHAUDHARY	25	17
73	20/49102	VINEET KRISHNA	25	19
74	20/49103	NIDHI SIMALTI	25	20
75	20/49104	ABHISHEK	25	18
76	20/49105	NITIN GAHLOT	25	16
77	20/49106	VANSHIKA	25	20
78	20/49107	ONKAR SETHI	25	18
79	20/49108	ABHINAV	25	18
80	20/49109	VIKASH VATS	25	19
81	20/49111	PARAS KAUSHIK	25	18
82	20/49113	TANMAY SINGH	25	20
83	20/49114	YUVRAJ SINGH	25	20
84	20/49116	ANJALI RAJAWAT	25	21
85	20/49118	MANMEET SHOKEEN	25	19
86	20/49119	ADITYA SINGH CHAUHAN	25	20
87	20/49120	PRATI KSHA	25	20
88	20/49123	RUPAL MALIK	25	19
89	20/49124	JAID MOHD.	25	18

Attested by the Principal,  
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Raja Garden, New Delhi-110027



S. No.	Roll Number	Student's Name	Total IAMaximum Marks25	Total IAMarks Obtained25
90	20/49125	YUSUF AFTAB	25	19
91	20/49126	HITESH PAHAL	25	0
92	20/49127	VAISHALI KHARKWAL	25	19
93	20/49128	ANSHIKA SRIVASTAVA	25	22
94	20/49129	NEELANSH MISHRA	25	0
95	20/49130	SIDDHARTHA RAWAT	25	20
96	20/49132	VISHNU PANCHALING	25	19
97	20/49133	NIKHIL KUMAR	25	21
98	20/49134	AJAY	25	19
99	20/49136	SIMRAN	25	20
100	20/49137	BISHAL BHOUMICK	25	18
101	20/49138	AJIT KUMAR GURJAR	25	21
102	20/49139	HIMANSHU SIHAG	25	21
103	20/49140	KM SHRADHA	25	20
104	20/49143	RAHUL	25	17
105	20/49144	ABHINAV SHUKLA	25	19
106	20/49145	JATIN GHANGAS	25	18
107	20/49146	KRITIKA PANDEY	25	19
108	20/49149	AMAN JOSHI	25	20
109	20/49150	GUNJAN MISHRA	25	19
110	20/49151	KRITIKA CHAUHAN	25	20
111	20/49152	SHUBHAM	25	18
112	20/49153	DEVIKA	25	19
113	20/49158	HARSH PAL	25	19
114	20/49159	KHUSHI	25	20
115	20/49160	RAJAT PUNIA	25	17
116	20/49162	GAURAV SINGH	25	18
117	20/49166	SNEHASHI SUBIR BANERJEE	25	18
118	20/49167	MD AASIF	25	17
119	20/49168	DEEPANSHU THAKRAN	25	22
120	20/49169	MANKIT RANGA	25	19
121	20/49170	ADARSH KUMAR	25	18
122	20/49171	KOMAL YADAV	25	19
123	20/49172	ANURAG KAKKAR	25	20
124	20/49173	ROHIT CHAUHAN	25	18
125	20/49174	KARTIK	25	0
126	20/49175	DIKSHA SHARMA	25	18
127	20/49176	ADITYA GAUTAM	25	19
128	20/49177	ANMOL TOMAR	25	18
129	20/49178	AMANDEEP SINGH YADAV	25	0
130	20/49179	YUDIT MAAN	25	18
131	20/49180	SHREYANKI	25	19
132	20/49181	DEEPIKA DASS	25	21
133	20/49183	SUSHANT DAS	25	21
134	20/49184	KRISH GANDHI	25	17
135	20/49186	VAIBHAV KUMAR	25	17

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Raja Garden, New Delhi-110027

S. No.	Roll Number	Student's Name	Total IAMaximum Marks25	Total IAMarks Obtained25
136	20/49187	ADITYA PANDEY	25	19
137	20/49188	MURARI RANJAN	25	19
138	20/49189	RIYA SHARMA	25	21
139	20/49191	DRISHTANT	25	0
140	20/49196	TANU SHARMA	25	0
141	20/49197	BHRAMARI SINGH	25	0
142	20/49198	AARTI	25	0
143	20/49199	VAIBHAV KUMAR KUSHWAHA	25	0
144	20/49200	SAURAV DAHIYA	25	0
145	20/49201	ASHWANI CHAUDHARY	25	0
146	20/49202	ABHINAV DWIVEDI	25	0
147	20/49203	MUSKAAN JAIN	25	0
148	20/49206	CHIRAG KATYAL	25	0
149	20/49211	KAJAL SHARMA	25	0
150	20/49216	PRAJKTA	25	0
151	20/49217	DIPANSHU VATS	25	0
152	20/49219	YASH JAIN	25	0
153	20/49220	KANAV TYAGI	25	0
154	20/49221	SARA JAIN	25	0
155	20/49223	ANJALI DUHAN	25	0
156	20/49224	NIKHIL DHANKHAR	25	0
157	20/49228	ROHIT SINGH TOMAR	25	0
158	20/49229	ANKIT ANAND	25	0
159	20/49232	SHIVAM SHUKLA	25	0
160	20/49234	ADITYA	25	0
161	20/49235	TITIKSHA	25	0
162	20/49238	LAVISH KUMAR SINGH	25	0
163	20/49239	UTKARSH SINGH	25	0
164	20/49240	VIMAL KUMAR	25	0
165	20/49241	ROHIT YADAV	25	0
166	20/49242	HARSH BARKODIA	25	0
167	20/49243	STANZIN YANGDOL	25	0
168	20/49244	SHUBHAM	25	0
169	20/49245	ANUJ	25	0
170	20/49251	LALIT KUMAR	25	0
171	20/49255	RAJYASHORI LIMBU	25	0
172	20/49257	ABHISHEK KAWANT	25	0
173	20/49260	AKSHAY PRATAP SINGH	25	0
174	20/49262	ROHIT	25	0
175	20/49265	AFZAL	25	0
176	20/49266	PANKAJ SHARMA	25	0
177	20/49268	DEVRAJ	25	0
178	20/49269	VIVEK RAGHUWANSHI	25	0
179	20/49270	RAHUL	25	0
180	20/49271	ARJUN KUMAR	25	0
181	20/49274	HIMANSHU JHANGTA	25	0

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राजा गार्डन, नई दिल्ली-110027  
Raja Garden, New Delhi-110027

S. No.	Roll Number	Student's Name	Total IAMaximum Marks25	Total IAMarks Obtained25
182	20/49275	ANKITA	25	0
183	20/49276	RAHUL	25	0
184	20/49278	PRIYANKA	25	0
185	20/49279	NAVDEEP PAL	25	0
186	20/49281	LIKHA TANIA	25	0
187	20/49282	NAVDEEP KAUR	25	0
188	20/49285	SURYANSHI SALONI	25	0
189	20/49286	GULSHAN DUDI	25	0
190	20/49287	NIDHI YADAV	25	0
191	20/49288	ARPIT ARYA	25	0
192	20/49290	SHAURYA MALIK	25	0
193	20/49292	TAMANNA	25	0
194	20/49295	RITA	25	0
195	20/49296	MONU DHAKAR	25	0
196	20/49298	AMAN SRIVASTAVA	25	0
197	20/49299	MANISHA BARIYA	25	0
198	20/49301	NISHANT SHEOKAND	25	0
199	20/49306	NASEEB	25	0
200	20/49314	ABHIJEET	25	0
201	20/49315	SHRI RAM	25	0
202	20/49316	ASHOK SEERVI	25	0
203	20/49317	ANVAR DAYAL TA	25	0
204	20/49318	SHIVA ARYA	25	0
205	20/49320	RINKU SAINI	25	0
206	20/49321	SATYAM KUMAR	25	0
207	20/49322	DIVYANSHU CHAUHAN	25	0
208	20/49325	MADHU	25	0
209	20/49326	SIMRAN RATHI	25	0
210	20/49330	MOHAMMAD KAIF	25	0
211	20/49331	SANCHIT	25	0
212	20/49332	RAHUL	25	0
213	20/49333	SUBHASH KUMAR	25	0
214	20/49335	UMANG KHATRI	25	0
215	20/49336	KANISHKA SHARMA	25	0
216	20/49337	RAJVEER RAJ	25	0
217	20/49338	DEEPANSHU	25	0
218	20/49340	BRAJENDRA KUMAR DEEPAK	25	0
219	20/49341	NITIN YADAV	25	0
220	20/49342	VIJAY SINGH	25	0
221	20/49343	SHUBRATO PAUL	25	0
222	20/49344	AAKASH KUMAR	25	0
223	20/49345	LAKSHAY PAWARIA	25	0
224	20/49346	SHIVAM AGGARWAL	25	0
225	20/49348	AJIT ORAON	25	0
226	20/49349	PREET KAUR	25	0

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Raja Garden, New Delhi-110027

S. No.	Roll Number	Student's Name	Total IAMaximum Marks25	Total IAMarks Obtained25
227	20/49350	AMAN	25	0
228	20/49352	KAPISHA GAUTAM	25	0
229	20/49353	DEEPANSHU KHATRI	25	0
230	20/49354	YUVRAJ SINGH YADAV	25	0
231	20/49355	SHREYA SAHU	25	0
232	20/49356	PRAMOD KUSHWAHA	25	0
233	20/49359	SHUBHANKAR SHARMA	25	0
234	20/49360	BHARAT	25	0
235	20/49361	YOGESH YADAV	25	0
236	20/49364	BANTI	25	0
237	20/49367	AYUSH SINGH BHADORIA	25	0
238	20/49370	ATUL KUMAR	25	0
239	20/49371	AVINASH KUMAR	25	0
240	20/49372	SONAKSHI SINGH	25	0
241	20/49373	SANJEET	25	0
242	20/49374	RITU	25	0
243	20/49375	MANISH	25	0
244	20/49376	MD ARSHAD ALAM	25	0
245	20/49377	HARSH KUMAR	25	0
246	20/49378	HARSH KUMAR YADAV	25	0
247	20/49379	PALLAVI	25	0
248	20/49381	YUG	25	0
249	20/49383	VIKAS SAINI	25	0
250	20/49384	SHAHNAWAZ HASAN	25	0
251	20/49385	LOKESH PALSANIYA	25	0
252	20/49386	ABHISHEK KUMAR SAH	25	0
253	20/49387	HIMANSHI BHANDARI	25	0
254	20/49395	ZAHEER ABBAS	25	0
255	20/49397	HIMANSHU YADAV	25	0
256	20/49398	KOMAL	25	0
257	20/49399	ROHIT	25	0
258	20/49400	YASH	25	0
259	20/49402	MEHAK AGGARWAL	25	0
260	20/49403	MANISH KUMAR	25	0
261	20/49404	MD MUNNA ANSARI	25	0
262	20/49405	VIKASH NIGAM	25	0
263	20/49408	VISHAL SAMARIA	25	0
264	20/49409	JHANVI	25	0
265	20/49410	SHUBHANGI SHARMA	25	0
266	20/49412	ISHIKA	25	0
267	20/49415	KARUNA SHARMA	25	0
268	20/49416	PARTH SARTHI	25	0
269	20/49417	AAYUSH SUTHAR	25	0
270	20/49418	MUHAMMAD MUIN RABBANI	25	0
271	20/49421	JAHANVI BENSALA	25	0
272	20/49422	MAYANK PRIYA GAUTAM	25	0

Attested by the Principal,  
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Raja Garden, New Delhi-110027

S. No.	Roll Number	Student's Name	Total IAMaximum Marks25	Total IAMarks Obtained25
273	20/49423	KUMARI AARTI	25	0
274	20/49424	ADITYA DEBNATH	25	0
275	20/49425	SUSHMA MOURYA	25	0
276	20/49426	OM KUMAR	25	0
277	20/49427	KARAN YADAV	25	0
278	20/49428	HARSH KUMAR	25	0
279	20/49430	RAHUL YADAV	25	0
280	20/49431	DHARMENDER	25	0
281	20/49432	ROHIT KUMAR	25	0
282	20/49433	RAVINDER	25	0
283	20/49434	GAURAV VERMA	25	0
284	20/49435	SIMRAN	25	0
285	20/49437	HARSH KUMAR KASHYAP	25	0
286	20/49438	MUKESH KUMAR	25	0
287	20/49440	ANIKET VERMA	25	0
288	20/49443	MOHD SUHAIL	25	0
289	20/49445	KESHWARI	25	0
290	20/49446	ABHISHEK KUMAR	25	0
291	20/49447	GAURAV	25	0
292	20/49448	DEEPANSHU MEENA	25	0
293	20/49449	MOHIT	25	0
294	20/49450	UDIT	25	0
295	20/49451	GORAV DHANKHAR	25	0
296	20/49452	ANKIT KUMAR	25	0
297	20/49453	MUKUL KUMAR	25	0
298	20/49454	NEERAJ KUMAR	25	0
299	20/49455	SASKYONG PUNCHOK	25	0
300	20/49456	SAHIL	25	0



B. A. (Hons.) Business Economics I - ENVIRONMENTAL SCIENCE [72182801] - DR. VIRAT - ENVIRONMENTAL STUDIES - [IA-2020]

S. No.	Roll Number	Student's Name	Total IAMaximum Marks25	Total IAMarks Obtained25
1	20/2022	KARAN SINGH	25	23
2	20/2045	SHAURYA MEHTA	25	22
3	20/2063	AVINASH YADAV	25	21
4	20/2066	SAMEER KHAN	25	19
5	20/2075	HIMANSHU MAHOUR	25	23
6	20/2077	ROHIT KUMAR	25	15
7	20/2079	BHANU GOYAL	25	25
8	20/2081	GAURI YADAV	25	25
9	20/2084	GORANSH BHATIA	25	25
10	20/2085	SATYAM KUMAR	25	17
11	20/2087	TEFO KELVIN KGOSIMOKGALO	25	25
12	20/2089	SHIVAM KUMAR KAROTIYA	25	0
13	20/2091	VIVEK KUMAR	25	16
14	20/2093	PRERNA	25	24
15	20/2095	GAGANDEEP SINGH	25	25
16	20/2096	SHUBHAM GOYAL	25	20
17	20/2097	TANYA RANA	25	25
18	20/2099	JITESH KHOLIA	25	21
19	20/2101	SHIVAM KANOJIA	25	25
20	20/2102	VANSH BANSAL	25	24
21	20/2105	M RAMYA	25	25
22	20/2107	DHRUV KUMAR	25	23
23	20/2109	DEEPESH SINGH SAINI	25	25
24	20/2114	KAKAIRE ABUDALA	25	12
25	20/2115	ISHAAN PATEL	25	25
26	20/2117	SWANIT GOEL	25	24
27	20/2119	SAPNA VERMA	25	25
28	20/2120	GAGAN DEEP	25	24
29	20/2121	BHARGAVI	25	24
30	20/2123	KANISHAK	25	24
31	20/2124	GARIMA KALRA	25	25
32	20/2125	ALTAF AHMAD	25	18
33	20/2126	MANPREET SINGH	25	24
34	20/2127	TANISHQ BANSAL	25	0
35	20/2128	MANISH GARG	25	21
36	20/2130	SAHIL	25	21
37	20/2131	ANIKET PRASAD	25	22
38	20/2133	BHAVYA SAINI	25	25
39	20/2134	LOVISH JINDAL	25	21
40	20/2135	PRANAY WADHWA	25	24
41	20/2136	ARSH GIRDHAR	25	22
42	20/2138	SIDDHARTH KAUSHIK	25	25
43	20/2140	IRFAN AKBAR	25	21
44	20/2144	ANISH GUPTA	25	21
45	20/2146	MUBASSHIR RAHMAN	25	24
46	20/2148	YASH KUMAR	25	16
47	20/2150	MAYANK	25	18
48	20/2152	ISHABH RAJPAL	25	25
49	20/2156	MOHAMMED FAISAL	25	24
50	20/2158	SONIT THAKUR	25	25
51	20/2159	PRANSHU KUMAR	25	24
52	20/2161	ALLAM REDDY SHARATH CHANDRA REDDY	25	24
53	20/2162	SRIYANSH SRIVASTAVA	25	25
54	20/2163	RITIK SAINI	25	25
55	20/2164	MANAN BABUTA	25	25
56	20/2165	RIYA VERMA	25	25
57	20/2166	RISHI	25	19
58	20/2167	SHASHANK MALIK	25	24
59	20/2168	GAURAV POKHRIYAL	25	23
60	20/2169	VANSH KHANDELWAL	25	24
61	20/2170	PIYUSH SINGHAL	25	25

Attested by the Principal,  
Shivaji College (University of Delhi)

*Shivaji*

कार्यवाहक प्राध्यापक / Officiating Principal  
शिवजी महाविद्यालय / Shivaji College  
(दिल्ली विश्वविद्यालय) / (University of Delhi)  
राजा गार्डन, नई दिल्ली-110027  
Raja Garden, New Delhi-110027

62	20/2171	ANSHU YADAV	25	21
63	20/2173	JYOTIRMAY SIL	25	22
64	20/2174	DEVANSHU JAIN	25	24
65	20/2175	HARDIK GOLERIA	25	24

Attested by the Principal,  
Shivaji College (University of Delhi)

*Shivaji S. Datta*

कार्यवाहक प्राचार्य / Officiating Principal  
शिवजी महाविद्यालय / Shivaji College  
दिल्ली विश्वविद्यालय / (University of Delhi)  
राजा गार्डन, नई दिल्ली-110027  
Raja Garden, New Delhi-110027

**B. A. (Hons.) Economics II - ENVIRONMENTAL SCIENCE [72182801] - DR. ASHWANI SHARMA - ENVIRONMENTAL STUDIES - [IA-2020]**

S. No.	Roll Number	Student's Name	Total IAMaximum Marks25	Total IAMarks Obtained25
1	20/28002	VANSHITA BAJAJ	25	23
2	20/28010	PALAK UPADHYAY	25	23
3	20/28011	TANISHA GOYAL	25	23
4	20/28020	KESHAV KHAITAN	25	23
5	20/28022	DIVYAA GUPTA	25	23
6	20/28025	KHUSHI BHATIA	25	23
7	20/28030	SHAILY SENGAR	25	23
8	20/28047	RASHI KAUSHIK	25	23
9	20/28048	SHREYA MAHESHWARI	25	22
10	20/28058	MEHERANSHI VATS	25	23
11	20/28061	SALONI AGARWAL	25	23
12	20/28067	MOHAMMED ARIF SIYAN	25	23
13	20/28071	TENZIN YODEN	25	23
14	20/28077	ANSHUL KUMAR	25	23
15	20/28078	SAMEER JAISWAL	25	23
16	20/28079	AAMIR HAMID SHIEKH	25	23
17	20/28082	HIMANSHU NATH	25	23
18	20/28083	VINEET KUMAR	25	23
19	20/28084	NIPUN SHARMA	25	24
20	20/28085	MAHI GUPTA	25	23
21	20/28086	VAIDANT JAIN	25	23
22	20/28087	PRIYAL AGGARWAL	25	23
23	20/28088	VASU BANSAL	25	23
24	20/28089	RASHI GUPTA	25	23
25	20/28090	PARTH JAIN	25	23
26	20/28091	CHHAVI GOEL	25	23
27	20/28092	SRISHTI TALWAR	25	23
28	20/28093	ANSHIKA TANEJA	25	23
29	20/28094	ISHITA JAIN	25	23
30	20/28096	SRISHTY JINDAL	25	23
31	20/28097	DIVYANSHI PATHAK	25	24
32	20/28098	AKANKSHA SRIVASTAVA	25	23
33	20/28099	BHAVIKA	25	23
34	20/28100	SOMYA TOMAR	25	23
35	20/28102	DIKSHA DAHIYA	25	0
36	20/28103	PRIYANSHA CHAUDHARY	25	23
37	20/28104	RIYA UJJWAL	25	23
38	20/28105	LAKSH VERMA	25	23
39	20/28106	ARUSHI SEHRA	25	23
40	20/28107	DEVANSHI THAKUR	25	23
41	20/28108	ABHISHEK RAJ	25	23
42	20/28109	APARNA RANA	25	23
43	20/28111	KINSHUK TANEJA	25	23
44	20/28112	RAGHU RAJ	25	23

Attested by the Principal,  
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राजा गार्डन, नई दिल्ली-110027  
Raja Garden, New Delhi-110027

S. No.	Roll Number	Student's Name	Total IA Maximum Marks 25	Total IA Marks Obtained 25
45	20/28113	ISHANI NARANG	25	23
46	20/28114	ARSH NAYAK	25	23
47	20/28115	RAHUL	25	23
48	20/28118	SHUBH ARORA	25	23
49	20/28121	SHRIYA VOHRA	25	23
50	20/28124	TUSHAR SETHI	25	23
51	20/28126	SAHIL	25	23
52	20/28127	GUNJAN YADAV	25	23
53	20/28128	ADITYA MISHRA	25	23
54	20/28129	MANSI MISHRA	25	23

B. A. (Hons.) English II - ENVIRONMENTAL SCIENCE [72182801] - DR. VIRAT - ENVIRONMENTAL STUDIES - [IA-2020]

S. No.	Roll Number	Student's Name	Total IAMaximum Marks25	Total IAMarks Obtained25
1	20/29001	PRACHI	25	25
2	20/29003	PALAK SHARMA	25	24
3	20/29006	TANISHA CHAUHAN	25	25
4	20/29008	VANESSA AGGARWAL	25	24
5	20/29012	UJJAWAL	25	24
6	20/29014	AMAN ARYAN	25	25
7	20/29015	MOHIT KUMAR	25	23
8	20/29016	AMANJEET SINGH RAJAWAT	25	25
9	20/29017	SRISHTI TANEJA	25	25
10	20/29018	OSHIIN BHATIA	25	25
11	20/29019	SALONI GUPTA	25	25
12	20/29022	MEHAK GOGNA	25	23
13	20/29023	LATIKA DUDEJA	25	23
14	20/29028	KHUSHI MAHESHWARI	25	25
15	20/29030	SOUMYA - SHARMA	25	25
16	20/29031	VANSHITA BHARDWAJ	25	23
17	20/29033	KESHIKA MALIK	25	25
18	20/29034	HARSHIKA AGRAWAL	25	24
19	20/29037	MANAN ARORA	25	23
20	20/29038	MIHIRA ARORA	25	25
21	20/29041	NEHA KUMARI	25	25
22	20/29043	CHANCHAL	25	24
23	20/29044	SUSHAMA HALDER	25	23
24	20/29047	BHAVYA CHHABRA	25	24
25	20/29051	SONI	25	19
26	20/29052	MIHIR BAISLA	25	24
27	20/29054	RAM	25	24
28	20/29055	SOMBIR SINGH	25	22
29	20/29056	NIKHIL KUMAR	25	21
30	20/29057	AKASH	25	17
31	20/29059	VINAY DIGWAL	25	21
32	20/29060	DEEPAK MEENA	25	24
33	20/29061	MAYANK	25	21
34	20/29062	ASHITA	25	23
35	20/29064	HIMANSHI KATHURIA	25	24
36	20/29065	TULIKA ARORA	25	24
37	20/29066	VAIDEHI SINGAL	25	20
38	20/29068	RANVEER YADAV	25	20
39	20/29070	AMAN KUMAR	25	22
40	20/29071	AMAN	25	22
41	20/29072	RABIYA	25	24
42	20/29074	JAZZ	25	0
43	20/29076	ZUHA MOHSIN	25	24
44	20/29077	SWETA SRIVASTAVA	25	23
45	20/29079	SHIVANSH GAUTAM	25	22
46	20/29084	NITIN SAMAUHU	25	24
47	20/29085	AKSHITA	25	23
48	20/29088	ADITYA RAJ CHAUDHARY	25	21
49	20/29091	TANISHA	25	23



**B. A. (Hons.) Geography II - ENVIRONMENTAL SCIENCE [72182801] - DR.  
ASHWANI SHARMA - ENVIRONMENTAL STUDIES - [IA-2020]**

S. No.	Roll Number	Student's Name	Total IAMaximum Marks25	Total IAMarks Obtained25
1	20/31003	HARSH KUMAR	25	23
2	20/31004	AKANKSHA CHUGH	25	23
3	20/31006	BIPASHNA SHARMA	25	23
4	20/31007	PARAS GAHLOT	25	23
5	20/31008	SACHIT AGGARWAL	25	22
6	20/31009	KHUSHI KHARB	25	22
7	20/31010	YASH SINGHROHA	25	23
8	20/31012	HARSHIT PANDEY	25	23
9	20/31014	HARSHIT CHOUBEY	25	23
10	20/31017	DHRUV ROHILLA	25	23
11	20/31018	SHALINI CHAUHAN	25	23
12	20/31019	SOUMYA SHARMA	25	23
13	20/31020	SAKSHI UNIYAL	25	23
14	20/31021	TANNU YADAV	25	23
15	20/31022	NANCY	25	24
16	20/31023	VANI KAPOOR	25	23
17	20/31024	RAGHAV SHARMA	25	23
18	20/31027	AMIT	25	23
19	20/31028	YUVRAJ SINHA	25	23
20	20/31029	ADITYA VIKRAM	25	23
21	20/31030	DEEPALI PATERIYA	25	23
22	20/31032	TINISHA PUROHIT	25	23
23	20/31033	MUSKAN YADAV	25	23
24	20/31034	DHEERAJ KUMAR	25	23
25	20/31036	SUHAB AKTAR BARBHUIYA	25	23
26	20/31037	MUKUL	25	23
27	20/31038	MS SAPNA	25	23
28	20/31040	NISHA JAKHAR	25	23
29	20/31041	RAJAT SAINI	25	23
30	20/31042	KISHAN VERMA	25	23
31	20/31043	JYOTI	25	23
32	20/31045	RENU KUMARI MAHTO	25	23
33	20/31046	SANJANA DEY	25	23
34	20/31048	CHANDAN YADAV	25	23
35	20/31051	JATIN RANA	25	23
36	20/31052	KHUSHI	25	23
37	20/31053	MUKUL MATHUR	25	23
38	20/31054	TENZIN JAMPHEL	25	23
39	20/31056	PAWAN GODARA	25	23
40	20/31057	PAWAN GUPTA	25	0
41	20/31058	PRAVIN KUMAR AHIRWAR	25	23
42	20/31059	HIMANSHU KAUSHIK	25	24
43	20/31060	PRASHANT KUMAR	25	23
44	20/31061	CHHATRA PAL	25	23

Attested by the Principal,  
Shivaji College (University of Delhi)

*Shivaji*

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Raja Garden, New Delhi-110027

S. No.	Roll Number	Student's Name	Total IA Maximum Marks 25	Total IA Marks Obtained 25
45	20/31062	BUSHAN DEBBARMA	25	0
46	20/31065	VIPIN	25	23
47	20/31066	LUMMI SHANGCHIRI	25	23
48	20/31067	SUDHIR PRATAP SINGH	25	23
49	20/31068	UDAYSHIL KUMAR	25	23
50	20/31069	DEEPALI RAJ	25	23
51	20/31071	ALOK KUMAR	25	0
52	20/31072	ABHINANDAN KUMAR	25	23
53	20/31074	JEBA	25	23
54	20/31075	ASTHA KUMARI	25	23
55	20/31076	RASHMI	25	24
56	20/31077	LALREMSIAMA	25	0

B. A. (Hons.) Hindi II - ENVIRONMENTAL SCIENCE [72182801] - DR. VIRAT - ENVIRONMENTAL STUDIES - [IA-2020]

S. No.	Roll Number	Student's Name	Total IAMaximum Marks25	Total IAMarks Obtained25
1	20/33001	ANJALI NEGI	25	25
2	20/33002	APPORVA CHAUDHARY	25	21
3	20/33003	SARTHAK SHARMA	25	25
4	20/33004	RAJNISH	25	21
5	20/33005	PREETI	25	25
6	20/33006	SHIVA BAGRI	25	23
7	20/33007	SHIV RANJAN YADAV	25	21
8	20/33009	SARIKA	25	25
9	20/33010	NEHA KUMARI	25	22
10	20/33011	ANUPAM	25	24
11	20/33012	SATYAM KUMAR	25	18
12	20/33014	RADHA	25	25
13	20/33015	ABHISHEK VERMA	25	25
14	20/33016	SUNNY	25	24
15	20/33017	DEVENDRA SINGH	25	25
16	20/33018	SURAJ JHA	25	24
17	20/33020	AZEEM AKHTAR	25	21
18	20/33022	UDIT SHARAMA	25	21
19	20/33025	MOHAMMED ZAID ANSARI	25	21
20	20/33026	SHUBHAM	25	24
21	20/33028	SHEKHAR GUPTA	25	23
22	20/33029	ROHIT KUMAR	25	23
23	20/33030	GOURAV KUMAR	25	25
24	20/33031	KARTIKEY SINGH	25	23
25	20/33032	RAJESH KUMAR AGRAHARI	25	23
26	20/33033	TUSHAR RAI	25	24
27	20/33034	VIKASH CHAUHAN	25	24
28	20/33040	VINAY	25	0
29	20/33041	SUMIT KUMAR	25	21
30	20/33042	VIKAS KUMAR	25	25
31	20/33043	AATISH KUMAR	25	19
32	20/33044	KABEER BATHLA	25	22
33	20/33045	NITISH KUMAR	25	25
34	20/33047	SURENDER YADAV	25	25
35	20/33050	ASHOK ARYA	25	0
36	20/33051	VIKAS	25	23
37	20/33052	AARTI	25	22
38	20/33053	AKHILESH KUMAR PATEL	25	20
39	20/33054	RAHUL	25	19
40	20/33055	RASHMI PATHORIYA	25	0
41	20/33056	SHIVAM KUMAR	25	22
42	20/33057	TANUPRIYA	25	25
43	20/33058	NEHA	25	19
44	20/33062	RAM KUMAR	25	25
45	20/33064	RUPALI	25	23
46	20/33065	ANIKET KUMAR	25	19
47	20/33066	ARSHAD	25	0
48	20/33067	RITIKA KUMARI	25	22
49	20/33072	TANNU . .	25	23
50	20/33074	DIMPAL CHAUDHARY	25	23
51	20/33075	SHEETAL	25	21

**B. A. (Hons.) History II - ENVIRONMENTAL SCIENCE [72182801] - DR.  
ASHWANI SHARMA - ENVIRONMENTAL STUDIES - [IA-2020]**

S. No.	Roll Number	Student's Name	Total IAMaximum Marks25	Total IAMarks Obtained25
1	20/35001	PRINCE GOYAL	25	22
2	20/35002	SWAPNIL KUMAR	25	22
3	20/35004	MUKUL DRALL	25	23
4	20/35005	DEEPAK KUMAR PASWAN	25	23
5	20/35006	SHUBHAM TRIPATHI	25	24
6	20/35008	SAMISHTI YADAV	25	22
7	20/35009	RITESH KHATRI	25	23
8	20/35011	SHRAWAN KUMAR	25	22
9	20/35012	YUG SHARMA	25	22
10	20/35013	SHAYERI JARUHAR	25	23
11	20/35014	ASTHA SINGH	25	22
12	20/35016	AYUSH SINGH	25	22
13	20/35017	SHIVANI MAHESHWARI	25	23
14	20/35018	KAJAL	25	23
15	20/35020	SAKSHI SOLANKI	25	23
16	20/35022	LALREMSIAMA	25	23
17	20/35023	PARUL KUMARI	25	23
18	20/35024	SIMRAN	25	22
19	20/35025	SWATI KUMARI	25	23
20	20/35026	ANUJ SHARMA	25	24
21	20/35027	ASHWANI SINGH	25	23
22	20/35028	LAPANG YANGFO	25	23
23	20/35029	KRISHNA KANT UPMANYU	25	23
24	20/35030	SHIV KUMAR	25	22
25	20/35031	VISHAL PRAJAPATI	25	22
26	20/35032	SACHIN KUMAR	25	23
27	20/35033	ADITYA JAISWAL	25	23
28	20/35035	SHREYA	25	23
29	20/35036	PRIYAM MISHRA	25	23
30	20/35037	ASHISH CHOUDHARY	25	22
31	20/35043	TANVEER ASIF	25	24
32	20/35045	DEEPANSHU KUMAR	25	23
33	20/35046	HIMANSHU YADAV	25	23
34	20/35047	TSEWANG GYATSO THAKARPA	25	23
35	20/35050	AKHIL GAUTAM	25	23
36	20/35051	SHAILY GUPTA	25	23
37	20/35052	RAHUL KUMAR	25	23
38	20/35053	ANMOL RATHORE	25	23
39	20/35054	MD ARMAN	25	22
40	20/35056	RANANJAY SINGH CHAUHAN	25	22
41	20/35060	AJIT KUMAR	25	23
42	20/35061	NITIN MAURYA	25	23

Attested by the Principal,  
Shivaji College (University of Delhi)

*Shivaji*

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राजा गार्डन, नई दिल्ली-110027  
Raja Garden, New Delhi-110027

S. No.	Roll Number	Student's Name	Total IAMaximum Marks25	Total IAMarks Obtained25
43	20/35063	ANURAG KUMAR	25	23
44	20/35064	MD AKRAM RAJA	25	23
45	20/35065	KSHITIJ	25	0
46	20/35066	OHIT	25	0
47	20/35067	ABHISHEK	25	23
48	20/35068	MOHIT	25	22
49	20/35071	FIRDOOS AHMED	25	23
50	20/35072	SACHIN KUMAR	25	23
51	20/35075	SHAVEZ ANWAR	25	23
52	20/35076	KAJAL	25	0
53	20/35077	SUJIT KUMAR	25	23
54	20/35078	KAPIL KUMAR	25	23
55	20/35079	SAHIL YADAV	25	22
56	20/35081	YOGESH KUMAR	25	23
57	20/35082	DISHU SINGH	25	23
58	20/35084	NIDHI BADGUJAR	25	23
59	20/35088	PRIYANKA	25	23
60	20/35089	MOHAMMAD YUSUF ALI	25	23



**B. A. (Hons.) Political Science II - ENVIRONMENTAL SCIENCE [72182801] -  
DR. ASHWANI SHARMA - ENVIRONMENTAL STUDIES - [IA-2020]**

S. No.	Roll Number	Student's Name	Total IAMaximum Marks25	Total IAMarks Obtained25
1	20/40001	SUBHASH MEENA	25	20
2	20/40002	NANDANI GIRI	25	23
3	20/40005	ANSHITA SINGH	25	23
4	20/40006	RIYA SHARMA	25	23
5	20/40007	EESHIKA AGRAWAL	25	23
6	20/40010	SANJEET	25	23
7	20/40011	MEENAL PAREKH	25	23
8	20/40012	YUKTA CHHETRI	25	23
9	20/40013	KARINA RANA	25	23
10	20/40014	SAANVI SHEKHAWAT	25	0
11	20/40015	AKANKSHA SHARMA	25	23
12	20/40016	DINESH KUMAR	25	23
13	20/40018	PALAK KARNANI	25	23
14	20/40020	ARJUN BHARDWAJ	25	23
15	20/40021	DISHA SHARMA	25	23
16	20/40022	BHOOMI GOYAL	25	23
17	20/40023	JATIN SEHRAWAT	25	23
18	20/40024	GAURI BUDHIRAJA	25	23
19	20/40025	HIMANSHI CHAMOLA	25	23
20	20/40026	DEEPESH SETHI	25	23
21	20/40028	RAGHAV GUPTA	25	23
22	20/40029	AKSHITA SHARMA	25	23
23	20/40030	ANKIT	25	23
24	20/40031	MOHAK ANEJA	25	23
25	20/40032	NISTHA SINGH	25	23
26	20/40033	SUMIT REDHU	25	23
27	20/40037	SAKSHI DAYAL	25	24
28	20/40040	BHASKAR	25	22
29	20/40044	MOHIT CHAWLA	25	22
30	20/40045	REETY DUBEY	25	22
31	20/40047	VIKESH KUMAR	25	23
32	20/40048	JAYSHANKAR	25	23
33	20/40050	SURUCHI	25	22
34	20/40051	SANDHYA KUMARI	25	22
35	20/40052	SUNIL	25	23
36	20/40053	AYUSH ANAND	25	20
37	20/40055	ROHIT	25	20
38	20/40058	KAMAL JEET	25	23
39	20/40059	KULDEEP SINGH	25	22
40	20/40063	TENZIN WANGMO	25	22
41	20/40065	SIMRAN	25	22
42	20/40066	AHMAD FARAZ	25	23
43	20/40067	HEMANT	25	23
44	20/40072	VIPIN	25	22

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Raja Garden, New Delhi-110027

S. No.	Roll Number	Student's Name	Total IAMaximum Marks25	Total IAMarks Obtained25
45	20/40074	PRASHANT YADAV	25	23
46	20/40076	ANIL KUMAR MEENA	25	22
47	20/40077	SURTI SHARMA	25	23
48	20/40079	VAIBHAV RANJAN	25	22
49	20/40082	ANKUR JAISWAL	25	22
50	20/40083	PRIYANSHU	25	22
51	20/40084	MEHAN MISHRA	25	22
52	20/40085	AKHAND NARAIN SHUKLA	25	23
53	20/40086	APOORV SRIVASTAVA	25	23
54	20/40087	HARDEEP	25	22
55	20/40088	ADARSH SRIVASTAVA	25	22
56	20/40089	ASHISH SINGH	25	22
57	20/40090	VISHAL KUMAR KARGIL	25	22
58	20/40091	PUSHKAR SINGH	25	21
59	20/40092	GURJEET SINGH	25	22
60	20/40093	YUDHVIR	25	22
61	20/40094	VIKAS	25	22
62	20/40095	ANKIT SINGH	25	23

## B. A. (Hons.) Sanskrit II - ENVIRONMENTAL SCIENCE [72182801] - DR. VIRAT - ENVIRONMENTAL STUDIES - [IA-2020]

S. No.	Roll Number	Student's Name	Total IAMaximum Marks25	Total IAMarks Obtained25
1	20/43001	DEEPANSHU MOGHA	25	24
2	20/43002	AMAN KUMAR MISHRA	25	24
3	20/43003	SAGAR SINGH ATTRI	25	25
4	20/43004	KAPIL	25	20
5	20/43007	YASH RAJ KAUSHIK	25	22
6	20/43011	BRIJESH KUMAR JHA	25	0
7	20/43012	KUNAL OJHA	25	15
8	20/43013	VARUN KUMAR VISHWAKARMA	25	25
9	20/43014	SAURAV	25	23
10	20/43015	SHEETAL KUMARI	25	21
11	20/43019	RITIK	25	18
12	20/43023	MANEESH PATEL	25	0
13	20/43030	ADITYA SHARAN	25	21
14	20/43031	ROHIT SINGH	25	0
15	20/43035	AARTI	25	21
16	20/43037	SHUBHAM KUMAR	25	21
17	20/43038	SAHAJ GUPTA	25	20
18	20/43039	VIVEK KUMAR	25	22
19	20/43040	BHAVISHYA VERMA	25	0
20	20/43042	YOGENDER KAUSHIK	25	0
21	20/43045	HITESH KUMAR	25	0
22	20/43050	UDAY PRATAP	25	20
23	20/43054	MANISH KUMAR	25	0
24	20/43058	GAUTAM KUMAR	25	18
25	20/43059	SACHIN PANDEY	25	0
26	20/43062	PRIYA PANDEY	25	21
27	20/43065	HIMANSHU BHARDWAJ	25	24
28	20/43068	RISHABH KAUSHIK	25	23
29	20/43071	VIVEK	25	17
30	20/43072	SACHIN NAGAR	25	17
31	20/43073	ARAV	25	0
32	20/43076	CHAITANYA MAHAPRABHU TRIPATHI	25	17
33	20/43077	YOGESH YADAV	25	17
34	20/43078	VINAY KUMAR	25	16
35	20/43080	ADARSH KASHYAP	25	19
36	20/43082	ANSHIKA JAIN	25	22
37	20/43083	ANUSH SAIFI	25	20
38	20/43085	RONAK DHAKA	25	20
39	20/43088	DONESH SONI	25	16
40	20/43090	PURU YADAV	25	17
41	20/43091	KANISHKA	25	0
42	20/43093	HRITIK	25	17
43	20/43096	ADITYA YADAV	25	23
44	20/43097	RAHUL	25	0

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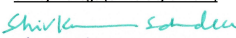
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Raja Garden, New Delhi-110027

**B. Com. (Programme) I - ENVIRONMENTAL STUDY [72182801] - DR. VIRAT - ENVIRONMENTAL STUDIES - [IA-2020]**

S. No.	Roll Number	Student's Name	Total IAMaximum Marks25	Total IAMarks Obtained25
1	20/50150	CHAKSHU GARG	25	21
2	20/50151	SAHIL YADAV	25	25
3	20/50152	TSERING DOLKAR	25	23
4	20/50154	JAMYANG GYALTSEN	25	25
5	20/50155	TENZIN NIDON	25	24
6	20/50157	AARTI PANDITA	25	24
7	20/50159	RONIT RAI	25	0
8	20/50160	PAWAN KUMAR SAINI	25	24
9	20/50161	BHARAT SAWHNEY	25	23
10	20/50162	HARSH GUPTA	25	24
11	20/50163	AAYUSHMAAN SINGH THAKUR	25	0
12	20/50166	YUKTI RAVI	25	24
13	20/50168	PRINCE AGRAWAL	25	21
14	20/50169	VANSH NAYYAR	25	17
15	20/50170	PRERNA NAGPAL	25	22
16	20/50172	HIMANSHU MANWANI	25	20
17	20/50173	NIDHI	25	25
18	20/50174	LAVEENA MOTIANI	25	16
19	20/50177	VISHAL	25	23
20	20/50178	PRATIK KUMAR	25	23
21	20/50180	PRABHAV KAUSHIK SHARMA	25	23
22	20/50181	PALLAK JAIN	25	21
23	20/50182	AARYAN KANSAL	25	18
24	20/50183	YUGVENDRA SINGH DHINGRA	25	20
25	20/50185	SAHIL NARULA	25	25
26	20/50186	KETAN	25	24
27	20/50189	KANISHK KHANNA	25	22
28	20/50190	NUPUR JAIN	25	24
29	20/50191	ANISHA	25	23
30	20/50192	VANSHIKA GARG	25	25
31	20/50193	SAKSHAM MAGOTRA	25	0
32	20/50195	SAHARSH SONI	25	22
33	20/50196	HEMANT SINGHAL	25	24
34	20/50197	AKSHIN JAIN	25	23
35	20/50198	RITU KUMARI	25	22
36	20/50199	SHREYA	25	21
37	20/50200	AAKASH	25	24
38	20/50201	LAKSHAY	25	22
39	20/50202	SHUBH AGARWAL	25	21
40	20/50203	NIKITA MALIK	25	23
41	20/50208	AKSHAT TRIPATHI	25	23
42	20/50209	SAURABH PANWAR	25	0

Attested by the Principal,  
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 Raja Garden, New Delhi-110027

S. No.	Roll Number	Student's Name	Total IAMaximum Marks25	Total IAMarks Obtained25
43	20/50212	RAHUL	25	18
44	20/50213	SURBHI SINGH	25	22
45	20/50215	KANAK	25	24
46	20/50216	KESHAV DUA	25	0
47	20/50217	JAI SHARMA	25	22
48	20/50218	AYAN LALL	25	24
49	20/50219	PRATHAM SINGH BASWAL	25	20
50	20/50220	MANISHA KHARINTA	25	23
51	20/50221	VANSH	25	21
52	20/50222	SHIVAM YADAV	25	18
53	20/50223	ANSH BHAYANA	25	22
54	20/50224	KHUSHI SHARMA	25	0
55	20/50226	TAMNNA KUMARI	25	23
56	20/50231	YOGESH	25	21
57	20/50232	HARSHIT YADAV	25	21
58	20/50233	SIDHRATH SHARMA	25	24



**B. Com. (Programme) I - ENVIRONMENTAL STUDY [72182801] - DR. VIRAT - ENVIRONMENTAL STUDIES - [IA-2020]**

S. No.	Roll Number	Student's Name	Total IAMaximum Marks25	Total IAMarks Obtained25
1	20/50001	YASH KUMAR SONKAR	25	24
2	20/50002	ADITAYA YADAV	25	23
3	20/50003	ABHISHEK	25	20
4	20/50006	ANSHIKA PANDEY	25	24
5	20/50009	CHIRAG VISHWAKARMA	25	24
6	20/50015	KRITIKA	25	25
7	20/50017	PAWAN KUMAR	25	23
8	20/50018	KUNAL	25	24
9	20/50020	MOHIT	25	24
10	20/50023	MEGHA MALIK	25	24
11	20/50030	DEEPAK KUMAR	25	24
12	20/50035	SHIV KUMAR	25	25
13	20/50038	UJJWAL RAO	25	21
14	20/50039	PARAS JAIN	25	24
15	20/50043	AYUSH	25	23
16	20/50044	RAUNAK GUPTA	25	19
17	20/50047	RISHIKESH VINAYAN	25	23
18	20/50053	ARPAN PANWAR	25	24
19	20/50054	TANUJ KUMAR MANGLAM	25	0
20	20/50062	SHUBHAM KUMAR	25	24
21	20/50063	VARUN SAINI	25	25
22	20/50066	LUKSHMAN KHAPRE	25	23
23	20/50070	SONAL CHOUDHARY	25	22
24	20/50072	RAGHVENDRA LOHIA	25	24
25	20/50073	ARTI SINGH	25	21
26	20/50074	KIRTI SINGH	25	23
27	20/50076	DIVYANSHU KUSHWAHA	25	24
28	20/50077	DIVYANSH SINGHANIA	25	0
29	20/50080	RIDHI JAIN	25	22
30	20/50081	SHEENA GARG	25	22
31	20/50083	SHUBRA MITTAL	25	24
32	20/50087	TANU VERMA	25	20
33	20/50088	ISHIKA GUPTA	25	24
34	20/50089	VIVEK YADAV	25	22
35	20/50095	AMIT KUMAR	25	21
36	20/50098	SANSKRITI SRIVASTAVA	25	23
37	20/50101	SOLOMON JUGLI	25	23
38	20/50103	SILKY JOHAR	25	23
39	20/50109	ASHNA DHILLON	25	24
40	20/50113	NITISH SONI	25	23
41	20/50114	BHOOMIKA MAHESHWARI	25	23
42	20/50117	PARV AGARWAL	25	23
43	20/50121	DIVYA GUPTA	25	23
44	20/50122	VICKY KUMAR	25	21

Attested by the Principal,  
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राजा गार्डन, नई दिल्ली-110027  
Raja Garden, New Delhi-110027

S. No.	Roll Number	Student's Name	Total IA Maximum Marks 25	Total IA Marks Obtained 25
45	20/50125	SHIKHA GUPTA	25	21
46	20/50129	TUSHAR KUMAR	25	20
47	20/50131	NEERAJ RAWAT	25	20
48	20/50133	VEDANSHI VERMA	25	22
49	20/50135	HIMANSHU SINGH	25	22
50	20/50136	THEJUS CHANDRAN C	25	24
51	20/50139	SHUBHAM SARAWAGI	25	24
52	20/50140	JAYANT JAIN	25	22
53	20/50141	STANZIN SHESNYEN	25	24
54	20/50142	CHANDAN	25	14
55	20/50143	VAIBHAV BATRA	25	24
56	20/50144	ANKUSH KUMAR TONK	25	25
57	20/50145	NIKHIL SINGH	25	21
58	20/50147	SHIVAM NARWANI	25	24

Attested by the Principal,  
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Raja Garden, New Delhi-110027

## B. Sc. (Hons.) Bio-Chemistry II - ENVIRONMENTAL SCIENCE [72182801] - DR. VIRAT - ENVIRONMENTAL STUDIES - [IA-2020]

S. No.	Roll Number	Student's Name	Total IAMaximum Marks25	Total IAMarks Obtained25
1	20/06005	KARISHMA LEKHWAR	25	25
2	20/06007	MAANYA	25	24
3	20/06012	AANTRA RAO	25	24
4	20/06014	SHUBHANGI RAI	25	0
5	20/06015	ADBHUT JANGID	25	24
6	20/06018	IRAAH GEHLOT	25	20
7	20/06019	DHRUV MITTAL	25	0
8	20/06022	VANSHIKA BANSAL	25	25
9	20/06023	VIDISHA THAKUR	25	24
10	20/06024	GAGAN YADAV	25	0
11	20/06025	NAMAN GUPTA	25	25
12	20/06026	TUSHAR GUPTA	25	25
13	20/06027	DAKSHITA SEHRAWAT	25	23
14	20/06028	DEVYANI KHOSLA	25	22
15	20/06029	PRACHI SHARMA	25	24
16	20/06030	SHREYA MALIK	25	22
17	20/06031	MEHFOOZ HELAL	25	24
18	20/06032	SACHIN SHARMA	25	22
19	20/06033	POOJA GUPTA	25	23
20	20/06034	SUDHANSHU SHUKLA	25	23
21	20/06035	TINILUNG LIBANG	25	21
22	20/06036	VIDHI THATAI	25	24
23	20/06037	MITALI SINGH	25	25
24	20/06038	GUNGUN SAINI	25	21
25	20/06039	ARCHITA SINGH	25	25
26	20/06041	VANDANA KUMARI	25	19
27	20/06044	SIKANDER PRATAP SINGH	25	25

## B. Sc. (Hons.) Botany II - ENVIRONMENTAL SCIENCE [72182801] - DR. VIRAT - ENVIRONMENTAL STUDIES - [IA-2020]

S. No.	Roll Number	Student's Name	Total IAMaximum Marks25	Total IAMarks Obtained25
1	20/09001	DIVY SACHIN ARORA	25	21
2	20/09004	ANKUR CHAURASIA	25	0
3	20/09006	SAGAR	25	0
4	20/09008	ANJALI	25	21
5	20/09010	GUNJAN SHAKYA	25	0
6	20/09014	OJAS SIHAG	25	0
7	20/09017	SHIVANI THAKUR	25	24
8	20/09019	KHUSHI	25	18
9	20/09020	AKSHAT SHARMA	25	0
10	20/09023	NIDHISH GUPTA	25	0
11	20/09024	SUMIT KUMAR PATHAK	25	25
12	20/09025	HARSHIT KUMAR	25	0
13	20/09026	VINAY	25	18
14	20/09027	YAMINI	25	22
15	20/09028	MALIK HINAN AHMAD HASAN	25	21
16	20/09032	NISHA	25	22
17	20/09034	DAYA	25	19
18	20/09035	HIMANSHU	25	20
19	20/09036	MONA PATEL	25	24
20	20/09042	ANJALI	25	22
21	20/09043	JAI BHAGWAN MISHRA	25	21
22	20/09046	PRATIBHA FAGERIA	25	24
23	20/09047	RISHIKA SAINI	25	19
24	20/09048	NIDHI YADAV	25	18
25	20/09049	YOGENDER	25	16
26	20/09051	ANJALI RODHIA	25	19
27	20/09053	LAKSHYA	25	0
28	20/09054	RENUKA	25	23
29	20/09056	FARMAN NABI MIRCHAL	25	21
30	20/09057	MAHAVEER SANKHLA	25	22
31	20/09058	KARTIKEYA TIWARI	25	23

Attested by the Principal,  
Shivaji College (University of Delhi)

*Shivaji Sankhla*

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**B. Sc. (Hons.) Chemistry II - ENVIRONMENTAL SCIENCE [72182801] - DR. ASHWANI SHARMA - ENVIRONMENTAL STUDIES - [IA-2020]**

S. No.	Roll Number	Student's Name	Total IAMaximum Marks25	Total IAMarks Obtained25
1	20/10001	LINGWANG RAMRA	25	23
2	20/10006	SHIVANI	25	23
3	20/10009	RITIKA	25	24
4	20/10010	RITIKA MEHTA	25	24
5	20/10011	SUMIT KUMAR OJHA	25	22
6	20/10018	PRANJAL AGGARWAL	25	23
7	20/10019	MEHUL PUROHIT	25	22
8	20/10021	KHUSHI TYAGI	25	22
9	20/10042	UMANG	25	23
10	20/10043	PRAGATI CHHABRA	25	23
11	20/10044	DIYA SHARMA	25	23
12	20/10045	SANDEEP SHARMA	25	23
13	20/10046	SAMIKSHA	25	23
14	20/10053	HARSHIT KAPIL	25	24
15	20/10054	KANIKA	25	23
16	20/10055	TUSHAR	25	24
17	20/10056	RITIK GARG	25	23
18	20/10057	RANJEET KUMAR	25	24
19	20/10058	KHUSHI	25	22
20	20/10059	NISHANT MALIK	25	23
21	20/10060	DEEPAK KUMAR	25	24
22	20/10063	VINOD	25	22
23	20/10064	PREETI SINGH	25	23
24	20/10066	PRANAV KUMAR SINGH	25	0
25	20/10067	RAKESH YADAV	25	22
26	20/10068	MAHESH KUMAR	25	0
27	20/10069	AKANSHA	25	23
28	20/10070	HARSH DAKSH	25	23
29	20/10071	SANJEEV KUMAR	25	22

**B. Sc. (Hons.) Mathematics I - AECC-Environmental Science [72182801] - DR.  
ASHWANI SHARMA - ENVIRONMENTAL STUDIES - [IA-2020]**

S. No.	Roll Number	Student's Name	Total IAMaximum Marks25	Total IAMarks Obtained25
1	20/17006	SAHIL NARAYAN	25	18
2	20/17009	RAHUL CHAURASIA	25	20
3	20/17013	NIKHIL KUMAR	25	19
4	20/17015	SANTOSH KUMAR	25	18
5	20/17019	RAHUL YADAV	25	18
6	20/17032	SONU VERMA	25	19
7	20/17035	RAHUL KUMAR	25	0
8	20/17040	VAIBHAV YADAV	25	20
9	20/17047	SHUBH WALIA	25	19
10	20/17050	SARTHAK	25	0
11	20/17052	SANSKRITI SINGH	25	20
12	20/17054	PARVEEN	25	17
13	20/17055	SHRUTI GUPTA	25	19
14	20/17064	SHALINI RAI	25	19
15	20/17070	PRAKHAR AGRAWAL	25	0
16	20/17074	NEERU YADAV	25	20
17	20/17075	RITIKA KUSHWAH	25	19
18	20/17078	VAIBHAV SINGHAL	25	19
19	20/17080	UDAY KASHYAP	25	18
20	20/17085	RIYA NAIN	25	19
21	20/17086	TUSHAR RATHEE	25	20
22	20/17088	RAKSHIT YADAV	25	19
23	20/17090	VRITIKA	25	19
24	20/17097	SHUBHANSHU KAKKAR	25	0
25	20/17105	SARKAR ATIT KUMAR SINGROUL	25	20
26	20/17110	VARSHA	25	18
27	20/17111	SHUBHAM KUMAR	25	20
28	20/17112	VISHAL MATORIA	25	19
29	20/17115	PANKAJ KUMAR	25	18
30	20/17117	SUMIT	25	19
31	20/17119	SHRESH SHARMA	25	23
32	20/17124	ROHIT KUMAR SAHU	25	23
33	20/17126	SWATI PANDEY	25	20
34	20/17138	YATIN JOHARWAL	25	18
35	20/17144	PARVESH	25	19
36	20/17145	VISHAKHA AGGARWAL	25	18
37	20/17146	PRIYANSHU MEHTA	25	19
38	20/17149	PIYUSH TRIVEDI	25	19
39	20/17151	REVANT MADNANI	25	0
40	20/17154	SIDHARTH	25	19
41	20/17156	SOURAV BHARDWAJ	25	20
42	20/17159	SAURABH RANJAN KUMAR	25	20

Attested by the Principal,  
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*Shivaji*

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Raja Garden, New Delhi-110027

S. No.	Roll Number	Student's Name	Total IAMaximum Marks25	Total IAMarks Obtained25
43	20/17160	RAKESH RAJ	25	19
44	20/17168	NEELAM GANGWAR	25	20

Attested by the Principal,  
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*Shivaji*

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(दिल्ली विश्वविद्यालय) / (University of Delhi)

राजा गार्डन, नई दिल्ली-110027

Raja Garden, New Delhi-110027

**B. Sc. (Hons.) Mathematics I - AECC-Environmental Science [72182801] - DR.  
ASHWANI SHARMA - ENVIRONMENTAL STUDIES - [IA-2020]**

S. No.	Roll Number	Student's Name	Total IAMaximum Marks25	Total IAMarks Obtained25
1	20/17002	ANAMIKA KUMARI	25	20
2	20/17003	MANSI MITTAL	25	20
3	20/17017	MAHIMA BAKSHI	25	20
4	20/17020	KAVYA GANGWAR	25	19
5	20/17028	DEEPAK UPADHYAY	25	17
6	20/17030	ASHUTOSH PANDEY	25	21
7	20/17037	KANISHKA	25	18
8	20/17038	HARSHUL RATNOO	25	17
9	20/17043	LAVANYA SHARMA	25	21
10	20/17044	MD MEHBOOB	25	19
11	20/17045	MANPREET SINGH	25	20
12	20/17051	AISHA CHOUDHARY	25	19
13	20/17057	ISHA	25	19
14	20/17058	MANN CHAUDHARY	25	17
15	20/17061	KARAN SIKARWAR	25	0
16	20/17065	BHUMIKA PANDEY	25	19
17	20/17069	AAKARSHAK MISHRA	25	20
18	20/17071	KASHIKA SATIJA	25	20
19	20/17072	MOHAN KAUSHIK	25	13
20	20/17073	AMAN NEGI	25	17
21	20/17076	DAVENDER	25	19
22	20/17077	AMRINDER SINGH	25	17
23	20/17079	HIMANSHU	25	19
24	20/17081	MAHEK	25	19
25	20/17091	AMAN KUMAR	25	18
26	20/17100	ASHISH	25	20
27	20/17102	HEMANT	25	19
28	20/17104	KSHITIJ YADAV	25	19
29	20/17106	ANUPRIYA MEENA	25	18
30	20/17107	HARSH RAJ SONI	25	20
31	20/17108	AMAN	25	17
32	20/17109	DAMINI YADAV	25	19
33	20/17113	GREESHMA E	25	20
34	20/17116	AMIT GUPTA	25	18
35	20/17118	DHEERAJ KUMAR	25	0
36	20/17120	AGAM KALRA	25	20
37	20/17121	BHAVISHYA PANGHAL	25	20
38	20/17122	JATIN PANWAR	25	23
39	20/17127	ABHINEET KUMAR	25	19
40	20/17131	ANSHUL	25	22
41	20/17133	KRITIKA SETHI	25	20
42	20/17134	KRISHAN KANHIYA	25	19
43	20/17135	KHUSHBU ARORA	25	19
44	20/17139	ANKIT KUMAR	25	16

Attested by the Principal,  
Shivaji College (University of Delhi)

*Shivaji*

कर्मवाहक प्राचार्य / Officiating Principal  
शिवजी महाविद्यालय / Shivaji College  
(दिल्ली विश्वविद्यालय) / (University of Delhi)  
राजा गार्डन, नई दिल्ली-110027  
Raja Garden, New Delhi-110027



S. No.	Roll Number	Student's Name	Total IAMaximum Marks25	Total IAMarks Obtained25
45	20/17141	ADITYA SINGH	25	19
46	20/17142	CHEITNA	25	20
47	20/17147	DEEPANSHU	25	18
48	20/17148	HARSH GUPTA	25	19
49	20/17155	HARSHITA KAUSHIK	25	20
50	20/17158	AMOGH KHANDELWAL	25	17
51	20/17162	ISHANT RAWAT	25	0
52	20/17163	ANUSHKA PANDEY	25	20
53	20/17164	AMAN KUMAR	25	16
54	20/17166	KAMAL NAYAN YADAV	25	18
55	20/17167	HIMANSHU RAJ DIXIT	25	18
56	20/17170	LOKESH GUPTA	25	0

**B. Sc. (Hons.) Physics II - ENVIRONMENTAL SCIENCE [72182801] - DR.  
ASHWANI SHARMA - ENVIRONMENTAL STUDIES - [IA-2020]**

S. No.	Roll Number	Student's Name	Total IAMaximum Marks25	Total IAMarks Obtained25
1	20/19002	KUMAR CHANDRANSHU	25	23
2	20/19007	DEEPAM SHARMA	25	22
3	20/19011	ADITYA PANDEY	25	0
4	20/19017	PRAMATH TEWARI	25	23
5	20/19022	ANNU	25	23
6	20/19024	DEV	25	24
7	20/19031	SURAJ CHANDRA JOSHI	25	22
8	20/19032	ROBIN RAJ	25	23
9	20/19033	BADAL KUMAR	25	23
10	20/19040	DEEPANSHU JAYANT	25	23
11	20/19053	AMRESH BEHERA	25	22
12	20/19057	ARYAN CHAUHAN	25	0
13	20/19058	ARCHIT SRIVASTAV	25	23
14	20/19066	CHETAN	25	0
15	20/19076	BHAVESH	25	22
16	20/19077	GAUTAM YADAV	25	22
17	20/19084	AMIT	25	23
18	20/19088	AKASH KUMAR	25	0
19	20/19093	SAGAR SINGH	25	0
20	20/19097	MITALI KAPOOR	25	23
21	20/19098	NAVEEN	25	22
22	20/19100	YOGESH RATHEE	25	0
23	20/19101	RUSHEEL KHATRI	25	22
24	20/19105	KANISHK RAJ YADAV	25	22
25	20/19107	VISHAL	25	23
26	20/19108	ANKIT KUMAR BUGALIA	25	23
27	20/19113	TUSHAR KALRA	25	23
28	20/19114	AMIT CHAUDHARY	25	22
29	20/19116	NITIN	25	23
30	20/19117	KABEER KUMAR	25	23
31	20/19118	SIDDHARTH JADAUN	25	22
32	20/19119	SHIVAKANT	25	22
33	20/19120	AKASH YADAV	25	23
34	20/19121	GOURAV	25	23
35	20/19122	DEV YADAV	25	22
36	20/19123	HARSH KUMAR	25	23
37	20/19124	GAURAV	25	23
38	20/19127	FAIZAN AHMAD DAR	25	22
39	20/19128	SURYENDU SINGH	25	0
40	20/19129	PRERIT KUMAR	25	23
41	20/19130	ROHIT	25	22
42	20/19131	SUHANI RAINA	25	23
43	20/19133	SIDHANT KANDOI	25	22
44	20/19134	SOURABH SHESHMA	25	22

Attested by the Principal,  
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राजा गार्डन, नई दिल्ली-110027  
Raja Garden, New Delhi-110027

S. No.	Roll Number	Student's Name	Total IAMaximum Marks25	Total IAMarks Obtained25
45	20/19138	SAHIL BHARTI	25	23
46	20/19139	PRATEEK BADOLA	25	23
47	20/19140	AMAN PAL	25	23
48	20/19150	AMAN KUMAR	25	0
49	20/19151	SONALI	25	23
50	20/19153	RAMEN KAR	25	0
51	20/19154	ABHINAV SHARMA	25	23
52	20/19155	ARYAN SHARMA	25	23
53	20/19157	DEEPAK SINGH SINGWAL	25	22
54	20/19158	AKSHEE	25	22



B. Sc. Life Sciences II - ENVIRONMENTAL SCIENCE [72182801] - DR. VIRAT - ENVIRONMENTAL STUDIES - [IA-2020]

S. No.	Roll Number	Student's Name	Total IAMaximum Marks25	Total IAMarks Obtained25
1	20/23120	PRATIBHA JAIN	25	23
2	20/23121	DIYA GARG	25	19
3	20/23122	SANSKRITI DIMRI	25	25
4	20/23123	DIVYA	25	18
5	20/23125	KAUSHAMBI GOSWAMI	25	23
6	20/23127	SIDDHARTH	25	23
7	20/23128	ISHFAQ SYED WANI	25	22
8	20/23129	ANU	25	20
9	20/23131	KANISHKA GOYAL	25	24
10	20/23134	ABHILASHA SHEKHAWAT	25	25
11	20/23136	LAKSHAY VIJAYI	25	24
12	20/23138	KHUSHBOO YADAV	25	24
13	20/23140	KIRTI KUMAR	25	23
14	20/23141	PRERNA MEHTA	25	24
15	20/23143	MUSKAN	25	24
16	20/23144	ANJALI	25	0
17	20/23146	ABDULLATIF	25	21
18	20/23147	TANU PRIYA PAL	25	23
19	20/23149	CHARULATA JOSHI	25	22
20	20/23150	KHURSHEED ALAM ALAM	25	20
21	20/23151	SHIVANI	25	22
22	20/23152	NANDINI JAIN	25	22
23	20/23153	SANJANA	25	0
24	20/23157	GEETA RANI	25	25
25	20/23158	NOMITA VERMA	25	25
26	20/23161	NAAZ FATIMA	25	19
27	20/23163	TANNU	25	23
28	20/23165	VASUNDHARA NEGI	25	22
29	20/23166	VISHAKHA	25	20
30	20/23167	PRACHI KUMARI	25	21
31	20/23168	BABY	25	24
32	20/23169	MANISHA BELWAL	25	25
33	20/23170	DIPESH KUMAR	25	22
34	20/23173	HRISHABH CHUNYANA	25	21
35	20/23175	KUMARI CHANDNI	25	19
36	20/23176	MOHNISH ANAND	25	15
37	20/23177	RAHUL	25	22
38	20/23178	UDAYVEER	25	18
39	20/23179	GYANENDRA RANJAN	25	25
40	20/23180	LAKSHITA SAINI	25	22
41	20/23181	SUSHMA PAL	25	23
42	20/23182	NISHANT	25	25

## B. Sc. Life Sciences II - ENVIRONMENTAL SCIENCE [72182801] - DR. VIRAT - ENVIRONMENTAL STUDIES - [IA-2020]

S. No.	Roll Number	Student's Name	Total IAMaximum Marks25	Total IAMarks Obtained25
1	20/23001	ISHITA GOEL	25	23
2	20/23006	ANIKET CHAKRAVARTI	25	0
3	20/23012	MAYANK	25	24
4	20/23014	SWATI MALIK	25	22
5	20/23016	KARUNA MADAN	25	24
6	20/23019	CHANDAN DUBEY	25	20
7	20/23024	NIRMIT KUMAR	25	25
8	20/23027	TANISHQ KANOJIA	25	22
9	20/23031	MANIKA GUPTA	25	24
10	20/23036	HIMANI	25	24
11	20/23037	KHUSHBOO KUMARI	25	0
12	20/23038	PARTH CHOPRA	25	0
13	20/23046	HABIBA WAHID	25	24
14	20/23047	SNEHA KUSHWAHA	25	23
15	20/23051	VANSHIKA	25	23
16	20/23057	MEGHA CHAUHAN	25	21
17	20/23065	TANU	25	21
18	20/23067	NEHA	25	23
19	20/23069	GAURAV KUMAR	25	23
20	20/23070	RIYA MISHRA	25	24
21	20/23072	ZEENAT ANSARI	25	22
22	20/23077	SHUBHANSHU KUMAR	25	23
23	20/23084	AAKASH JHA	25	18
24	20/23088	ROSHNI	25	23
25	20/23089	RAHUL	25	0
26	20/23094	AKRITI SUMAN	25	23
27	20/23096	ANISH KUMAR CHOUDHARY	25	24
28	20/23098	NAMAN LAL NIHAL	25	23
29	20/23101	NISHTHA CHAURASIA	25	25
30	20/23102	SWEETY	25	0
31	20/23103	JATIN KUMAR	25	18
32	20/23106	MILLEE	25	19
33	20/23107	MUNEEB UL MUSHTAQ MIR	25	18
34	20/23108	VANSHITA	25	23
35	20/23109	NIKHIL DABAS	25	0
36	20/23110	YASHASVI SAHU	25	25
37	20/23113	ASHAQ HUSSAIN	25	18
38	20/23114	JYOTI SAXENA	25	18
39	20/23115	SOMYA CHANDRAVANSHI	25	21
40	20/23116	NIKHAT PARVEEN	25	20
41	20/23118	KHUSHI LAKHWANI	25	24
42	20/23119	DEEPALI	25	24

**B. Sc. Physical Science (C.S.) I - ENVIRONMENTAL STUDY [72182801] - DR.  
VIRAT - ENVIRONMENTAL STUDIES - [IA-2020]**

S. No.	Roll Number	Student's Name	Total IAMaximum Marks25	Total IAMarks Obtained25
1	20/63001	VISHAL	25	24
2	20/63002	MAHIPAL SINGH	25	25
3	20/63003	LATA YADAV	25	25
4	20/63005	RAHUL SEHRAWAT	25	25
5	20/63007	ABHIJEET	25	21
6	20/63011	SAURABH CHAUDHARY	25	17
7	20/63014	JYOTI	25	25
8	20/63015	ANKUR KUMAR	25	24
9	20/63019	PRASHANT MAURYA	25	25
10	20/63020	VANI MALHOTRA	25	25
11	20/63021	VIVEK KUMAR	25	25
12	20/63024	URVASHI SINGH	25	0
13	20/63026	HARSH SHEKHAWAT	25	24
14	20/63027	SHAAN ALAM	25	23
15	20/63028	DIPESH KUMAR BISHNOI	25	22
16	20/63033	PRAVEEN KUMAR	25	25
17	20/63037	KAMINI TIWARI	25	25
18	20/63040	SAURABH SINGH	25	25
19	20/63044	GARIMA SHARMA	25	24
20	20/63045	AYUSH NEGI	25	23
21	20/63047	SHREYA	25	25
22	20/63052	AAYUSH JHA	25	25
23	20/63056	NAVEEN KUMAR	25	22
24	20/63059	EZAZ UL HOQUE	25	0
25	20/63062	PRABHAT TOMAR	25	0
26	20/63063	ANESH YADAV	25	20
27	20/63064	PRASHANT PANWAR	25	24
28	20/63066	JITENDER	25	25
29	20/63067	YASHWANT JODHA	25	25
30	20/63068	GAURAV KUMAR	25	24
31	20/63069	SHUBHAM GARG	25	18
32	20/63071	KHUSHHAL GARG	25	25
33	20/63072	HEMANT	25	25
34	20/63074	AJAY JOSHI	25	0
35	20/63078	SAHIL CHAHAR	25	24
36	20/63080	ROHIT KUMAR	25	24
37	20/63081	VINEET KUMAR SAHAY	25	24
38	20/63082	NIRMAL PRASAD	25	0
39	20/63083	NARAYAN KUMAR	25	24
40	20/63085	SOURAV KUMAR	25	25
41	20/63086	AJAY	25	14
42	20/63087	PRAVESH KUMAR	25	25
43	20/63088	KAPIL	25	23
44	20/63090	VAIBHAV BHARDWAJ	25	24

Attested by the Principal,  
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*Shivaji*

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राजा गार्डन, नई दिल्ली-110027  
Raja Garden, New Delhi-110027

S. No.	Roll Number	Student's Name	Total IAMaximum Marks25	Total IAMarks Obtained25
45	20/63091	KUMAR AMRENDAM	25	24
46	20/63092	SALONI SINGH	25	23
47	20/63098	ABHIJEET PUNIA	25	25
48	20/63099	UTKARSH GUPTA	25	24
49	20/63100	SAJAL VERMA	25	24
50	20/63101	AYUSH V P	25	24
51	20/63104	SANJAY MEENA	25	25
52	20/63105	KUSHAGRAH TRIPATHI	25	20
53	20/63106	YASH SHUKLA	25	24
54	20/63107	DIPANSHU LOHANI	25	23
55	20/63108	NAVNEET	25	23
56	20/63110	RAJNEESH SINGH	25	21
57	20/63111	SAMARTH SHARMA	25	25
58	20/63112	VANSH AGRAWAL	25	18
59	20/63115	RAJESH KUMAR	25	0
60	20/63118	ROHIT GULIA	25	22
61	20/63119	MANSHU DRALL	25	0
62	20/63120	SWATANTRA KUMAR	25	0
63	20/63121	YOGESH KUMAR	25	24



**B. Sc. Physical Science (Chem.) I - ENVIRONMENTAL STUDY [72182801] - DR.  
ASHWANI SHARMA - ENVIRONMENTAL STUDIES - [IA-2020]**

S. No.	Roll Number	Student's Name	Total IAMaximum Marks25	Total IAMarks Obtained25
1	20/62004	DEEPIKA	25	19
2	20/62008	DEEPIKA	25	19
3	20/62021	GAJENDRA PAL SINGH	25	18
4	20/62022	JAI CHHIKARA	25	0
5	20/62026	KUNIKA CHANDRA	25	19
6	20/62027	RIYA ARYA	25	18
7	20/62029	RAHUL DAHIYA	25	0
8	20/62031	ANGAD DAHIYA	25	19
9	20/62034	INDERJEET SINGH	25	20
10	20/62037	NISHITA YADAV	25	19
11	20/62038	PRASHANT KUMAR	25	0
12	20/62039	PRIYA	25	20
13	20/62041	AKANSHA	25	19
14	20/62045	VISHAL BHARDWAJ	25	19
15	20/62046	LOKESH	25	0
16	20/62049	TAMANNA	25	19
17	20/62050	DEEPESH TIWARI	25	20
18	20/62051	ARYAMAN AHLAWAT	25	19
19	20/62056	SARGUN	25	18
20	20/62057	KISHOR KUMAR YADAV	25	18
21	20/62059	NITISH KUMAR KUMAR	25	0
22	20/62060	RAVI MADHWAL	25	0
23	20/62061	DEEPANSHU	25	0
24	20/62063	ANMOL	25	0
25	20/62064	SHYAM SINGH	25	0
26	20/62065	RANJEET KUMAR	25	0
27	20/62066	RITU KUMARI	25	17

**B. Com. (Hons.) I - AECC-Environmental Science [1] - DR. ASHWANI SHARMA  
- ENVIRONMENTAL STUDIES - [IA-2020]**

S. No.	Roll Number	Student's Name	Total IAMaximum Marks25	Total IAMarks Obtained25
1	20/51001	HIMANSHU	25	0
2	20/51002	PRIYANKA	25	20
3	20/51006	NUPUR SHARMA	25	20
4	20/51009	NITIN YADAV	25	19
5	20/51010	VIKAS	25	19
6	20/51011	PRIYANSHU LAKESH	25	19
7	20/51012	SURAJ	25	20
8	20/51015	KHUSHI PUROHIT	25	19
9	20/51017	KALPANA	25	18
10	20/51019	KISHANSHU KUMAR	25	19
11	20/51022	GARIMA	25	19
12	20/51028	AKSHIT GARG	25	19
13	20/51040	ANSHIKA KATHURIA	25	21
14	20/51042	DIVYA HINDUJA	25	22
15	20/51043	ADITI	25	19
16	20/51044	ANANYA VAIDEHI	25	19
17	20/51045	JAISHREE	25	19
18	20/51046	EKTA RANI	25	20
19	20/51047	PRIYANSHU	25	18
20	20/51056	KHUSHI DUBEY	25	19
21	20/51057	KANNISH	25	19
22	20/51062	KHUSHI SAINI	25	20
23	20/51066	ANGEL	25	19
24	20/51068	RAJAT GUPTA	25	20
25	20/51069	SHREYA GOYAL	25	20
26	20/51071	ANSHITA BIBLANI	25	21
27	20/51072	LAKSHAY	25	19
28	20/51073	NANDINI GUPTA	25	19
29	20/51074	ANKUR CHOUDHARY	25	21
30	20/51077	SHARMISHTHA BARTHWAL	25	19
31	20/51078	VICKY SIRARI	25	21
32	20/51079	CHAITANYA BHATIA	25	19
33	20/51081	RINUSHKA SINHA	25	20
34	20/51082	VIDHI SAXENA	25	19
35	20/51086	ISHAN DEV CHOLA	25	20
36	20/51087	DIYA KALRA	25	20
37	20/51088	MEHA MADHRA	25	20
38	20/51091	BHAVYA ADVANI	25	19
39	20/51093	RISHIKA	25	19
40	20/51097	ANANYA SABOO	25	20
41	20/51098	RISHABH KUMAR	25	19
42	20/51099	NANCY	25	18
43	20/51106	VAMIKA BEHL	25	20
44	20/51108	DHRUV PALWAL	25	19

Attested by the Principal,  
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*Shivaji*

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Raja Garden, New Delhi-110027

S. No.	Roll Number	Student's Name	Total IA Maximum Marks	Total IA Marks Obtained
45	20/51109	ANSHUL SETHI	25	0
46	20/51111	HARDIK MULCHANDANI	25	21

Attested by the Principal,  
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*Shivaji S. S. D. C.*  
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दिल्ली विश्वविद्यालय / (University of Delhi)  
राजा गार्डन, नई दिल्ली-110027  
Raja Garden, New Delhi-110027

**B. Com. (Hons.) I - AECC-Environmental Science [1] - DR. ASHWANI SHARMA  
- ENVIRONMENTAL STUDIES - [IA-2020]**

S. No.	Roll Number	Student's Name	Total IAMaximum Marks25	Total IAMarks Obtained25
1	20/51114	YOGESH	25	21
2	20/51120	SHUBHAM	25	19
3	20/51121	VANSHIKA YADAV	25	20
4	20/51122	POOJA RASTOGI	25	19
5	20/51123	VASU VOHRA	25	20
6	20/51125	ROHIT KUMAR	25	20
7	20/51126	UTKARSH KUMAR SUMAN	25	19
8	20/51127	TUSHAR BAJAJ	25	19
9	20/51128	INDER KUMAR	25	19
10	20/51129	ROHIT MANIK	25	19
11	20/51130	MUSKAN SHARMA	25	18
12	20/51131	TANISHKA PACHOURI	25	20
13	20/51132	PRIYANKA MASSON	25	21
14	20/51134	PARITOSH KHANTWAL	25	19
15	20/51138	SIDDHARTH	25	19
16	20/51139	PRIYANSH JAIN	25	19
17	20/51142	VISHAL BHORWAL	25	19
18	20/51143	SAMARTH WADHWA	25	21
19	20/51144	SAHIL GOGIA	25	18
20	20/51145	AARAV TANWAR	25	19
21	20/51147	RIDDHI JAIN	25	21
22	20/51151	ISHITA GOEL	25	20
23	20/51152	AKSHAY GANDHI	25	19
24	20/51153	AMAN JAIN	25	19
25	20/51154	KESHAV GOEL	25	20
26	20/51155	SAMARTH MITTAL	25	20
27	20/51157	BHAVESH KUKREJA	25	20
28	20/51158	SIDDHARTH CHAKARVERTI	25	18
29	20/51159	DEVANSH MUNISH BEHL	25	18
30	20/51160	PALAK GARG	25	17
31	20/51161	PIYUSH DAGAR	25	17
32	20/51162	AADIT GOEL	25	19
33	20/51163	MADHAV BANSAL	25	19
34	20/51164	HEMANT SINGH	25	20
35	20/51167	LAVANYA SHANKAR	25	18
36	20/51169	JATINJIT SINGH	25	19
37	20/51170	VIKAS YADAV	25	21
38	20/51171	ANIKET KUMAR	25	19
39	20/51172	ASHISH YADAV	25	18
40	20/51173	MOHAMMAD HUZAIFA SALMANI	25	18
41	20/51175	VARSHA CHOUDHARY	25	18
42	20/51176	AMARJEET YADAV	25	19

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S. No.	Roll Number	Student's Name	Total IAMaximum Marks25	Total IAMarks Obtained25
43	20/51177	AKASH PAL	25	18
44	20/51178	SAMBHAV MONU	25	19
45	20/51179	AMAN YADAV	25	19

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Roll Numk Student's Name  
18/23002 GUNJITA  
18/23007 GYANVI BAGWANI  
18/23010 MUSKAN GANGWANI  
18/23016 GAURI BANSAL  
18/23020 MUSKAN VERMA  
18/23021 SHRISTI PATHAK  
18/23041 YASH YADAV  
18/23047 NAMAMI BHARATI  
18/23048 YOGITA MISHRA  
18/23049 MANISHA  
18/23050 RUPANSHI  
18/23054 SUGAM KUMAR  
18/23056 ISHEETA MALHOTRA  
18/23057 BHARAT SHARMA  
18/23058 KANN  
18/23065 PARAS MAAN  
18/23066 RIKHIL  
18/23070 ANKUR  
18/23075 SANGYA  
18/23076 DEEPSHIKHA  
18/23079 KUNAL  
18/23080 HARSH NARANG  
18/23083 PRACHI  
18/23084 RISHA  
18/23094 NEHA KUMARI  
18/23095 YASHIKA  
18/23096 BHAWNA  
18/23098 SANAMACHA  
18/23099 GURLEEN  
18/23100 VIKAS  
18/23101 NITIKA VAID  
18/23107 PRIYA PAL  
18/23109 PRIYANKA YADAV  
18/23113 E N ROHITH SAI  
18/23122 OYIMANG TALOM  
18/23126 SWATI KHATRI  
18/23134 DEEPANSHU  
18/23137 NANCY GARG  
18/23140 PARIKSHIT VATS  
18/23143 SURBHI BHAMBRI  
18/23148 BHUMIKA KHATREJA  
18/23149 GEETANJALI BHATT  
18/23150 KARTIKAY BHARDWAJ  
18/23152 AADYA VASHISTHA  
18/23154 SHIVAM SINGH  
18/23155 NISHITA RATHI  
18/23156 DIVYA RAJPUT

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18/23158 NAMRA ANSARI

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B.Sc (P) LS IV Sem	19/23052	VISHAL SINGH
B.Sc (P) LS IV Sem	19/23054	SHAHIN MALIK
B.Sc (P) LS IV Sem	19/23058	AMAN TIWARI
B.Sc (P) LS IV Sem	19/23063	MRINALINI BISWAKARMA
B.Sc (P) LS IV Sem	19/23066	RITU GAUR
B.Sc (P) LS IV Sem	19/23076	VANSHIKA CHAUHAN
B.Sc (P) LS IV Sem	19/23081	ARUSHI GUPTA
B.Sc (P) LS IV Sem	19/23084	ADITI JAIN
B.Sc (P) LS IV Sem	19/23087	HARSHITA PANDEY
B.Sc (P) LS IV Sem	19/23088	PRIYANSHU PARCHA
B.Sc (P) LS IV Sem	19/23095	TULIKA RAJPUT
B.Sc (P) LS IV Sem	19/23097	ABHISHEK KUMAR
B.Sc (P) LS IV Sem	19/23101	NITIN JANGRA
B.Sc (P) LS IV Sem	19/23112	SREELAKSHMI S
B.Sc (P) LS IV Sem	19/23116	NEHA BHARDWAJ
B.Sc (P) LS IV Sem	19/23119	ROHIT KUMAR
B.Sc (P) LS IV Sem	19/23122	MUSKAAN DIMRI
B.Sc (P) LS IV Sem	19/23123	ISHA
B.Sc (P) LS IV Sem	19/23125	KANIKA JAIN
B.Sc (P) LS IV Sem	19/23129	MEGHA SOVANI
B.Sc (P) LS IV Sem	19/23135	DEEPIKA PANCHPAL
B.Sc (P) LS IV Sem	19/23139	NEHA PAL
B.Sc (P) LS IV Sem	19/23140	NIKHIL SINGH
B.Sc (P) LS IV Sem	19/23142	KANIKA RAWAT
B.Sc (P) LS IV Sem	19/23146	ISHITA JAIN
B.Sc (P) LS IV Sem	19/23150	AKSHITA SHARMA
B.Sc (P) LS IV Sem	19/23153	SHAIKH FARINAZ
B.Sc (P) LS IV Sem	19/23154	MOHD SHARIQ



## Report

# An Online Visit to Central Sericultural Research and Training Institute (CSRTI), Mysuru



Sericulture-agro based cottage  
industry



**Sunyna Saun**  
**B.Sc. Life Science (Sem V)**  
**Section - B**  
**Roll no. - 18/23110**  
**Zoology SEC - Sericulture**

27th November, 2020

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# Acknowledgement

**T**he satisfaction that accompany the successful completion of this report, would be incomplete without the mention of the people who made it possible, whose constant guidance and encouragement aided me throughout.

I deem it a proud privilege to extend my greatest sense of gratitude to our principal **Mr. Shiv Kumar Sahdev** for providing adequate facilities and infrastructure for this project. That remains a backdrop of all my effort.

I would like to express my special sense of gratitude to my teacher **Mrs. Nidhi Garg**, who gave me an opportunity to do this report on **“An Online Visit to Central Sericultural Research and Training Institute, Mysuru”** which also helped me in doing a lot of research and I came to know about loads of new information. Without her guidance this report wouldn't have been possible.

And of course nothing would have come true without my parents and friends who helped me a lot in finalizing this project within the limited time frame. They have always been the source of my motivation.

May Almighty richly bless them all.

***Thank You!***

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# INTRODUCTION

**C**entral Sericultural Research & Training Institute is located in the southern part of Mysore city on the H.D.Kote - Manandavadi Road at about 8 km from Railway Station.



Central Sericultural Research & Training Institute (CSRTI), Mysore, the pioneer research institution in the field of sericulture, was established at Chennapattana in 1961, under the administrative control of for the over all development of silk industry in the country. During the course of development the Institute was shifted to Mysore the princely city in the year **1963**.

Over the years the Institute has grown in to a full fledged centre of excellence and provided commendable support to enhance silk productivity and quality ensuring generation of higher income for the farmers. It has provided commendable support to enhance silk productivity and quality ensuring generation of higher income for the farmers.

The institute has marked a niche as a leading **R & D institution** on tropical sericulture with its well-developed sericulture infrastructure and strong indigenously developed technological base. Adopting both lab to land and land to lab concepts, it carries out research in different aspects of mulberry sericulture from soil to cocoon production covering all the aspects of on farm activities to cater to the needs of on-farm sector.

*The institute has also made a dent as a center for higher learning and advanced training on domestic and international front.*



# History of CSRTI, Mysuru

The origin and growth of sericulture in south India may be traced back as a result of official experimentation and promotion by Tipu sultan in the state of Mysore. It was systematically organized and developed by the, then ruler of erstwhile Mysore State between 1780 and 1790. The support was continued later by Mysore rulers and the industry flourished and grew after the restoration of Krishna Raj Wadeyar.

To continue such developmental efforts and to conduct research activities in the tropical sericulture areas, Central Sericultural Research Institute (CSRI) was established in Channapatna by the Government of Mysore in 1955. Later, an **All India Sericultural Training Institute (AISTI) was established by Central Silk Board at Mysore during 1958**, to cater to the training needs of the sericulturists in South India.



All India Sericultural Training Institute (AISTI),  
1958

The establishment process of Central Sericultural Research and Training Institute, Mysore commenced when CSB took over Central sericulture research institute (CSRI), Channapatna in **1961**. Later during 1964/65 the All India Sericultural Training Institute (AISTI), Mysore got merged into Central Sericultural Research Institute (CSRI) to become Central Sericultural Research & Training Institute, Mysore.

Over the years, it has grown in to a full-fledged centre of excellence and internationally acclaimed premier research institute for tropical sericulture in South East Asia.

# CSRTI, Mysuru

## (The R&D Organisation of Central Silk Board)

Central Sericultural Research & Training Institute (CSRTI), Mysore, the pioneer research institution in the field of tropical sericulture, was established at Chennapattna in 1961 under the administrative control of Central Silk Board, Ministry of Textiles, Government of India for the over all development of silk industry in the country. During the course of development the Institute was shifted to Mysore the princely city in the year 1963.

The CSRTI is located in the southern part of Mysore city on the H.D.Kote - Manandavadi Road at about 8 km from Railway Station. Mysore has a long illustrious history of being one of the major seats of learning in southern India. Apart from being the centre of advanced studies under University of Mysore, the city also houses a number of academic and research institutions of International repute. Mysore is situated at an altitude of **759.9m** (2492 ft) above mean sea level, with latitude **12.18°N** and longitude **76.42°E**. Mysore receives an average rainfall of **710 mm** with the temperature ranging between 33°C and 18°C. It is well connected to the important cities by rail and road. The nearest airport is at Bangalore, (the capital city of Karnataka), which is only 140 km away.

Presently, the campus of CSRTI, Mysore spreads over 53.60 ha with the mulberry farm of 25.84 ha. **In CSRTI, Mysore, - dedicated scientific personnel are working in - well-equipped research laboratories concentrating on different areas in mulberry cultivation, silkworm rearing, sericultural engineering, extension, economics and training in the main campus.** Besides, this institute has a large extension network comprising 4 regional research stations and 33 extension centers/sub-units and 2 breeding stations spreading across Karnataka, Andhra Pradesh, Tamil Nadu, Kerala, Maharashtra and Madhya Pradesh.

The institute has been continuously striving for higher productivity of mulberry/silkworm races and refinement of technologies. In nutshell, the humble institute, which has commemorated its Golden Jubilee during 2011, has metamorphosed into a premier R&D institute, par excellence. With the commendable support extended by the institute, the southern states today contribute the lion's share (over 90 %) of the total silk produced in the country.

The Institute has also obtained internet domain registration and the address is [www.csrtimys.res.in](http://www.csrtimys.res.in).



# Vision and Objectives of CSRTI

## **Vision:**

To become an **International Sericulture Institute Par-Excellence in Bivoltine Sericulture.**

## **Mission:**

To achieve excellence in application oriented research to transform Indian sericulture Industry from the subsistence level of production to a vibrant competitive commercial production base.



**Central Silk Board, Ministry of Textiles,  
Government of India**

## **Objectives and strategies :**

- Conduct scientific, technical, economic and social research with respect to silk production.
- Serve as a centre for collection and dissemination of information and advise on scientific, technical and economic matters concerned to sericulture industry.
- Serve as a centre for specialized extension service to the sericulture industry.
- Undertake training of scientific, technical and extension personnel at the managerial and operational cadres.
- Conduct commercial research and production for effective promotion and utilization of different research findings.
- Systematically identify the country's current and long term scientific and technological needs in the field of sericulture.
- Develop higher levels of innovation and excellence in the field of sericulture technology.
- Diversify and commercialise the sericulture sector in to seribusiness.
- Strengthen and enhance effectiveness of technology transfer and its adoption.

# Mandates of CSRTI

**Mandate :** The official policy of CSRTI includes the following elements -

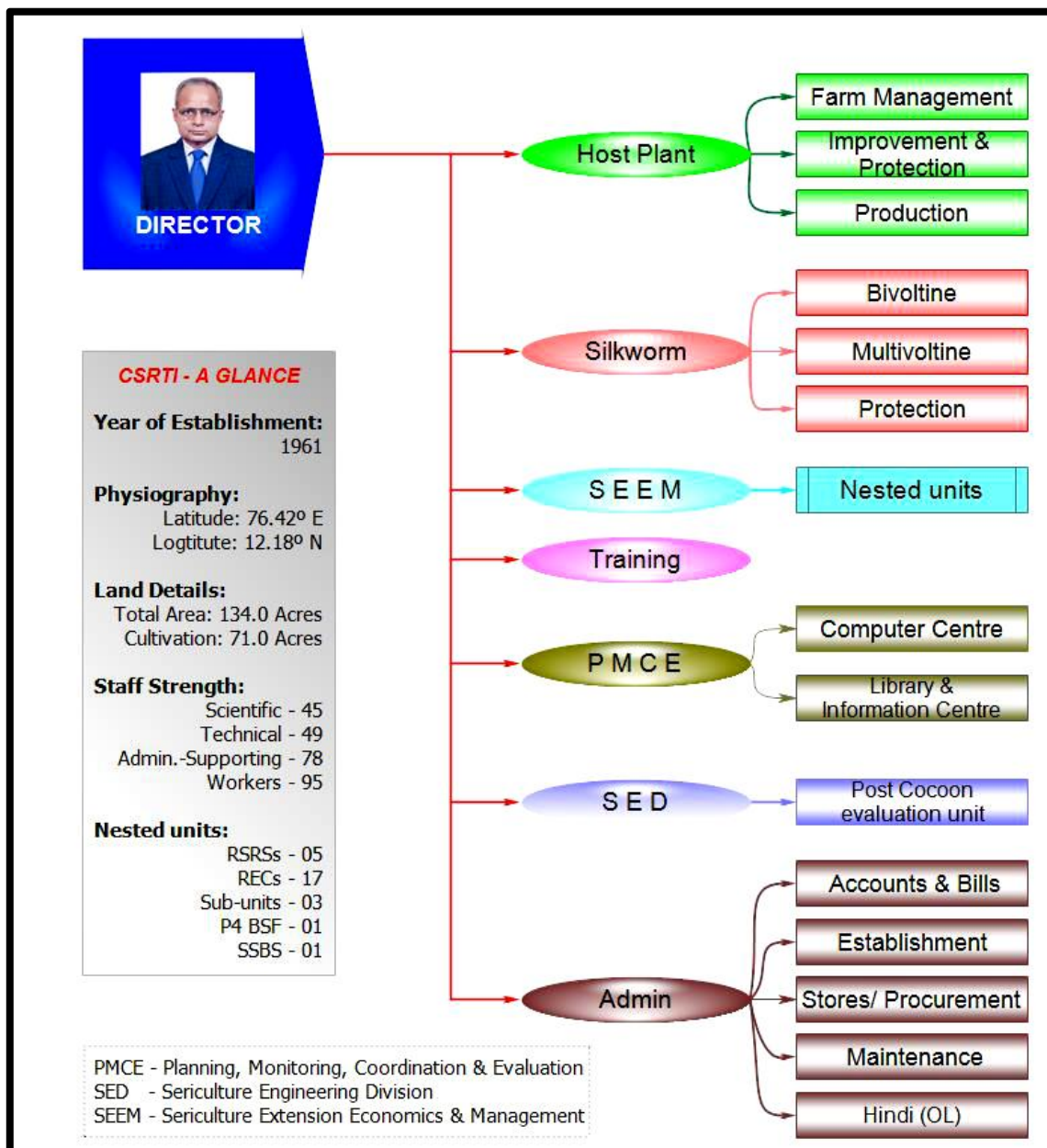
- Development of package of practices for Host Plant, Silkworm rearing, Post Cocoon Technology and its dissemination.
- Commercialization of products & Technologies and industry interface.
- Efforts to reduce input cost & drudgery and by-product utilization to increase net income and productivity.
- Enhance production of international grade silk for import substitution and earning foreign exchange.
- Human Resource Development.
- Maintenance of Breeders Stock.
- Disease & Pest Monitoring and Forecasting and Forewarning.
- Dissemination of knowledge, R&D innovations and package of practices through ICT tools.
- Undertake collaborative Research Programmes/Projects with reputed National and International R&D institutions.
- Strengthening institutional framework to support ongoing research, allied activities, scientific and technical services.
- Inter institutional collaboration for better synergy.
- Studies on techno-economic feasibility of sericulture technologies.
- Providing technical and consultancy services.
- Conduct scientific, technical and economic research to enhance production, productivity and quality of Indian silk.
- Development of package of practices for mulberry and silkworm rearing and its dissemination.
- Commercialization of products and Technologies
- Transfer of Technology
- Enhance production of import substitute silk through Transfer of Technology
- Training
- Strengthening institutional framework to support ongoing research and related programmes.
- Maintenance of Breeders Stock (P4 layings).
- Publication of R&D innovations and package of practices for knowledge dissemination.
- Disease Forecasting and Forewarning.
- Collaborative Research Programmes with other R&D organizations in India and abroad.





# Organizational set-up at CSRTI, Mysore

CSRTI is the largest and most diversified institution engaged in Sericultural R & D in the country, supported by about **200 Scientists, Agricultural Engineers, Sociologists and Economists**, working in close coordination, both at main institute and in the nested units spread over in the southern states besides Maharashtra, Gujarat & Madhya Pradesh for development of appropriate technologies and their transfer. The R & D activities and technology developments are carried out in different sections of the four major divisions: Moriculture, Sericulture, Extension and Training. The Director monitors the progress of the R & D activities of the Institute and the nested units with the support of Planning, Monitoring, Coordination and Evaluation cell.



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**Organization structure of various divisions and activities in CSRTI,**

# Infrastructure/Facilities at CSRTI

- Well equipped Mulberry Breeding & Genetics, Mulberry Agronomy. Soil Science & Chemistry, Mulberry Disease & Management, Mulberry Physiology, Silkworm Breeding, Silkworm Pathology & Diseases Management, Silkworm Rearing Technology, **Silkworm & Mulberry Pest management Laboratories** with all modern Facilities to carry out advanced Research in sericulture science Such as silkworm breeding, Silkworm pathology, mulberry Breeding, mulberry cultivation, mulberry pest and diseases management, etc. with attached mulberry gardens and rearing houses.
- Large scale **mulberry gardens and silkworm rearing houses** for technology validation and farmers training.
- **Model Chawki Rearing Centre (CRC)** of 5000- 6000 dfls capacity to promote the concept of commercial CRC.
- Fully equipped **Molecular Biology and Biotechnology Laboratory** to conduct advanced research at molecular levels of both mulberry & silkworm.
- **Sericultural Engineering workshop** facilities to support in designing prototype development and fabrication of machines/ equipments. The centre has been developed into centre of excellence for design, development, testing and demonstration of sericulture equipments and machines.





- X• **Computer Center** provides computing and internet facility all sections through LAN, for sharing the files and information. The LAN also supports on-line and off-line presentations through multimedia / LCD projectors.
- **Bioinformatics Center** established with the financial assistance of DBT under the National Bioinformatics Network and provides database retrieval service to the scientists of the different Institutions involved in Seri biotechnology research of the southern states.
- **Library**, the main information resource centre, is equipped with all modern facilities has a collection of 10434 books, 6524 bound volumes of scientific journals and 85 journals. In addition, it also maintains a collection of dissertations (272), Ph.D. Theses (32) and technical reports (29). It also provides CD-ROM Database (AGRIS, BIOSIS, BIOTECHNOLOGY CITATION INDEX, EKASWA (Patenting) and DATABASE facilities to its members and bring out half yearly report “Seridoc” besides publishing and compilation of literature on sericulture..
- Two **seri-technology museums** and IVRS system provides latest sericulture information





## Infrastructure Facilities

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- Well-equipped laboratories, mulberry gardens and rearing houses to carry out advanced research
- Large scale rearing houses for technology validation and farmers' training
- Model chawki rearing centre (CRC) to promote the concept of CRC
- Engineering Division with excellent facilities to support designing, development and fabrication of machines /equipments
- Video Conference Studio to ensure faster communication and efficient transfer of technology for effective interactions with nested units, DOSs and other organizations
- Computer center provides internet connectivity to all through LAN with print/file share support
- Bioinformatics Center (NBN Sub-DIC: DBT) provides database retrieval services
- Library Services (11215 books; 8023 bound volumes of scientific journals; 58 journals; dissertations- 310; theses-51; technical reports and CD-ROM database-AGRIS).



**Beautiful campus at CSRTI, Mysuru**



**Pest Management Laboratory at CSRTI, Mysuru**



**Young age Silkworm Rearing House**



**Silkworm Breeding Center**



**Hostel facility at CSRTI, Mysuru**

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# Overview of activities at CSRTI

## Research and Development

- Silkworm rearing
- Mulberry

## Training

- Central Sector Schemes
- Integrated Skill Development Scheme
- Certificate course
- Need based training to farmers
- Need based training to DOS officials



**Bio-informatics and Training wings**

## Extension activities

- Toll free communication to contact scientists by farmers
- Guidance to farmers in solving field problems
- Supply of quality mulberry cuttings and seed material
- Consultancy to farmers to take sericulture
- Training cum demo of rearing Chawki worms
- Transfer of Technology to field

## Mechanization in Sericulture

- Demonstration of different Sericulture machines
- Design and development of silkworm rearing houses for different agro-climates
- Training programmes on mechanization in sericulture
- Development of mechanized mulberry farms and silkworm rearing



## Training cum demonstration centre

## Chawki rearing centre

## Bio-informatics

## Library and Documentation

- Bi-monthly farmers magazine (Kannada) - Reshmevahini
- Publication of Half yearly journals – Indian Journal of Sericulture & Seridoc.

## Soil Testing & Soil Analysis

**Chawki rearing center at CSRTI**



# Host Plant Division

Host Plant Division at CSRTI concerns with the production and availability of excellent quality mulberry leaves to the growing larvae of silkworms. It constitutes **Farm Management, Mulberry production, and its improvement and protection.**



## Farm Management -

MANDATE:

- To maintain host plant plantations & general plots and to supply quality foliage for silkworm rearing to the silkworm divisions.
- To raise and supply improved host plant seed material (cuttings, saplings).
- General maintenance & up keep of the institute & V.P.Farm. '
- To maintain tractor, power tiller & other farm implements & machinery.



Raising of mulberry saplings in nursery



Mulberry farm at CSRTI

## Mulberry Production -

MANDATE:

- To carryout research projects/ programmes for optimizing host plant yield through agronomical, nutritional packages and physiological approaches in collaboration with national & international Institutes.
- To undertake the research in the areas of mulberry, soil health management, soil fertility etc.
- To monitor the soil fertility status of mulberry gardens and creation of data base, issue of Soil Health Cards/Certificates.
- To test and certify of quality of Products/ Disinfectants.
- To undertake long term effect studies on mulberry cropping systems on soil biology and productivity.
- To evaluate the conjunctive use of nitrification inhibitory for efficient utilization of nitrogenous fertilizers.
- To undertake the studies on the factors influencing the nutrient uptake and its use efficient in mulberry.
- To carryout the studies in the area of agriculture engineering and to facilitate mechanization in crop production.
- To up keep of the scientific equipments in the their respective labs.



## Mulberry Improvement and Protection -

### VISION:

Developing qualitatively and quantitatively superior mulberry varieties adaptable to agro-climatic zones of South India.

### MISSION:

Evolution of high yielding mulberry varieties adaptable to varied agro-climatic conditions for increasing cocoon productivity and in turn silk production.



**Spraying of pesticides on Mulberry crop to protect it from pests**

### MANDATE:

- To undertake research projects/ programmes concerning host plant improvement by using Conventional breeding, Genetics, Tissue Culture, Molecular biology, Bio-informatics, Physiological and modern approaches in collaboration with national & international Institutes.
- To develop disease resistant and productive mulberry genotypes suitable to serizones of South India.
- To develop superior mulberry varieties suitable to moisture stress environments and drought conditions.
- To develop superior mulberry varieties by exploitation of hybrid vigour based on molecular diversity of promising parental lines.
- To undertake DNA marker aided analysis of mulberry gene bank for sustainable conservation and utilization in crop improvement.
- To undertake and monitor AICEM trails of the South zone.
- To act as the progenitor for supply of improved mulberry stocks to the test centres across the country.
- To undertake the development of transgenic mulberries for desirable trait utilisation.
- To undertake pre and post authorisation trails of improved mulberry varieties.
- To maintain breeders seed plots, demonstration plots and germplasm accessions.
- To undertake DUS trials to register mulberry varieties with PPV&FRA
- To carryout research for developing technologies/ packages for mulberry disease and pest management.
- To carryout survey and surveillance of mulberry and pests to develop forewarning systems.
- To develop a database of the mulberry diseases.
- To up keep of the scientific equipment in the their respective labs.

### **MULBERRY PROPOGATION TECHNIQUES**

Nursery for mulberry

Top working to replace local and other mulberry varieties

Multiplication techniques using green wood cutting





# Silkworm Division

The Silkworm Division at CSRTI, Mysuru takes care of the silkworm rearing and their protection, aiming at highest quality cocoons and silk fiber. This Division consists of **Bivoltine silkworm improvement and production**, **Multivoltine silkworm improvement and production**, and **Silkworm Protection**.

## Bivoltine Silkworm Improvement & Production -

### MANDATE:

- To undertake research project/ programme for silkworm improvement through conventional breeding, Genetics, Molecular biology, bioinformatics, physiological and modern approaches in collaboration with national & international Institutes.
- To develop robust bivoltine hybrids tolerant to high temperature using markers assisted selection.
- To develop productive NPV tolerant bivoltine breeds/ hybrids carrying BmNox marker assisted selection.
- To undertake the evaluation programmes of new or introduced silkworm hybrids for commercial exploitation.
- To undertake pre and post authorization of promising silkworm breeds/hybrids.
- To undertake the research on bye products and value addition of silkworms.
- To understand MSRAP trials and to act as the progenitor for evolved promising silkworm races.
- To maintain and supply breeders bivoltine stocks and P4 bivoltine stocks& to SSBS.
- To carryout research on reproductive potential of races/ hybrids newly developed.
- Bio Informatics support for R&D Activities.
- To up keep of the scientific equipments in the their respective labs.



**TT21 x TT56 - A robust Bivoltine Hybrid developed by CSTRI, Mysuru**

## Multivoltine Silkworm Improvement & Production -

### MANDATE:

- To undertake research project/ programme for silkworm improvement through conventional breeding and modern approaches in collaboration with national & international Institutes.
- To develop productive polyvoltine breeds having tolerance to high temperature and BmNPV.
- To undertake pre and post authorization of promising hybrids.
- To maintain and supply breeders multivoltine stocks.
- To carryout research on reproductive potential of races/ hybrids newly developed.
- To produce and supply silkworm seed of newly evolved races/ hybrids for field trails.



**Mysore gold (PM x FC2) - A new multivoltine x bivoltine hybrid for rearing throughout the**



**Cocoons of Mysore gold**

- To undertake multiplication of productive and new silkworm races (multi x bivoltine), generation of seed cocoons and F1 dfls.
- To carryout research for optimizing yield through improved rearing technology packages for races/ hybrids.
- To carryout research for development of tools/ equipment/ machines/ rearing houses for silkworm rearing.
- To undertake the large scale evaluation programmes of new or introduced silkworm hybrids for commercial exploitation.
- To up keep of the scientific equipments in the their respective labs.





## Silkworm Crop Protection -

### **MANDATE:**



- To carryout research for developing technologies/ packages for silkworm disease and pest management in collaboration with national & international Institutes.
- To carryout survey and surveillance of disease & pests and to develop forewarning systems.
- To maintain silkworm pathogens and evaluation of their virulence.
- To provide disease monitoring support to seed multiplication centres and PMC activities.
- To maintain, multiply and supply bio-control agents of host plant and silkworm pests.
- To undertake habitat studies – impact of crop diversity on conservation and performance of parasitoids and predators in mulberry crop systems.
- To undertake the management strategies for uzifly and Giant African Snail and Papaya Mealy bug, Leaf roller and other pests outbreaks in mulberry.
- To study the factors responsible for silkworm crop losses.
- To test and certify of quality of Products/Disinfectants.
- To up keep of the scientific equipments in the their respective labs.

**AMRUTH**

An Eco and user-friendly botanical based formulation for suppression/control of Grasserie and Flecherie diseases

- The first ever curative formulation against silkworm diseases
- Mix Amruth powder in water @ 20g/liter.
- Spray/sprinkle 70 ml of Amruth solution per kg of mulberry leaf/shoot and feed to silkworms after 5 minutes
- The product is licensed to two manufacturers and it is available as Nandi Amruth/Rainbow Amruth.

Schedule	Qty. of Amruth (g)	Qty. of water (ml)	Qty. of Leaf/shoot (kg)
After 2 <sup>nd</sup> moult 2 <sup>nd</sup> feed	7	350	5
After 3 <sup>rd</sup> moult 2 <sup>nd</sup> feed	53	2,650	38
After 4 <sup>th</sup> moult 2 <sup>nd</sup> feed	90	4,500	67
<b>Total</b>	<b>150</b>	<b>7,500</b>	<b>110</b>

**Amruth - botanical formulation fed to silkworms to control grasserie and flecherie in them**

# Sericulture Extension Economics & Management (SEEM) Division



**SEEM Division at CSRTI concerns with the institute's economical aspects, coordination with RECs & RSRs and nested units, and popularize its technologies and activities.**

### **MANDATE:**

- To carryout research in the areas of **Extension, Economics and Social sciences** related to sericulture.
- To undertake extension activities for dissemination and promotion of technologies.
- To popularize technologies through regional research stations and nested units.
- To undertake adoption & absorption of technologies with stakeholders and to assess adoption/absorption level.
- To coordinate On-Farm Trials, On-Station Trails, Multi-locational Trials, pre and post authorization trials etc.
- To monitor & coordinate the extension activities being taken at nested RSRs & RECs.
- To conduct & participate in extension communication programmes & RKM in Karnataka.
- To coordinate with departments of sericulture of State governments, NGOs etc.
- To formulate, monitor and execute the CPP/IVLP programmes for promotion of Bivoltine sericulture.
- To coordinate the various visitors service to the Institute.
- To develop the strategies for technology transfer to women sericulturists / stake holders and to augment their involvement.

Central Sericultural Research and Training Institute, Mysore

Attested by the Principal,  
Shivaji College (University of Delhi)

*Shivaji College*

कार्यवाहक प्राचार्य / Officiating Principal  
शिवजी महाविद्यालय / Shivaji College  
(दिल्ली विश्वविद्यालय) / (University of Delhi)  
राजा गार्डन, नई दिल्ली-110027  
Raja Garden, New Delhi-110027

## Extension Network -

The institute has organized a **three tier extension network** with the aim of taking technologies to the door step of sericulturists with the widespread extension network. From main research institute to Regional Sericultural Research Stations (RSRs). From RSRs to Research Extension Centers (RECs) and sub-units of RECs.

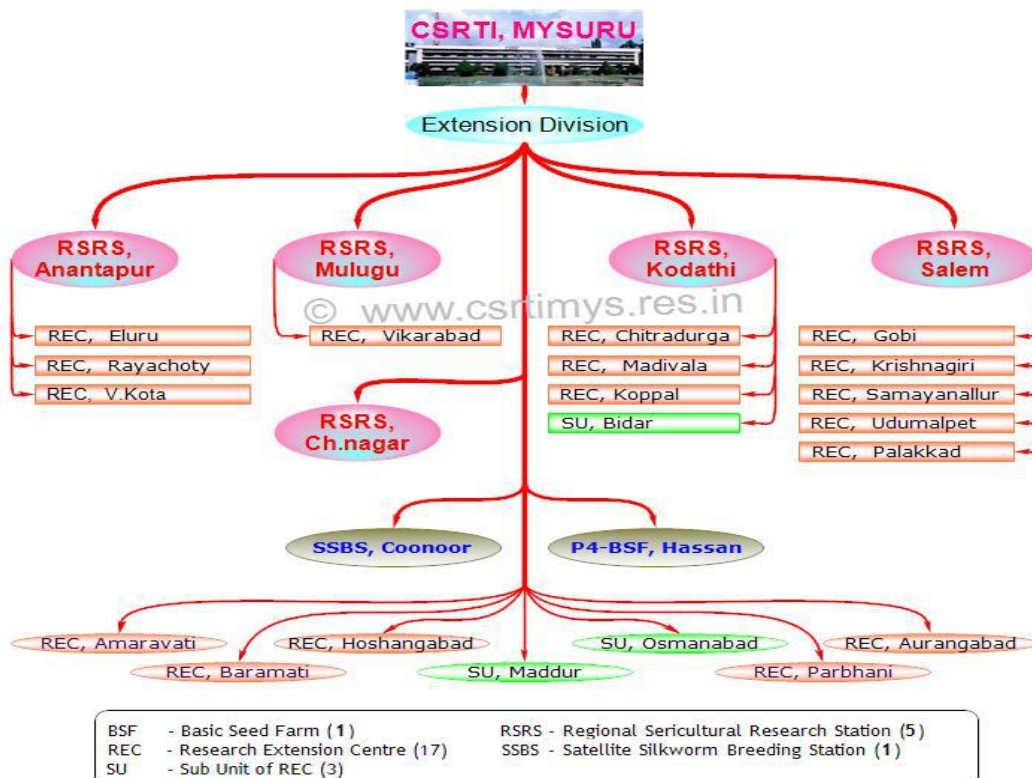
**CSRTI, Mysuru** → **Regional Sericultural Research Stations** → **Research Extension Centers**

### Mandate of RSRs:

- To identify regional specific problems in consultation with respective DOS.
- To conduct research to find solutions to regional specific problems pertaining to sericulture industry.
- To test verify the selected technologies developed by main institute and suggest fine tuning/modifications.
- To conduct On - Farm Trials (OFT) of the selected technologies with selected farmers and in DOS farmers.
- To conduct demonstrations of selected technologies through selected farmers.
- To popularize the proven technologies through various extension methods by cluster area approach.
- To conduct training for both gross root level extension staff of DOS and farmers on various technological aspects.
- To conduct survey on crop yield, economics and disease and pest surveillance for forecasting/ forewarning.
- To conduct TOT programme for DOS/NSSP once in a year.
- To establish service center/consultancy center and also sericulture technology park at RSRs for benefit of the sericulture farmers

### Mandate of RECs and Sub-Units of RECs:

- To conduct demonstrations of selected technologies through selected farmers.
- To popularize the proven technologies through various extension methods by cluster area approach.
- To Supply of inputs such as mulberry cuttings, silkworm seed, chawki worms and chemicals.
- To conduct training for both gross root level extension staff of DOS and farmers on various technological aspects.
- To conduct survey on crop yield, economics and disease and pest surveillance for forecasting/ forewarning.



**Extension network showing all the associated RSRs, RECs and SUs**

# Training Division

For the steady growth of an industry, a continuous flow of trained professionals is most important. The role of CSRTI has always been on high pedestal in the area of human resource development in sericulture. The CSRTI started generating the human resource in India and other countries, especially of tropical region, by imparting training in sericulture. These efforts resulted in the establishment of an **International Centre for Training and Research in Tropical Sericulture (ICTRETS)** in 1980 under the **Indo-Swiss Technical Cooperation** programme. This had a major impact in developing and spreading Indian Tropical Sericulture Technologies to various developing countries and thus helping in generation of adequate manpower to meet the various challenges of developing world, besides providing cooperation between India and other countries.



Center for Sericulture training at CSRTI, Mysuru

## MANDATE OF TRAINING DIVISION :

- To carryout research projects/programmes in the areas of human resources development for an easy understanding of sericulture.
- To conduct training programmes concerning structured and non-structured courses, in the areas of Skill development, Technology upgradation, Entrepreneurship development, for the benefit of sericulturists, teachers, bankers, in-service personnel of seri-sector, students and overseas trainees.
- To undertake and implement ISDS programme of MOT as per set action plan.
- To look after the training, hostel management and related activities there of.
- To undertake specialised training programmes in sericulture on demand from other organisations.
- To ensure demonstration of chawki rearing technology through model CRC.

The Institute also conducts several **human resource development programmes** for different target groups, in collaboration with various government agencies like **Department of Science & Technology (DST)** and **Department of Biotechnology (DBT)**, Govt. of India. The DBT has extended financial support for the establishment of an exclusive Seri-Technology Complex for Women, to update the knowledge and develop skill among women sericulturists. The DST has also extended assistance for the use of machines, hand tools, etc. to reduce the drudgery of women sericulture activities. These programmes for women are fully sponsored and participants are provided free boarding-loading and exemption of course fee.

The trainees from abroad are financially supported under various government programmes like **Indian Technical & Economic Co-operation (ITEC)**, **Special Commonwealth African Assistance Plan (SCAAP)**, Colombo Plan, **Indian Council of Cultural Relations (ICCR)**, etc.



## Training Programmes -

At CSRTI, Mysuru and its nested units of RSRS, RECs, many training programmes are being conducted as a part of **Human Resource Development (HRD)**, mainly to impart training on the updated technologies to the sericulture farmers, officials, entrepreneurs, researchers, students, cocoon producers, chawki rearers etc. They will be imparted with training under different programmes like – **TOP : Technology Orientation Programme, FST: Farmers' Skill Training, NBT : Need Based Training, IBT: Intensive Bivoltine Training**. Apart from the above, overseas training is also conducted such as: ITEC – sponsored by Ministry of External Affairs (MEA) Govt. of India and JOCV – sponsored by Japan International Cooperation Agency (JICA).

CSRTI, Mysore conducts regular training programmes to develop professionally competent technical and extension personnel for supporting the sericulture industry. It strengthens the institutional capabilities through continuing education programmes and training system and updating the knowledge



of trainees. It designs and implements the need based formal and informal training programmes. These programmes are tailor-made to meet the specific needs of the beneficiaries.

**Training Facilities :** It is equipped with all the required modern facilities and supported with professionally competent scientists-cum-faculty for conducting various training programmes. It has well equipped conferences and lecture halls with audio-visual aids, Computer facility with internet, rearing houses & mulberry garden etc.

### Various training programs at CSRTI, Mysuru

PROGRAMME	NAME OF THE COURSE	Duration(DAYS)
Technology Orientation Programme (For officials) (CSB Fund)	Refresher course	10
	Orientation programme	5
Farmers' Skill Training (CSB Fund)	Chawki rearing	10
	Late age silkworm rearing	10
	Mulberry cultivation technology	5
Need Based Training (Outside Agency Funding)	Orientation programme	15/40
	Popularization of high yielding mulberry varieties and silkworm races	3
	Chawki rearing	10
	Intensive Training in Bivoltine Sericulture	90
	Awareness programme	5
	Commercial chawki rearing (to get CRC license)	90
	Intensive Bivoltine Training	35
	Mass production of bio-control agents	5
	Sericulture technology	5
Project/ Internship (Students)	Internship	20-45

# Planning, Monitoring, Coordination & Evaluation (PMCE) Division

**PMCE Division** of CSRTI, Mysuru mainly concerns with the information flow. Its Computer center manages the information and activities on digital platforms. Its Library Center keeps the record of activities, and it evaluates their various expects such as annual progress made by the institution.

## **MANDATE:**

- To prepare annual action plans and Results Framework Documents for the Institute and nested units.
- To coordinate and monitor R&D, Training and Extension activities of the Institute for effective implementation of the mandate.
- To evaluate Research, Extension and HRD proposals for seeking clearance of the advisory/ funding authorities.
- To conduct meetings of Research Council, Research Advisory Committee and other meetings and to prepare required minutes of the meetings and follow-up.
- To prepare periodic progress reports and state-of-art reports.
- To coordinate preparation of institute publications and to prepare Annual Reports and other related documents.
- To coordinate with universities, research Institutes in respect of academic and inter-institutional programmes.
- To facilitate patent and commercialization of inventions and to act as a Patent Cell of the Institute.
- To look after the EM (Electron Microscope) functioning, its upkeep, maintenance and to execute for EM studies as when entrusted.
- To prepare technical/scientific reports/notes and write ups.
- To facilitate participation of personnel in training programmes, seminars, workshops and conferences.
- To prepare, update and maintain databases on personnel, projects/ programmes/production statistics etc.
- To coordinate Inter-Institutional and International collaborative projects/programmes.

## **Computer Center -**

### **MANDATE:**

- To maintain the servers and to ensure upkeep there of.
- To provide infrastructural and technical support to all personnel in computing and computer facilities.
- To maintain computing, LAN and associated facilities for the benefit of personnel.
- To set right the faults in the computers etc. of the scientists working at their places.
- To develop need based softwares and programs.
- To update and maintain Institute website.
- To ensure AMC and timely renewal of Computers, UPS, LCD projectors and other accessories.
- To maintain & provide Video conference facility of the institute.





## Library & Information Center -

### **MANDATE:**

- To procure, maintain and provide book
- Journals/magazines to Institute personnel
- To provide bibliographic data retrieval assistance to R & D personnel
- To compile and publish bibliographic references on Sericulture sciences – **SERIDOC**.



**Library at CSRTI, Mysuru**



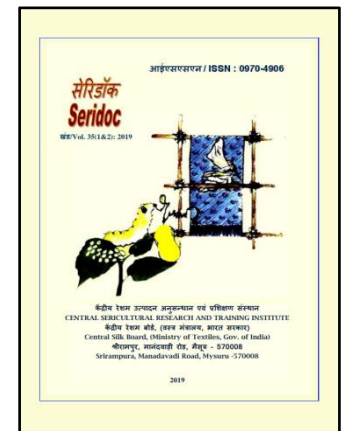
**Jan-Dec 2017 issue of IJS**

## **Indian Journal of Sericulture**

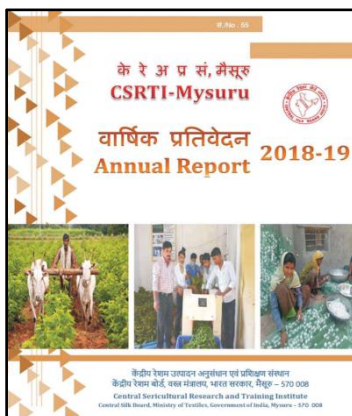
Indian Journal of Sericulture is an International Scientific Journal published by Central Silk Board from CSRTI, Mysore since 1983. The journal publishes original research findings, review articles and short communications relating to all aspects of sericulture and silk technology. It is the premium peer reviewed publication in sericulture from the country and has wide publicity among all sericulture countries and various universities in and outside the country. It is a half yearly journal, published in June and December.

## **SERIDOC**

**SERIDOC** is a half yearly documentation on sericulture research references in bibliography level is being published by CSRTI, Mysore since 1985. It is a half yearly journal, published in April and October.



**SERIDOC Cover Page**  
**Vol. 35 : 2019**



**Annual Report 2018-19**

## **Annual Report**

Every year Library & Information Division of CSRTI, Mysuru issues the Annual Report of CSRTI. It records various highlights of the year like highlights of Research, Training and Extension Activities, Progress of Research Projects and Programmes, publications etc.



## Books Published by CSRTI, Mysuru

Over the years, CSRTI has published scores of books on sericulture and various important related topics. Their copies are available in library. Some of the old publications on sericulture which are out of print are available for download in PDF version on the website of the Institute.

**Books published by CSRTI, are listed below.**



Attested by the Principal,  
Shivaji College (University of Delhi)  
*Shivaji*  
कार्यवाहक प्राचार्य / Officiating Principal  
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(दिल्ली विश्वविद्यालय) / (University of Delhi)  
राजा गार्डन, नई दिल्ली-110027  
Raja Garden, New Delhi-110027

Title of Publication	Authors	Year
(Resham Kiran 2020)	CSR&TI, Mysuru	2020
(Resham Kiran 2019)	CSR&TI, Mysuru	2019
MULBERRY PESTS - Current Status & Practices	N. Sakthivel, J.B. Narendra Kumar, N. Dhahira Beevi, M. Devamani, R.S. Teotia	2019
Mulberry Sericulture- Technology Descriptor English Hindi Kannada Tamil Telugu	Balavenkatasubbaiah M, Mal Reddy N, Munirathnam Reddy M, Narendra Kumar J.B., Rajashekar K, Satish Verma	2017
Biological control of Insect Pests in Mulberry Sericulture	J.B. Narendra Kumar, Vinod Kumar, V. Sivaprasad	2016
Commercial Chawki Rearing	V. Sivaprasad, M T Himantharaj, Satish Verma, T Mogali	2015
Organic Farming in Mulberry : Recent Breakthrough	Dr. N. Sakthivel, Dr. J. Ravikumar, Dr. Chikkanna, Mukund V. Kirsur, Dr. B. B. Bindroo, Dr. V. Sivaprasad	2014
Pedigree of Multivoltine (V <sub>3</sub> ) Silkworm Breeds developed at CSRTI, Mysore	B.B. Bindroo, V. Premalatha, Dayananda, S.M. Moorthy, C. Prameshwara & K.P. Shivakumar	2014
Pedigree of Bivoltine (V <sub>2</sub> ) Silkworm Breeds developed at CSRTI, Mysore	B.B. Bindroo, A. Naseema Begum, Mal Reddy & S.M. Moorthy	2014
Rain Water Harvesting & Its conservation for Mulberry Gardens	Satish Verma & Bharat Bhusan Bindroo	2014
Sericulture Technologies Developed by CSRTI, Mysore	B.B. Bindroo & Satish Verma	2014
R & D Advancements in Indian Sericulture - Proceedings	B.B. Bindroo & Mukund V. Kirsur	2013
Technology Workshop in Hindi - Compilation	Satish Verma, S.D. Sharma, B. Jayaramulu, D.D. Sharma & V. Jayashree	2013
Commercial Chawki Rearing - Exploring New Horizons	Mukund V Kirsur, Dr. A. Mahima Santhi & J. Justin Kumar	2013
CPP 2008-12 - A New Dimension in the Promotio of Bivoltine Sericulture	S M H Qadri	2012
Management Strategies of Papaya Mealybug	N Sakthivel, S M H Qadri, R Balakrishna, Mukund V Kirsur	2012

	& S Mahiba Helen	
Seri Success through farmer's Innovation	S M H Qadri	2011
A bibliography of research work in silkworm breeding (1960-2011)	S M H Qadri, A Naseema Begum, N Mal Reddy, S M Moorthy, S Nirmal Kumar & Sowmyashree	2011
Young Age Silkworm Rearing Trainer's Guide	R Gururaj & S B Magadum	2009
Titles & Abstracts on Silkworm Diseases	J Justin Kumar	2008
Silkworm Rearing House Design & Construction	S B Dandin & Satish Verma	2006
Mechanisation in Sericulture	Satish Verma & S B Dandin	2006
Silkworm Breeds & Hybrids at Glore	S B Dandin, H K Basavaraja & N Suresh Kumar	2005
Large Scale production of Mulberry Saplings	S.B. Dandin, A. Sarkar & R. Balakrishna	2002
Manual on Bivoltine Rearing, Race Maintenance and Multiplication	R K Datta, H K Basavaraja & Y Mano	1996
Manual on Mounting and Harvesting Technology	R K Rajan, T Inokuchi & R K Datta	1996
Manual on Young Age Silkworm Rearing	R K Rajan, A Murogai & R K Datta	1996
Problems of Soils and Their Management in Mulberry Gardens in Tropics (In Hindi)	P C Bose & K Sengupta	1993
A Guide for Bivoltine Rearing (in Hindi)	R K Datta	1992
Diseases and Pests of Mulberry and Their Control	K Sengupta, Govindaiah & Pradip Kumar	1991
New technology for Silkworm Rearing	S Krishnaswamy	1990
Improved Method Rearing Young Age (Young) Silkworms	S Krishnaswamy	1990
Problematic Soils of Mulberry Garden and Their Management	P C Bose & K Sengupta	1990
Sericulture Practices for Hilly Areas of South India	M N Narasimhanna, N M Kanyadi, C Ravi Kumar & H K Basavaraju	1990
A Treatise on the Acid Treatment of Silkworm Eggs	N M Biram Saheb, K Sengupta & G Vemananda Reddy	1990
Genetics Resources of Mulberry and Utilisation	K Sengupta & S B Dandin	1989
A Guide for Bivoltine Sericulture	K Sengupta	1989
Ushna Kothi	S S Gosh & C N Ramaswamy	1989
Vijay – An Improved Reeling Machine	S S Gosh & C N Ramaswamy	1989
Mulberry Cultivation as High Bush and Small Tree in Hilly Regions	S B Dandin & K Sengupta	1988
Prospects of Sericulture in Tea & Coffe Plantations	M S Jolly	1987
Proceedings of the Meeting on Prospects of Sericulture in Tea and Coffee Plantations	K Sengupta	1987
Economics of Sericulture under rained conditions	M S Jolly	1986
Economics of Sericulture under irrigated conditions	M S Jolly	1986
Organisation of Industrial Bivoltine Sericulture for Tropics	M S Jolly	1986
Mulberry Cultivation in South India	S Krishnaswamy	1986
Mulberry Descriptor	S B Dandin & M S Jolly	1986



## Brochures & Pamphlets -

CSRTI, Mysuru also issues various brochures and pamphlets from time to time in order to spread the knowledge of various aspects of sericulture. Being quite catchy and concise, they are easily decipherable and serve their purpose quite well. They are issued in English, Hindi, Kannada and Tamil. Its brochures and pamphlets range from variety of topics like new robust, hybrid silkworm and mulberry varieties, effective techniques of mulberry cultivation and silkworm rearing, new technologies of silk reeling, silk and mulberry protection, specific guidelines etc. Two such brochure samples are given below :

Technical Bulletin No. 18 (Eng)

### Biological

Release *Trichogramma chilonis* egg parasitoids @ 1 Tricho card / week for four



Tricho card



Fixing Tricho card



Trichogramma parasitizing on eggs

### IPM schedule for leaf roller

Days	Activity to be taken up	Qty/acre/crop
15	Spray 0.07% DDVP (1 ml/1 lit water)	100 ml
18	Release Tricho card	1 card
25	Release Tricho card	1 card
32	Release Tricho card	1 card
39	Release Tricho card	1 card

### INTEGRATED PEST MANAGEMENT OF LEAF ROLLER



Text  
Vinod Kumar & J. B. Narendra Kumar

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Email: csrtimys.csbt@nic.in

Central Sericultural Research & Training Institute  
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Mysuru-570 008

Copies: 1000 November 2015

### INTEGRATED PEST MANAGEMENT OF MULBERRY LEAF ROLLER, *Diaphania pulverulentalis*



Status

The leaf roller is reported to infest mulberry plantations in Karnataka, Andhra Pradesh and Tamil Nadu. The infestation causes considerable reduction in leaf yield resulting in economic loss to sericulturists.

**Period of occurrence**

The infestation is observed on the onset of monsoon i.e. from June and lasts upto February. However, the peak period of infestation is from September to November.

### Nature of damage and symptoms

- The target area of the leaf roller is the apical portion of the mulberry shoot.
- The young caterpillar binds the leaflets together by silky secretion and settles inside and devours the soft green tissues of the leaf surface.
- Grown up caterpillars feed on tender leaves and their faecal matter can be seen on the leaves.



### Management

#### Mechanical

- Deep ploughing and flood irrigation will kill the pupae present in the soil.
- Use light traps to attract and kill adults.

#### Chemical

Spray 0.07% DDVP (7% EC) 12-15 days after pruning (1 ml in 1 litre water).  
Safety period: 10 days.



### Life cycle


Fecundity : 80-150 eggs  
Hatching : 2-3 days  
Larval duration : 8-12 days  
Pupal duration : 7-9 days  
Completes life cycle in : 17-24 days



### Integrated Pest Management of Leaf Roller

Central Sericultural Research and Training Institute, Mysore


### Quality Cocoon Production



Quality cocoons are characterized by uniform size, shape, shell thickness, compactness, fine surface grains, high reability, filament length, shell percentage and fewer defective cocoons.

- To obtain quality cocoons, use appropriate mountages
- Transfer mature silkworm larvae onto mountages at the right time
- Quality cocoons, fetch higher returns at the market

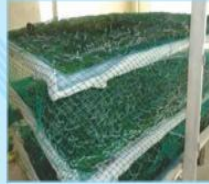
### Plastic Collapsible Mountages



At present, most of the farmers use plastic collapsible mountages for self mounting.


- In this method the mountages are spread on the rearing bed at the time of spinning
- They are convenient to handle, disinfect, occupy less space for storing and do not require additional space for mounting
- In these mountages, formation of defective cocoons is less
- Reduces drudgery and cost of manpower

### Rotary Mountages



Spinning larvae are collected by spreading nylon nets over the rearing bed after final feeding. The mature larvae are collected after 2 hours and mounted on the rotary mountages


- Rotary mountages are the best mountages available to produce quality cocoons of uniform size and shape.
- These mountages are made of good quality cardboard grills fixed on wooden frames
- Each set contains 10 cardboard grills having 1560 cells assembled on wooden frames



Copies: 1000 January 2017

Technical Bulletin No.35 (Eng)

### MOUNTING & HARVESTING TECHNIQUE for quality cocoon production



- After mounting of silkworms, the mountages are hanged on horizontal bars in 3-4 tiers
- Since the spinning larvae exhibit negative geotropic behaviour, they climb and move up. Because of the weight displacement, the mountages rotate. Hence the name rotary mounting
- Both the cardboard grills and wooden frames are collapsible and hence easy to store
- 100 sets of rotary mountages are required for rearing 250 dfls
- Fewer defective cocoons and improved reability
- Easy to harvest, disinfect and store
- The cocoons harvested from rotary mountages are of superior quality and fetch higher price (Rs. 40-50 more) in the market

### Harvesting

- Harvesting of cocoons must be done on the 6<sup>th</sup> or 7<sup>th</sup> day after spinning. However, seed cocoons should be harvested on 8<sup>th</sup> or 9<sup>th</sup> day
- Remove the card board mountage on a frame and harvest the cocoons with the help of pushers
- Cocoons from plastic mountages can be harvested also by using cocoon harvesting machine

### Transportation of Cocoons

- Sorted cocoons should be packed loosely in well-aerated bags
- Transportation should be done during the cooler hours of the day
- Immediately after reaching the cocoon market, open the bags and spread the cocoons on racks provided in the market

### Cocoon Quality Testing

- Get the cocoon lot tested by the Cocoon Testing Centre established by CSRTI-Bengaluru in the cocoon market to know the quality.

Text:  
S. Parurathom, D. S. Somaprakash  
Rajashekhar, K and V. Sivaprasad

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Central Silk Board, Ministry of Textiles  
Govt. of India, Srirampura  
Mysuru - 570 008

Copies: 1000 January 2017

### Mountages and Mounting Care

Attested by the Principal,  
Shivaji College (University of Delhi)

Shivaji College

कार्यवाहक प्राचार्य / Officiating Principal

शिवजी महाविद्यालय / Shivaji College

(दिल्ली विश्वविद्यालय) / (University of Delhi)

राजा गार्डन, नई दिल्ली-110027

Raja Garden, New Delhi-110027

# Sericulture Engineering Division (SED) & Reeling Unit

SED mainly is concerned with the technical aspects of sericulture at CSTRI. Its agenda is to deploy the best available techniques for sericulture and to maximize the work efficiency with modern machineries.

## MANDATE :

- To carry out research projects/programmes in the area of agricultural engineering for enfusing tangible mechanization in sericulture and to undertake innovative works/designing and development of items to support host plant and silkworm crop production disciplines through fabrication of tools/equipment/machines to achieve reduction in cost of production, drudgery, operational time and save on resources.
- To carryout research projects/ programmes/ works for developing reeling packages for newly developed hybrids, wherever required.
- To carryout evaluation studies for cocoon quality assessment of newly developed breeds/ hybrids from laboratory and field samples.
- To up keep of the machineries & equipments in the SE & Reeling sections.

## Machinization in Sericulture - Need and Scope

Today, mechanization in sericulture is a felt need mainly for the following objectives :

### 1. Enhancing the work efficiency and productivity of the workers -

Mechanization helps

in increasing the efficiency and productivity of the workers. The given table shows the augmentation in workers efficiency and output in some of the activities of sericulture through mechanization.

It shows enhancement in workers efficiency and their productivity through mechanization in various activities involving cocoon production. Hence the farmers can overcome the labour problem by reducing the manpower and workers requirement besides curtailing expenditure for cocoon production through appropriate and needful mechanization.

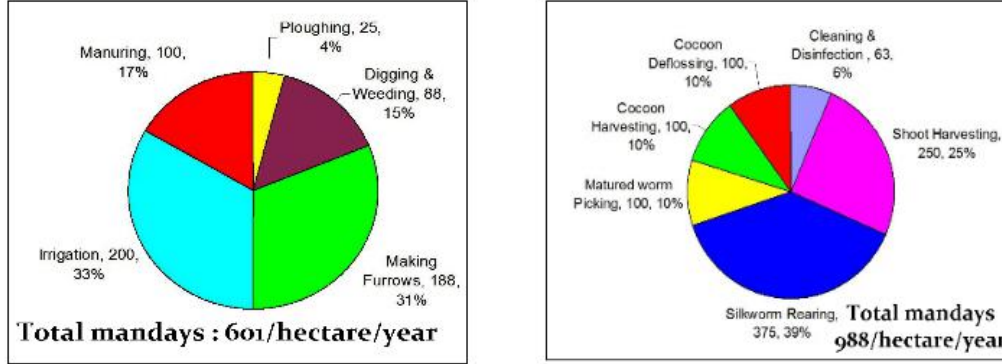
**Improvement in workers efficiency through mechanisation**

No.	Activity/ Work	Worker's Output		Gain in work through use of machine (B/A)
		Manual (A)	With Machine (B)	
1.	Land preparation	2,000 sqm/day	20,000 sqm/day	10 times
2.	Mulberry cutting preparation	300 cuttings/h	1,200 cuttings/h	4 times
3.	Shoot harvesting	200 kg/day	1200 kg/day	6 times
4.	Intercultural operations	1,000sqm/day	20,000sqm/day	20 times
5.	Leaf chopping	20 kg/h	200 kg/h	10 times
6.	Matured silkworm picking	30 dfls/day	300 dfls/	10 times
7.	Cocoon harvesting	10 kg/h	50 kg/h	5 times
8.	Cocoon deflossing	5 kg/h	50 kg/h	10 times
9.	Tray washing	25 trays/h	100 trays/h	4 times
10.	Cocoon cutting in grainages	250 cocoons/h	2,000 cocoons/h	80 times



**2. Reducing the manpower requirement for various work -**

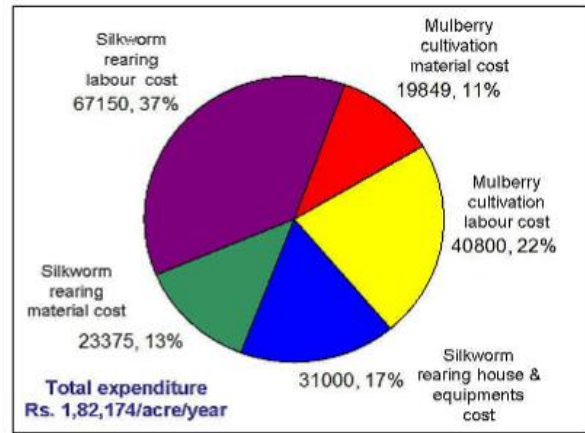
Sericulture, the process of silk cocoon production, comprises of rearing silkworms which feed on mulberry leaves cultivated by the farmers. It is considered high labour requirement industry since many years. Figure 1 and 2 show the manpower requirement for various activities of mulberry cultivation and silkworm rearing.



From Figure 1 and 2, it can be seen that in all **1,589 mandays (240 for mulberry cultivation and 395 for silkworm rearing) are required per acre in a year.** In general one can say that on an average two workers/year are required for maintenance of one acre of mulberry garden and rearing of silkworms from it. In southern states of India, the silkworm rearing is carried out through out the year. Hence, sericulture provides continuous employment to the workers. With drastic reduction in workers availability and high labour wages, the farmers will have to go for mechanization of labour intensive activities.

**3. Curtailing the expenditure on various activities -**

The figure shows various costs involved in silk cocoon production. Here, it can be observed that **59% total expenditure in silk cocoon production accounts for labour wages for mulberry cultivation (22%) and silkworm rearing (37%).** Today, the farmers may have very little control on costs of inputs required for mulberry cultivation and silkworm rearing and creation of silkworm rearing infrastructure such as rearing house, rearing stands, mountages, etc. and hence the farmers will have to go for use of tools and machines to carry out various labour intensive activities for reducing the cost of cocoon production. Table 2 shows the savings on various sericulture activities through appropriate mechanization.



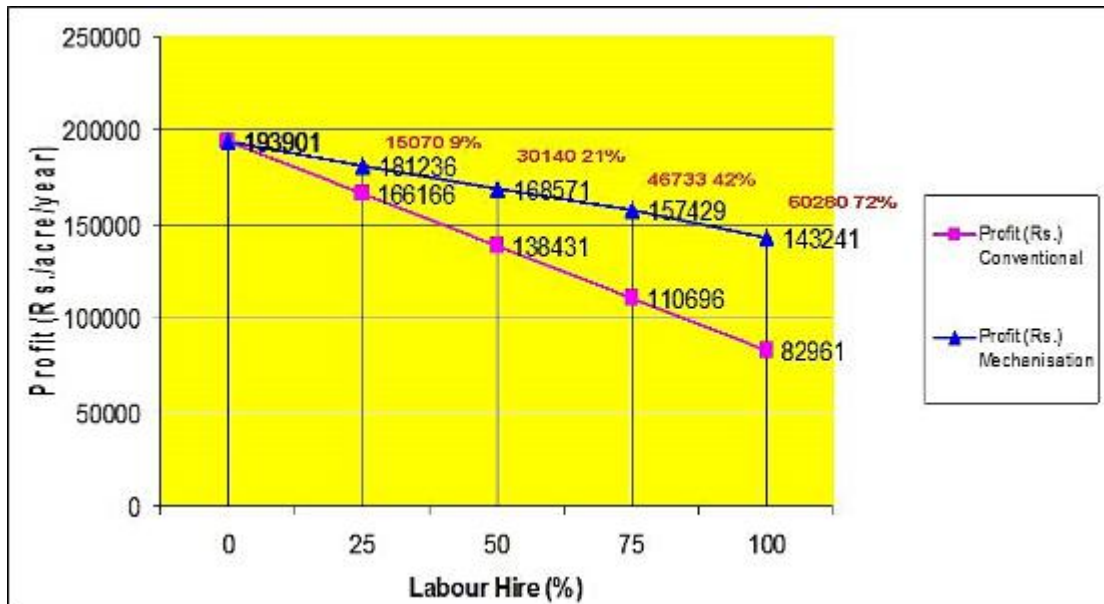
**Various costs involved in silk production**

No.	Activity / Unit	Cost of operation (Rs.)		Cost Saving (%) [(A-B)/A]x100
		Manual (A)	Machine (B)	
1	Land preparation (per ha)	3500	750	80
2	Cutting preparation (per 1000)	80	15	80
3	Intercultural operations (per ha)	2000	1200	40
4	Chemical application (per ha)	400	100	75
5	Shoot harvest (per MT)	500	125	75
6	Rearing house disinfection (per 300 dfls)	250	100	60
7	Leaf chopping (per day for 5000 dfls)	2000	200	90
8	Silkworm picking (per 100 dfls)	500	200	60
9	Cocoon harvesting (per 100 dfls)	600	150	75
10	Cocoon deflossing (per 100 dfls)	400	150	60
11	Tray washing (per 100 trays)	200	50	75

**Savings on various sericulture activities through appropriate mechanization.**

**4. Increasing the profitability in sericulture -**

Silk cocoon production is highly remunerative. The profitability in cocoon production has been reduced during last few years due to sharp increase in cost of inputs and labour wages due to migration of farm workers to towns and cities due to urbanisation, industrialisation and rapid growth of construction and service sectors. In present situation, the silk cocoon production is still a high return crop when compared to other farm crops. Nowadays, the shortage of labour and increasing labour wages have become a major concern for sericulture industry.



The above figure shows the annual net earnings or profits from silk cocoon production per acre by different category on farmers based of extent of hiring of the workers. The profits reduce with increase in extent hiring of labours.

The profitability and sustainability of sericulture can be increased through appropriate and needful mechanisation. The activities which could be mechanised partially or fully are given ahead.

- Land preparation for new mulberry plantations
- Mulberry cutting preparation
- Weeding and intercultural operations
- Irrigation by adopting drip irrigation system
- Spray of chemicals for pest and disease control
- Mulberry shoots harvesting for late age rearing
- Disinfection and cleaning of silkworm rearing houses
- Leaf chopping for young age silkworms
- Picking of matured silkworms
- Cocoon harvesting
- Cocoon deflossing



**CSRTI Leaf chopper**  
**(225-250 kg leaves /hr)**

The above figure shows that **higher profitability in sericulture can be achieved through appropriate mechanization in various activities of silk cocoon production.**

**Profit for farmers having adequate family labours = Rs. 1.93 lakhs per acre in a year (highest)**  
**Profit for farmers who hire the workers partly or fully = Rs. 1.66 lakhs to Rs. 1.81 lakhs**

**Gain for farmers hiring 50% of workforce = 21% (Rs. 1.38 lakhs to Rs. 1.68 lakhs).**

**Gain for farmers engaging 75% labour = 42%**

**Gain for farmers engaging 100% labour = 72%**

It is interesting to note that **mechanisation will greatly help the farmers hiring more labours.**

#### 5. **Obtaining timeliness in various sericulture activities -**

Timeliness is very important in many silk production activities. The timely intercultural operations, watering, spray of chemicals for diseases and pest control, pruning and harvesting of mulberry shoots, leaf feeding to young age silkworms, application of bed disinfectants, picking and mounting of silkworms for cocooning, harvesting and cleaning of cocoons greatly affects the silkworm cocoon crop. To carry out these works lot of manpower is required. Farmers often face difficulty in getting adequate number of skilled workers. The mechanisation can be a feasible alternative to labour shortage to maintain timeliness in carrying out various works on a silk farm.

#### 6. **Minimising the drudgery in many sericultural works -**

Many of sericulture works are full of drudgery. The workers have to work for long hours, most of the time in damp conditions, in dim light, with surroundings full of dust and pathogens, etc. for less money. Mechanisation will help the workers in reducing drudgery in many of the activities of silk production such as intercultural operations and shoot harvesting in mulberry gardens, disinfection, picking of matured silkworms etc.



**Deflossers, CSRTI, Mysore**

#### 7. **Enabling the farmers to take up sericulture at large scale level -**

The mechanization can also make it feasible for farmers to go for silkworm rearing at large scale. By using machines, large area of mulberry can be cultivated and more number of silkworms can be reared at a time by the farmers. The mechanised large sericulture will result in production of high quality cocoons at lesser cost.



## Sericulture technologies and innovations by CSRTI, Mysore

Mulberry cultivation is very important in sericulture. CSRTI, Mysore has worked for last 20 years and developed many technologies, mulberry plantation methods, tools equipments and machines for machinization in sericulture. Nearly 60-70% of the cost production of silk cocoons goes for the production of mulberry leaf production. Proper machinization can reduce the cost of mulberry leaf production at least by 35-40%. various technologies developed by CSRTI are shown below :



**Mouldboard and disc ploughs in operation for land preparation for a new plantation of mulberry. A thorough land preparation helps in faster establishment of mulberry plants**

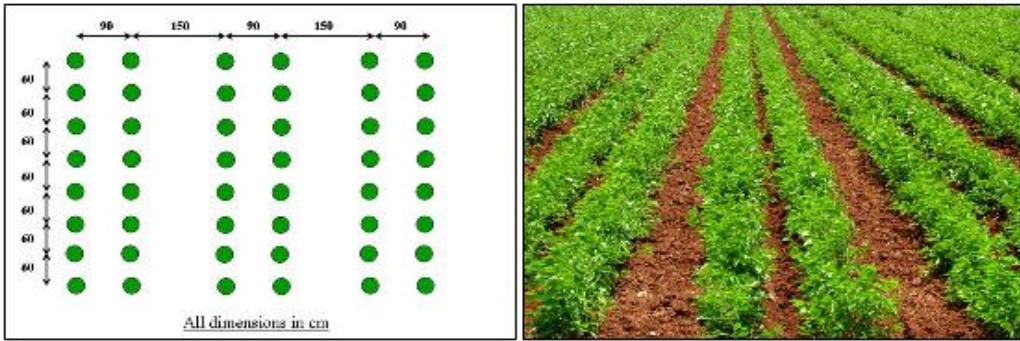


**Mulberry plants are propagated through cuttings. A worker generally makes 1500 -200 cuttings in a day.**



**With help of mulberry cutting preparation machine developed by CSRTI, Mysore 1,400 to 1,500 cuttings can be prepared in one hour.**

In conventional plantations it is not possible to use machines and intercultural operations have to be carried out manually. In paired row or 3M mulberry gardens, intercultural operations can be carried out with the help of a tractor operated cultivator, power weeders etc.



**Paired row plantation (90cm + 150cm x 60 cm) developed by CSTRI**



**3M Plantation {(120cm + 90cm + 90cm) x (120cm + 90cm + 90cm)} developed by CST**



**Machinized intercultural operations in mulberry gardens**



**Drip irrigation system for mulberry**





**Different equipments and machines for chemical applications in mulberry gardens like self-propelled CSRTI sprayer, TNAU power tiller mounted sprayer and ASPEE tractor mounted sprayer**



**Mulberry portable pruner**



**Power tiller operated mulberry shoot harvester (harvests 1000-1200 kg shoots per hour)**

## MULBERRY PROPOGATION TECHNOLOGIES BY CSRTI

Pit System of Planting	<b>Foliar spray of zinc for mulberry</b>
<b>Paired Row</b> Plantation	<b>Foliar spray of iron for mulberry</b>
<b>3M Plantation System</b> for Mulberry	Split application of fertilizers and farm yard manure for alkaline soils
Mulberry cultivation package for young age silkworms	Sulphur application in mulberry crop
Mulberry cultivation for late age silkworm rearing	Reduced doses of potassium to mulberry crop
Package of mulberry cultivation as tree	<b>Seriboost</b> – Liquid fertilizer for increasing mulberry productivity
Azotobacter biofertiliser for nitrogen economy	<b>Posan</b> – A multi-nutrient formulation for correcting nutrient deficiencies in mulberry
<b>Vesicular-Arbuscular Mycorrhiza (VAM)</b> inoculation of mulberry gardens	Green manuring and dry weed mulching for rain fed gardens
Dual inoculation of mulberry with Azotobacter & VA-mychorrhiza	Drip Irrigation System for Mulberry



## Package for mulberry cultivation as tree

The package consists of mulberry variety as S-13, plant spacing as 2.4 m x 2.4 m, crown height of plants as 150 – 180 cm, and fertilizer dose as 50:25:25 kg/ha/year of NPK. The green manuring during rainy season helps in improving the soil fertility. The trees yield mulberry leaves @ 6–7 MT/ha/ year. The mulberry can be harvested 4 times in a year.



Package of mulberry cultivation as tree



Azotobacter biofertiliser

## Azotobacter biofertiliser for nitrogen economy

Azotobacter biofertiliser @ 20 kg per year/ha in 5 equal splits (4 kg/crop mixed with 200 kg of powdered FYM) has been found to curtail 50 % of the chemical Nitrogen input without any adverse effect of leaf quality and yield.

## Foliar spray of zinc for mulberry

Foliar spray of Zinc Sulphate (1% aqueous solution sprayed 20 – 25 days after pruning to the mulberry garden under irrigated conditions augments leaf yield of mulberry by 20 %.



Foliar spray of zinc sulphate



Foliar spray of iron

## Foliar spray of iron for mulberry

Foliar spray of Iron ( 0.5% Ferrous Sulphate solution sprayed 20 – 25 days after pruning to the mulberry garden under irrigated conditions augments leaf yield of mulberry by 12 - 15 %



Seriboost

## Seriboost – Liquid fertilizer of micronutrients for increasing mulberry productivity

Seriboost ( a product of SERICARE) was tested for mulberry, is a multinutrient formulation used as foliar spray containing all necessary nutrients in a balanced proportion and in easily available form for healthy growth of mulberry thereby producing good quality cocoons. Seriboost is sprayed at 0.25 % in two sprays per crop after pruning/leaf picking (1st spray 23-25 days after pruning and 2nd spray 3-25 days after pruning).



Poshan

## Posan – A multinutrient formulation for correcting the nutrient deficiencies in mulberry

Posan is a multinutrient formulation for foliar spray. It contains all the essential nutrients in a balanced and easily available form for healthy growth of the mulberry thereby catering the complete nutritional requirement of the silkworms, increasing the leaf yield upto 20%.

# MULBERRY DISEASES & PEST MANAGEMENT

**For Leaf Diseases:**

Leaf Spot, Powdery Mildew, Leaf Rust, Bacterial Blight

**For Root Diseases:**

Bionema, Raksha, Nursery Guard, Chetak, Bio-Mix, Tri-mix, B Compo-mix, NAVINYA, NEMAHARI

**For Mulberry Pests:**

IPM against Mealy Bug, Mulberry Leaf Roller, Bihar hairy Caterpillar



**Powdery mildew of mulberry leaves**



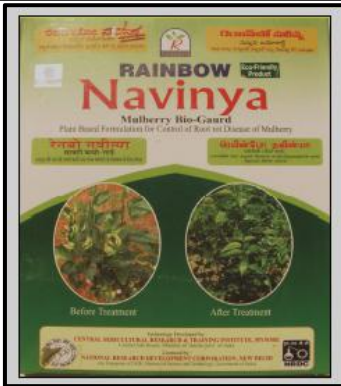
**Leaf roller, *Diaphnia pulverulentalis***



**Bionema** - A bionematicide for control of root knot disease  
**Raksha** - A biofungicide for the control of root disease  
**Nursery Guard** - A biofungicide for the management of mulberry nursery diseases  
**Chetak** - A bioformulation for the control of major mulberry diseases



**Bavistin solution for powdery mildew**



**NAVINYA – A plant based product for management of root rot disease**



# Silkworm varieties by CSRTI, Mysore



Two of the bivoltine silkworm hybrids developed by CSRTI

Chamaraja (CSR50 x CSR 51) & Krishnaraja (CSR6 x CSR26) x (CSR2 x CSR27)

Two of the multivoltine silkworm hybrids developed by CSRTI

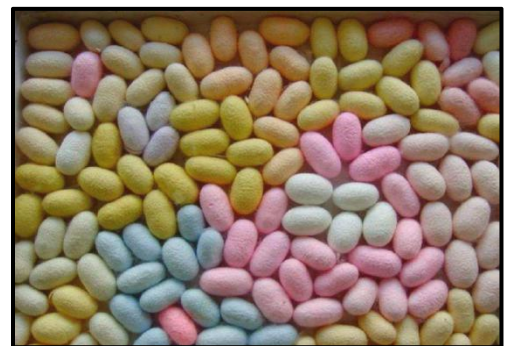


Jayalakshmi – ND7 x CSR2

Varuna – BL24 x C. Nichi

## Coloured Silk

The CSRTI, Mysore has developed a novel technique for inducing the silkworms to produce coloured coloured silk. This will help in production of silk with different natural colours.



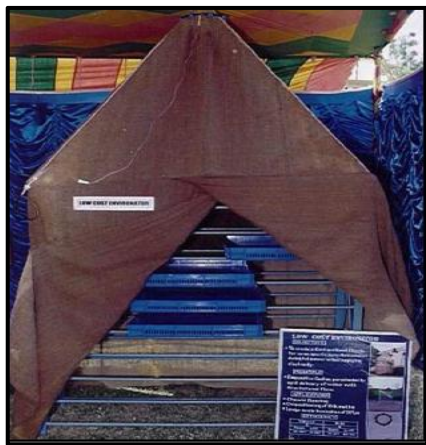
Coloured silkworms and coloured cocoons produced by them



Beautiful coloured silk yarns

# SILKWORM REARING TECHNOLOGIES

Silkworm Rearing House Models	Nutrid - Semisynthetic diet for Young Age Silkworms
Sheet Egg Transportation Bag	Chawki Transportation Frame
Loose Egg Transportation and Incubation Bag	Cool Guard for heat reduction in late age silkworm rearing houses
Earthen Pot for Incubation of silkworm Eggs	Standard Rearing Schedule for CSR2xCSR4 and BL24xNB4D2 hybrids
Double Brick Walled Chamber for Incubation of silkworm Eggs	<b>Sampoorna</b> - A Phytoecdysteroid for Synchronized Maturation of Silkworms
Hydrodynamic incubator	<b>Samrudhi</b> – A Juvenile Hormone for Silkworms
Loose Egg Incubation Frame	<b>Jobrai Method</b> of Silkworm Harvesting
PVC Stands for Chawki rearing	Wrap up Method of Chawki Rearing
Environator	Plastic Bottle Brush Mountage
Brushing Net for young age silkworms	Plastic Collapsible Mountage
Cocoon Transportation Bag	Card Board Rotary Mountage
Blue Polythene sheet for young age silkworm rearing	Plastic Rotary Mountage and rotatory mountage stands



**Environator**



**Samrudhi – A Juvenile Hormone for Silkworms**

**Sampoorna – Phytoecdysteroid for Synchronized Maturation of**



**Mounting Hall for spinning of the cocoons**



**Plastic bottle brush, plastic collapsible and cardboard rotatory mountages**





**Mature silkworm separator**



**Cocoon harvester, at CSRTI, for collapsible mountages**



**Workers working with plastic collapsible mountages**

SILKWORM DISEASES & PEST MANAGEMENT	
Formalin Chaff Application for control of muscardine	Pebrine detection for commercial silkworm egg production
Chemotherapy of muscardine diseases in silkworm	Resham Keet Ousadh (RKO)
Disinfection and hygiene in silkworm rearing houses using bleaching powder	<b>Vijetha</b> and its supplement
Disinfection and hygiene in silkworm rearing houses using chlorine dioxide	<b>Ankush</b>
Diagnosis and management of diseases in silkworm rearing	<b>Amrut</b>
Determination of health status of Chawki silkworms	IPM Against <b>Uzi Fly (Exorista bombycis)</b>
Colloidal textile dye based dipstick immunoassay for the detection of BmFV in silkworm	IPM Against <b>Dermestid Beetles</b> in Grainages
<b>ASTRA</b> - An eco-friendly rearing house disinfectant	<b>Raksha Rekha</b> (an insecticidal chalk)

Attested by the Principal,  
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**Pebrine**

Protozoan *Nosema bombycis* produces pepper like spots on body.

Central Sericultural Research and T



**Flacherie**

Bacterium *Bacillus thuringiensis sotto* causes putrefication of body and makes it black-green.



**Grasserie**

*Borrelina* virus causes swelling of segment and sink rupture.



**Muscardine**

Fungus *Beauveria bassiana* causes white muscardine. Hyphae come out from inter-segmental membrane all over the body.



*Exorista bombycis* (Uzi fly) & *Dermestes ater* (dermestid beetle)  
Two main pests of silkworms

**Some of the measures of pest management & disinfection formulated by CSRTI, Mysore**

**c. 0.05 % Asthra solution**

Dissolve 50 g of Asthra powder in 100 ℓ of water. Keep the solution for 2 hours before spraying.




**d. 0.2% Serifit Solution**

Dissolve 200 g of Serifit powder in 100ℓ of water. Keep the solution for 30 min. before spraying.




A NOVEL METHOD TO TRAP THE UZI FLY

A PRODUCT OF CSRTI, MYSORE, (CENTRAL SILK BOARD)



Bed disinfectant	Schedule
Ankush	After each moult and on 3 <sup>rd</sup> and 5 <sup>th</sup> day of final instar
Vijetha	After each moult and on 4 <sup>th</sup> day of final instar
Vijetha Supplement	On 3 <sup>rd</sup> day of 4 <sup>th</sup> instar; 2 <sup>nd</sup> and 6 <sup>th</sup> day of final instar in addition to Vijetha dusting

**ASTRA and Serifit - Chemical Disinfectants formulated by CSRTI**

**Uzi trap solution, formulated by CSRTI to protect silkworms by trapping Uzi flies.**

**Ankush & Vijetha - Bed disinfectants to keep pests away from growing larvae.**

**Fumigation of Rotary mountages**

- Spray 10% formalin solution on mountages and frames placed on a vinyl sheet. Fold the vinyl sheet to cover the mountages and keep a side for 6 hours.



**Disinfection of Rearing House and appliances**

- Conduct two disinfections with the recommended disinfectants using a power sprayer. An optional disinfection using 0.3% slaked lime solution is also recommended when high incidence of Grasserie or Viral Flacherie were noticed in the previous rearing.



Ingredients	Qty.	Ingredients	Qty.
Sanitech/Serichlor	2.5 ℓ	Sanitech Super	1.25
Activator crystals	250 g	Activator crystals	125 g
Slaked lime	500 g	Slaked lime	500 g
Water	97.5 ℓ	Water	98.75 ℓ




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**Disinfection of rearing house and appliances as per the schedule directed by CSRTI**

**Preparation of chlorine dioxide based disinfectants**



## TOOLS, APPLIANCES & MACHINES FOR SERICULTURE

Machines for Rain Water Harvest	Technology for production of non-woven flat silk	Cocoon Deflossers
Machines for Making Pits	Spoorthi - Mulberry leaf health Drink	Pressing & Bundling Tool for Plastic Mountages
Mulberry Cutting Preparation Machine	Extraction of Sericin from silk cocoons	Plastic Tray Washing Machine
Machines for Intercultural Operations for Mulberry	Preparation of silkworm powder	Silkworm Cocoon Cutting Machine
Sprayers for Chemical Application for Mulberry	Extraction of silkworm pupae oil	Silkworm Leaf Litter Separator
Hand Tools for Mulberry Cultivation & Shoot Harvesting	Preparation of silkworm pupae powder	Seri Room Heater
Knapsack mulberry shoot harvester	Extraction of fibroin from silk cocoons	Cocoon harvester for collapsible mountages
Mulberry Shoot Crushing Machine	Silkworm pupae as human food	Young-age silkworm dusting machine
Sprayers for disinfection of silkworm rearing houses	Cocoon Art Craft	Battery Operated Duster
Electric Sprayers for disinfection in rearing houses	Flame Gun	Matured Silkworm separator
Seri Humidifier cum Heater	Chawki Leaf Chopper	Rotary Mountage Cocoon Harvesters



**Sprayers for chemical application in mulberry gardens**



**Electric power sprayers for disinfection in sericulture**



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**Seri Humidifier cum Heater**



**Flame Gun**










**Knapsack Mulberry shoot Harvester**



**Battery Operated Duster for dusting disinfectants on rearing beds**

## Value addition to Sericulture by CSRTI

Wastes generated during all sericultural activities can very well be converted into valuable products of industrial value. If this is considered seriously, the silk industry will not be a profession only for silk but in a broader sense for a larger community of the mankind providing money round the year. **Useful products developed by CSRTI, Mysore from seri wastes are described below :**

<p>CSRTI, Mysore developed technology for production of <b>Non woven or flat silk</b> for various industrial applications. The product got an International Patent.</p>		<p>CSRTI, Mysore developed an innovative process for <b>extraction of fibroin</b> from degummed silk cocoons. Fibroins have high use in medicinal and health industry, cosmetics, toiletries, tissue regeneration and repair, scaffolds and matrices.</p>	
<p>CSRTI, Mysore developed an innovative process for preparation of <b>silkworm powder</b> which is of high medicinal value. The silkworm powder is an anti-diabetic, anti-hypertension, and anti aging.</p>		<p><b>Spoorthi</b> is made out of specially cultivated mulberry leaves. The regular use of Spoorthi helps in checking the sugar and blood pressure levels in human beings.</p>	
<p>CSRTI, Mysore developed an innovative process for <b>extraction of Sericin</b> for Bivoltine Cocoons. The sericin contains 18 amino acids besides 8 essential amino acids, which are necessary for human body. Sericin from silk cocoons is 99.9% pure and has high medicinal applications. It is an antioxidant, coagulant, chemo protective and nutrient supplement.</p>		<p>CSRTI, Mysore developed an innovative process for extraction of <b>oil from silkworm pupae</b> which is rich in unsaturated fatty acids. The pupae oil contains oleic palmitic, stearic, lauric acids, phospholipids etc. The silkworm pupae oils can be used in paints, varnishes, soaps, candle industry, pharmaceuticals, and biodiesel.</p>	
<p>CSRTI, Mysore developed an innovative process for preparation of <b>silkworm pupae powder</b>. It contains 56% crude protein, 3.5% fibre, and 3.5% ash. The silkworm pupae powder is very rich in sodium, calcium, potassium and phosphorus. Silkworm pupae powder can be used as food supplement.</p>		<p>CSRTI Mysore developed <b>dishes out of eri silkworm pupae</b> which are used as food in the north eastern states of India. The eri silkworm are very rich source of protein and fatty acids. They contain 45% protein, 20% fat and 5% ash.</p>	
<p>CSRTI Mysore has developed technology and standardized the process for <b>invitro culturing of Cordyceps</b>, an entomophagous fungus with diverse biological activities and high pharmacological commercial value on mulberry silkworm pupae.</p>		<p>Different designs of garlands, flowers, bouquets, gift items, etc. Have been developed from mulberry cocoons. These <b>cocoon art and craft</b> products have high value and demand in market due to elegance and long keeping quality.</p>	

Central Sericultural Research and Training Institute, Mysore

Attested by the Principal,  
Shivaji College (University of Delhi)

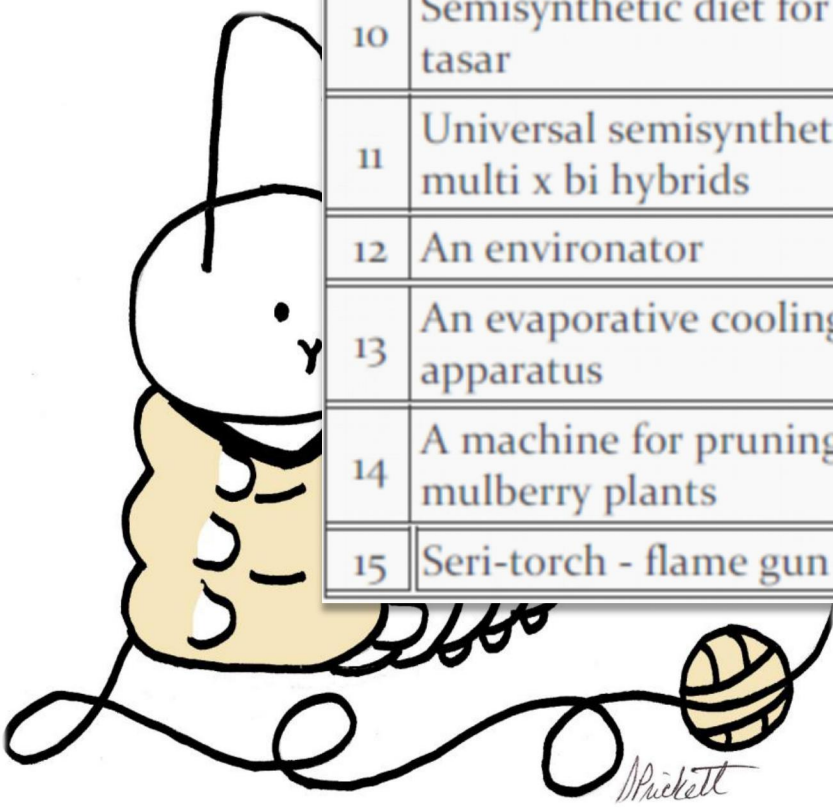
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## Technologies patented by CSRTI, Mysore

No.	Technology	Patent No.	Granted on
1	Machine for crushing shoots	198697	21/02/1997
2	A process for the preparation of a biofungicide	192883	27/06/1997
3	Uzi trap	188408	16/09/1997
4	Vijetha - A bed disinfectant	186852	28/09/1998
5	Process for preparation of artificial diet(Nutrid)	218430	03/02/1999
6	An evaporative cooling apparatus	216639	08/05/2001
7	A Process for obtaining ecdysteroid	193857	14/06/2001
8	Nursery guard - a biofungicide	220394	02/11/2001
9	Bionema	219129	05/03/2002
10	Semisynthetic diet for tropical tasar	240259	12/06/2007
11	Universal semisynthetic diet for multi x bi hybrids	247304	10/09/2007
12	An environator	216222	10/03/2008
13	An evaporative cooling apparatus	216639	17/03/2008
14	A machine for pruning of mulberry plants	217215	26/03/2008
15	Seri-torch - flame gun	223321	09/09/2008



## Technologies commercialized by CSRTI

No.	Technology
1	Uzi trap
2	Vijetha - A bed disinfectant
3	Process for preparation of artificial diet (Nutrid)
4	A Process for obtaining ecdysteroid (Samporna)
5	Seri-torch - flame gun
6	Cocoon de-flossing machine
7	RKO- A bed disinfectant for silkworm
8	Production of non-woven flat silk sheet
9	Plastic Rotary & New Mountages for Harvest Quality Cocoons
10	Hand Operated Mature Silkworm Separator & Collector:
11	Navinya a formulation for control of mulberry root rot
12	Poshan a multinutrient formulation for mulberry
13	Mulberry leaf chopping machine
14	Hydrodynamic incubator
15	Battery operated powder duster
16	Electric sprayer
17	Motorized-cum-hand operated silk cocoon Cleaning m/c
18	Hand operated silk cocoon cleaning
19	Chawki leaf chopper
20	Azotobactor bio-fertilizer for mulberry
21	Seri-Humidifier-cum-Heater
22	High Pressure Sericulture Sprayer
23	Amruth - Bed disinfectant
24	Vijetha Supplement Powder (Silkworm Bed Disinfectant)
25	Asthra- disinfectant for managing diseases of silkworm
26	Ankush- a new bed disinfectant
27	Samrudhi(JHA)
28	Pedal operated composite cocoon harvester
29	Mulberry leaf health drink- Spoorthi
30	Colour Silk
31	Seri Heater
32	Cocoon Harvester for Collapsible Plastic Mountages

# CSRTI, Mysore : The R & D

## Organisation of Central Silk Board

**S**ericulture involves growing of host plants, rearing of silkworms, reeling, twisting, weaving and marketing of various value added products and services. To increase productivity, quality and profitability of sericulture, number of products, methodologies, package of practices, etc., have to be developed and released to stake holders. **CSRTI, Mysore is the Research & Development Organization of Central Silk Board.**

The Institute undertakes entire gamut of sericultural R & D activities to cater to the needs of the on-farm sector of the mulberry silk industry of the southern states which contribute about 90% of the silk of the country besides catering to the R&D needs of Maharashtra, Gujarat & Madhya Pradesh which are nontraditional sericulture states. With its well developed infrastructure and strong indigenously developed technological base, the Institute has made a mark as a leading R & D institution on Tropical sericulture in the country and is well recognized as a center for higher learning and advanced training on international front.

### Impact of R & D

Any Research and Development programme aimed at the improvement of productivity potential of the sericulture contributes to:

- (i) **The rural employment**
- (ii) **Socioeconomic development of the farmer without environmental damage**
- (iii) **The foreign exchange reserves**

Scientists working in sericulture Research and Development are constantly putting their efforts to resolve issues in major areas of sericulture by developing new innovations and technologies and improving the quality of silk fibers to match with international standards. **CSB has also been collaborating with both international and national agencies and universities involved in sericultural research, etc., to harness their technical expertise in highly specialized fields and also to pool resources for the development of new technologies in frontier areas of sericulture research.**

Due to the technologies developed by this Institute the annual mulberry raw silk production has increased to the tune of 23,060 M.T. (2011-12). The constant efforts made by CSB and state sericulture department have resulted in the over all increase in the silk production and quality.

This could be possible due to evolution of high yielding mulberry varieties such as V1, S1635, S1, S799, S13, S34, S146, BC259 and improved silkworm breeds like CSR2xCSR4, CSR2xCSR5, etc along with appropriate cultivation and rearing practices. **The output coupled with the improved processing machinery and practices have made it possible to produce silk of international standards.**





## DBT Projects undertaken by CSRTI, Mysore

भारत सरकार  
GOVERNMENT OF INDIA

विज्ञान और प्रौद्योगिकी मंत्रालय  
MINISTRY OF SCIENCE AND TECHNOLOGY



**जैवप्रौद्योगिकी विभाग**  
**DEPARTMENT OF**  
**BIOTECHNOLOGY**

No.	Project	Objectives
1.	Biological control of fungal root rot disease of mulberry by endophytic bacteria burkholderia cepacia and bacillus subtilis strains.	1. Screening and evaluation of Burkholderia cepacia and Bacillus subtilis strains against fungal root rot pathogens of mulberry. 2. Quantification of bacterial population threshold to induce systemic resistance through production of antifungal compounds 3. Use of efficient strains against soil borne fungal pathogens of mulberry.
2.	DNA marker aided analysis of mulberry gene bank towards a core assembly for sustainable conservation and enhanced utilization in crop improvement (in collaboration with CSGRC, Hosur)	1. Identification of a panel of diverse mulberry germplasm amenable to association mapping by marker (by genomic and EST SSRs) aided analysis – CSRTI, Mysore 2. Construction of a core sub-set of mulberry germplasm by phenotypic and molecular marker (SSRs and AFLPs) analysis – CSRTI, Mysore & CSGRC, Hosur 3. Evaluation of panel of diverse mulberry germplasm for other important traits viz., sprouting, senescence, rooting, leaf quality, yield contributing traits and key morphological characters – CSGRC, Hosur
3.	Popularization of productive bivoltine double hybrid “krishnaraja” with the farmers of Karnataka	Popularization of double hybrid with the farmers of Srirangapatna taluk, Mandya district, Karnataka

### Pilot Studies

No.	Name of the Pilot study	Scientist as PI/CI and collaborating agency	Budget (₹. in Lakhs)	Period	Objectives
1	Design, development of motor/ hand operated portable deflossing machines suitable for laboratory use.	Shri.S.M.Hukkeri and Dr. K.N. Madhusudhan	0.15	Three months (25-08-20 to 24-11-20)	To design and develop of two different types of motor/ hand operated cocoon deflossing machine with trolley/ wheels suitable for the laboratory uses/ small quantity/ cellular bed rearing houses.
1	Design, development and fabrication of horizontal cocoon harvesting machine for plastic collapsible mountages	Sh. S.M. Hukkeri, Scientist-D SED Section	0.25	Three months (Mar. to May 2020)	To develop harvesting machine suitable for seed cocoons with simultaneous deflossing for cutting seed cocoons

## Frontier Areas of Research



Central Silk Board invited research projects in frontier areas of sericulture for funding, from reputed institutions with in India. Areas of Research will be on **Insect Physiology, Plant Biotechnology, Plant Pathology, Genetic Engineering, Socio economics, General Entomology and Post Cocoon Technology.**



Fluorescent and coloured cocoons







*CSRTI-Mysuru*  
*Institute par excellence in*  
*Tropical Sericulture Research*

## What I learned from the visit?

**C**SRTI, MYSORE is a blend of traditional knowledge and technology in itself. The set up of its organisation and the mechanism of its working all contribute together for its high repute in Indian sericulture field.



The Institution has the distinction of being premier institution for sericulture research par excellence with all modern facilities and infrastructure including experienced scientific personnel. CSRTI has made mark as a leading R & D institution for quality research and services on tropical sericulture in the country and abroad and is well recognized as a center of higher learning and advanced training. The Institute besides conducting research, training and extension activities also offers consultancy and advisory services to national and international agencies.

*Silk has a wonderful sheen - the result of triangle-shaped fibers that reflect light like prisms and layers of protein that build up to a pearly sheen, and can be dyed a host of wonderful colors.* Silk is the most elegant textile in the world with its unparalleled grandeur, and inherent affinity for dyes, soft touch and high durability and known as the **“Queen of Textiles.”** The online visit inspired me to dig deeper into the underrated silk manufacture industry of India. The very nature of this industry with its rural based on-farm and off-farm activities and enormous employment generation potential is enough to attract the planners and policy makers to recognize the industry among one of the most appropriate avenues for socio-economic development of a largely agrarian economy like India. CSRTI, Mysore with all its efficiently working divisions and eminent scientist guides Indian sericulturists aiming to expand grandeur of Indian sericulture internationally.

From the perspective of science and research, silkworm technology is being applied to genetic engineering and biotechnology. The National Institute of Agrobiological Sciences in Tsukuba, Ibaraki Prefecture, Japan, has genetically engineered silkworms with genes that cause fluorescence in jellyfish and coral and manipulated them to produce interferon, a medicine used to treat a number of ailments. Japan is a leader in the race to decode the silkworm genome. In science field, thus, there is still a lot of scope to make major developments as far as a silkworms are concerned. CSRTI, Mysore with all its past achievements in sericulture is on its journey to make India even more than the second largest producer of silk globally.

# Conclusion



**T**hrough its dedicated team of scientists and workers, CSRTI, Mysore has contributed a lot to Indian Sericulture. It has developed many high yielding varieties of mulberry, races of silkworms producing high quality and quantity of silk, easy and economic methods of mulberry cultivation, full-proof diseases and pest control in mulberry and silkworms, labour saving silkworm rearing techniques and devices, etc. Today, the techniques developed at CSRTI, Mysore have transformed sericulture into a highly profitable farm based activity from a mere subsidiary occupation in the past. Mechanization has made mulberry cultivation and silkworm rearing feasible at large scale. This has attracted a large number of new farmers to take up sericulture in Southern and Central India.

Today, CSRTI, Mysore has completed 57 years and during this period many technologies have been developed by its researchers. Most of the CSRTI technologies have been widely adopted by the farmers. A number of products, equipments and machines developed by institute have been patented and commercialized after validation both at laboratory and field level confirming the 3E formula of effectiveness, easiness and economic viability. Now, a large number of farmers specifically in South India are realizing the benefits of these technologies. Thus, CSRTI, Mysore continues to guide our Sericulture industry.



## **References.**

Dr. Bharat B. Bindroo, Director, CSRTI Mysore & Dr. Satish Verma, Scientist E (Engineer), CSRTI Mysore (2014) **Sericulture Technologies Developed by CSRTI Mysore**

*Technical Bulletin*, CSRTI, Mysore

**New Technology of Silkworm Rearing**, Dr. S. Krishnaswami

**Annual Report (2018-19)**, CSRTI Mysore

[www.csrtimys.res.in](http://www.csrtimys.res.in)





# THANK YOU!

Roll Numk Student's Name  
18/09007 HARSIMRAN KAUR  
18/09011 SAGAR NEOPANEY  
18/09014 EKTA TYAGI  
18/09021 NAMRATA MUKHERJEE  
18/09024 AVANI SHARMA  
18/09025 KRISHNA THAKUR  
18/09027 SRISHTI RAWAT  
18/09030 AMIT KUMAR  
18/09031 HARSH  
18/09032 LICHA TATO  
18/09034 POOJA  
18/09036 ANUJ YADAV  
18/09037 JATIN KUMAR  
18/09038 HEMANT KUMAR YADAV  
18/09039 YUKTA SINGH  
18/09040 PRIYAL TIWARI  
18/09045 TANYA ADLAKHA  
18/09046 JUNAID HASSAN  
18/09048 MOHD SUHAIL  
18/09049 AAKASH  
18/09051 AASTHA SONKAR  
18/09052 DAKSHA NAGPAL  
18/09053 DIVYA AGGARWAL  
18/09054 NEHA  
18/09056 NEHA JEET  
18/09057 PINKI

Roll Numk Student's Name  
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18/09011 SAGAR NEOPANEY  
18/09014 EKTA TYAGI  
18/09021 NAMRATA MUKHERJEE  
18/09024 AVANI SHARMA  
18/09025 KRISHNA THAKUR  
18/09027 SRISHTI RAWAT  
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18/09031 HARSH  
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18/09048 MOHD SUHAIL  
18/09049 AAKASH  
18/09051 AASTHA SONKAR  
18/09052 DAKSHA NAGPAL  
18/09053 DIVYA AGGARWAL  
18/09054 NEHA  
18/09056 NEHA JEET  
18/09057 PINKI

**From:** History Shivaji College history@shivaji.du.ac.in

**Subject:** Virtual tour of Department of History 5-3-2021

**Date:** March 6, 2021 at 8:45 AM

**To:** Shivaji College shivajicollege.ac@gmail.com

**Bcc:** History Shivaji College history@shivaji.du.ac.in, Shama Mitra Chenoy shamamitrachenoy@shivaji.du.ac.in

Dear Sir,

The Department of History organised a historical tour in the virtual mode on 5th March 2021 at 2.00 pm on the zoom platform. The tour was conducted by Dr. Amarjiva Lochan. He showed us sites and explained the heritage of the Patna Museum, Ellora cave temples, Petra Mountain city, the wadi- Rum with its caches of copper, Pompeii the city buried under lava ash and now uncovered and finally the pyramids of Giza, Saqqara, the valley of the Dead, the Temples of Luxor, Hapshepsut and Philae and Abu Simbel, the temple of Ramses II. The tour ended with a vote of thanks to the speaker and the Principal and others.

Attached please find:

The screenshots of the virtual tour with the Principal, faculty and students. A copy of the poster.

Thanks and regards

Shama Mitra Chenoy

16:06



Close

Participants (112)

Search



Dr Kundan Kumar (Co-host, me)



Shivaji College (Host)



skand (Co-host)



Shama Mitra Chenoy



10\_Nandita Trivedi



Attested by the Principal,  
Shivaji College (University of Delhi)

*Shivaji Chenoy*

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- 1R 18 Ram
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- 3K 37\_Rupal Khanna
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- 4 41\_Rahul
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- 4 46\_Abhishek
 📺 🎤
- 5G 50\_Anamika Gupta
 📺 🎤
- 5Y 57\_Ashish(3rd year)
 📺 🎤

Invite

Mute All



Close

Participants (122)

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Dr Kundan Kumar (Co-host, me)



Shivaji College (Host)



skand (Co-host)



10\_Nandita Trivedi



18 Ram



41\_Rahul



46\_Abhishek



Aanvi Arora



Abhishek Dhawan



10/25004



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Shivaji College (University of Delhi)

*Shivaji*

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Abhishek History-19/35UU4



Aditya



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15:12



Close

## Participants (121)

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Dr Kundan Kumar (Co-host, me)



Shivaji College (Host)



skand (Co-host)











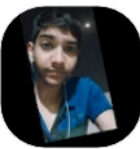






10\_Nandita Trivedi



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Shivaji College (University of Delhi)

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- 4 41\_Rahul  
- 4 46\_Abhishek  
- AA Aanvi Arora  
-  Abhishek Dhawan  
- AH Abhishek History-19/35004  
- A Aditya  

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Amarjiva Lochan (Co-host)



Shama Mitra Chenoy (Co-host)



skand (Co-host)



10\_Nandita Trivedi



18 Ram



41\_Rahul



Aanvi Arora



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Abhishek Dhawan



Abhishek History-19/35004

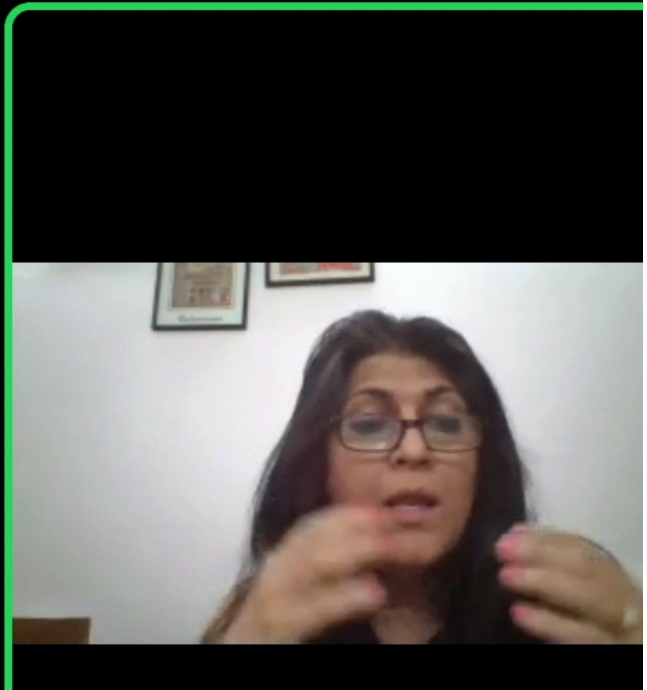
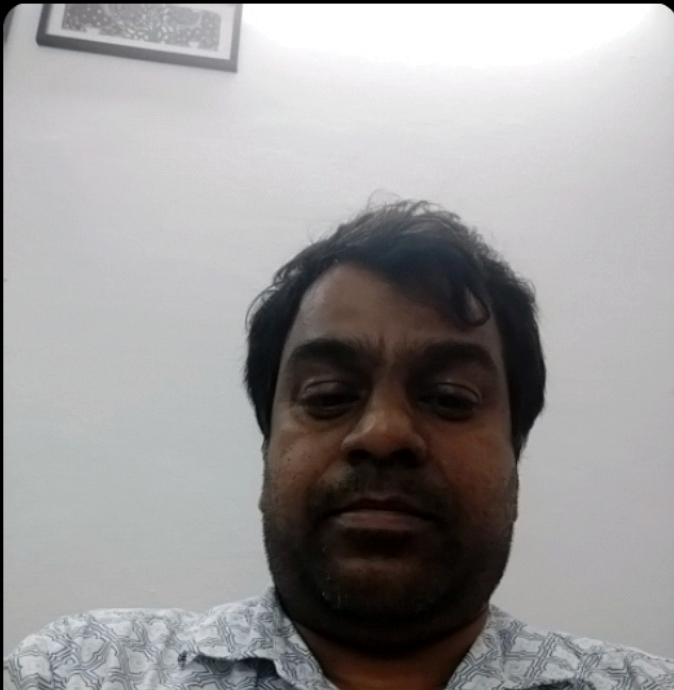


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16:07




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 Dr Kundan Kumar

Shama Mitra Chenoy

 Shivaji College

 Dr. Khurshid Khan



14:26

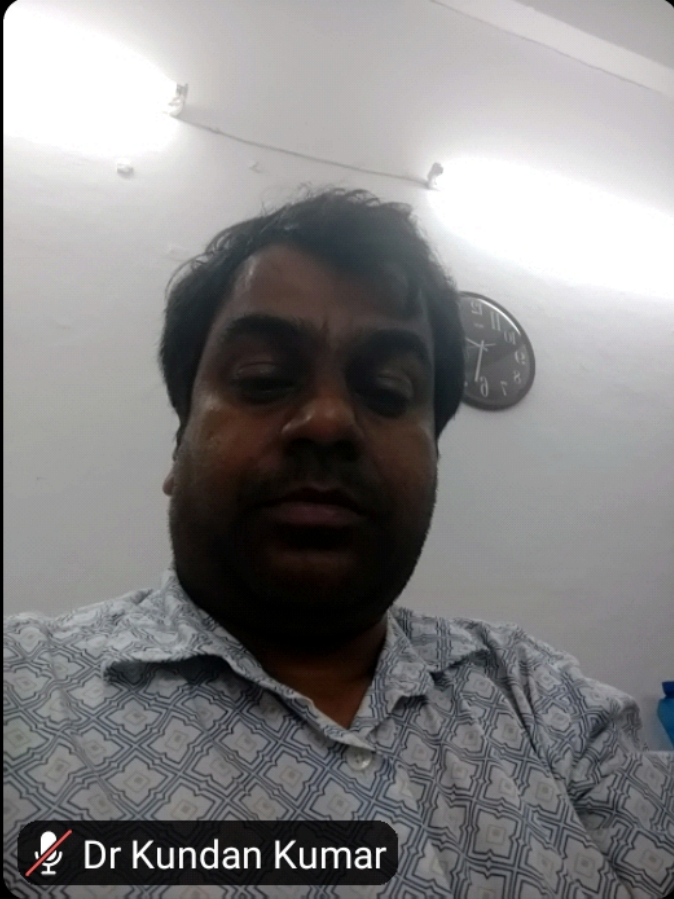



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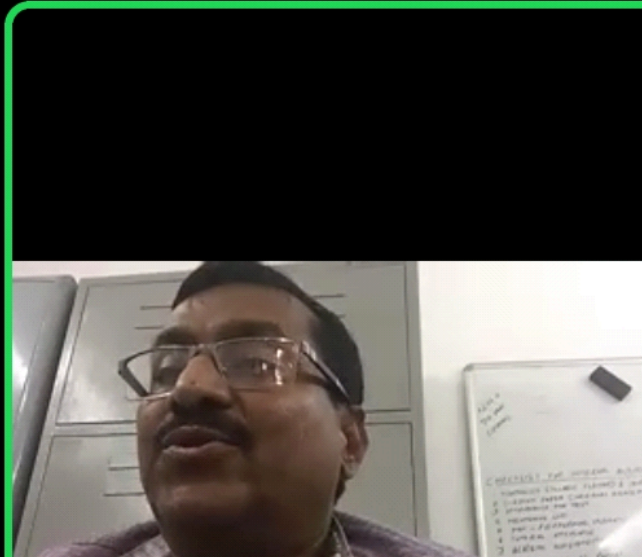




 Dr Kundan Kumar



 Shivaji College

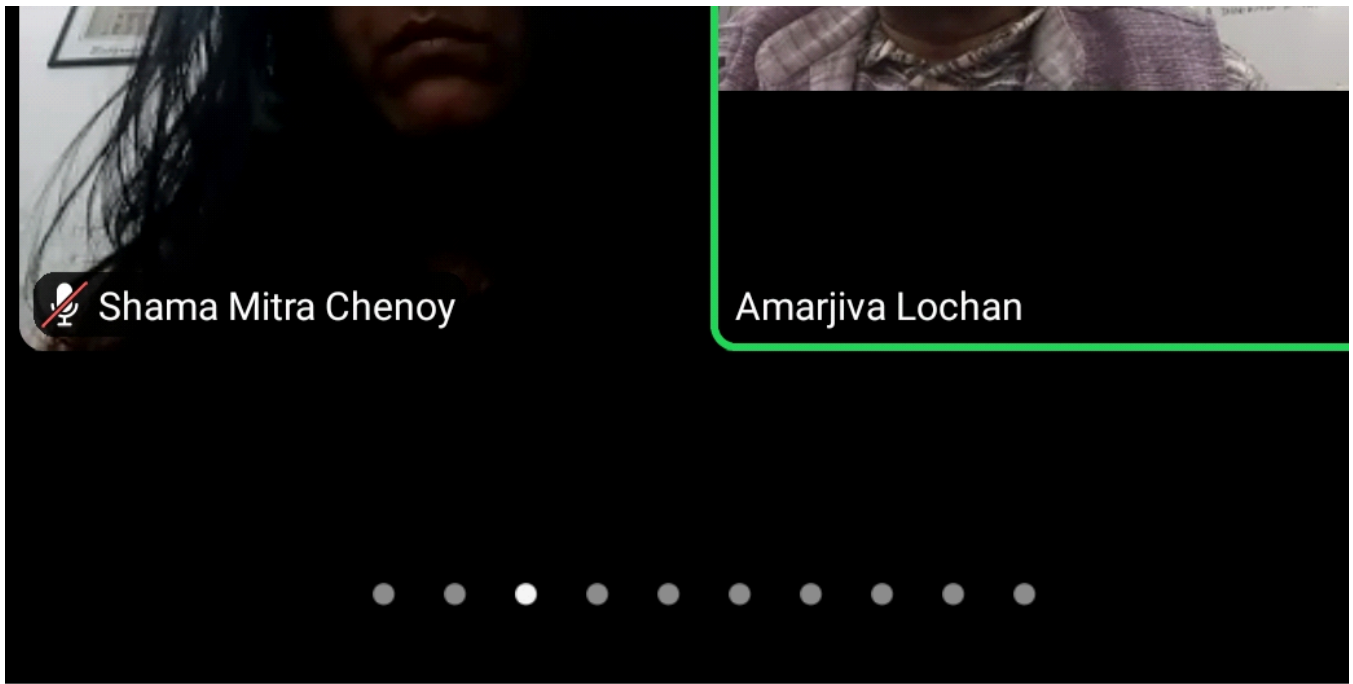


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*Shivaji* *S. S. Deka*

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## Participants (116)

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Dr Kundan Kumar (Co-host, me)



Shivaji College (Host)



skand (Co-host)



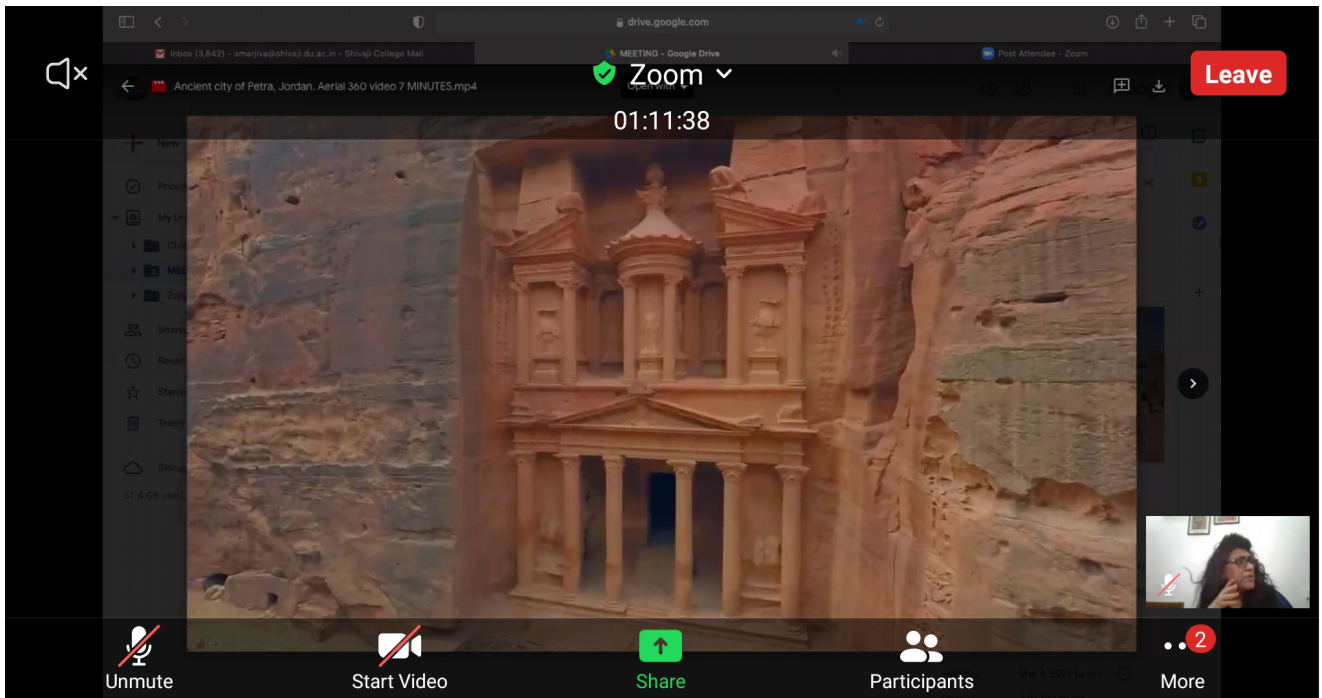
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4	41_Rahul		
AA	Aanvi Arora		
	Abhishek Dhawan		
AH	Abhishek History-19/35004		
A	Aditya		
AJ	Aditya Jaiswal		
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presents

# Virtual but Almost There Tours

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