



Janata Shikshan Sanstha's
KISAN VEER MAHAVIDYALAYA, WAI
Department of Zoology
"Certificate Course in Apiculture"
Course Report - 2023-24

The department of Zoology conducted a certificate course entitled "Certificate Course in Apiculture". The notification and advertisement was made through our college website. The brochure of the course was uploaded on the college website. The course was started on 04 August to 06 November 2023. The time - table was displayed on the department's notice board. In all 46 students were admitted for the course. Regular lectures and practical were conducted as per the time-table. Examination of the said course was conducted and certificates were issued to the students who have completed the course successfully. Students were guided with the knowledge about apiculture and economic importance of honey. The supportive departmental staff and the administration of the college and specially Hon. Principal supported a lot.

The record of the course has maintained in the department.

Course Co-Ordinator
Head
DEPARTMENT OF ZOOLOGY
Department of Zoology
Wai 412203



Principal
PRINCIPAL
KISAN VEER MAHAVIDYALAYA
Wai, Dist. Satara





JANATA SHIKSHAN SANGH'S

KISAN VEER MAHAVIDYALAYA, WAI

DEPARTMENT OF ZOOLOGY

CERTIFICATE COURSE IN APICULTURE TECHNOLOGY



Papers: I & II (100 Marks)

Practicals: I & II (100 Marks)

On site Visit Apiculture Centre,
Mahableshwar



2023-2024



Eligibility: B.Sc. I/II/III/Appear

Intake capacity: 20 + 20 + 20

Duration: 6 Months


Fee: 500/- only

Objectives:

- Aware about economic importance of honey bees.
- Identify role of honey bees in nature and in agricultural production.
- Use Apiculture for employment, self employment and other means of income.
- Apply knowledge and skill to establish its own apiculture unit.
- Understand the basic about beekeeping tools, equipment and materials.
- Manage beehives for honey production and pollination.
- Do marketing of various bee products.

Advantages of Apiculture

- ❖ High employment potential for local people
- ❖ Provides Vibrancy to Rural Economy
- ❖ Readily available market
- Eco-Friendly Activity, Low Investment, High Returns
- They are non-hazardous to Environment


Dr. Hanamantrao D. Kanase
 DE Course Co-Ordinator
 Head, Department of Zoology
 Cell : 99220102193




Principal
KISAN VEER MAHAVIDYALAYA
 Wai, Dist. Satara

Janata Shikshan Sanstha's
Kisan Veer Mahavidyalaya, Wai
Department of Zoology

Year: 2023-2024

CERTIFICATE COURSE IN APICULTURE TECHNOLOGY

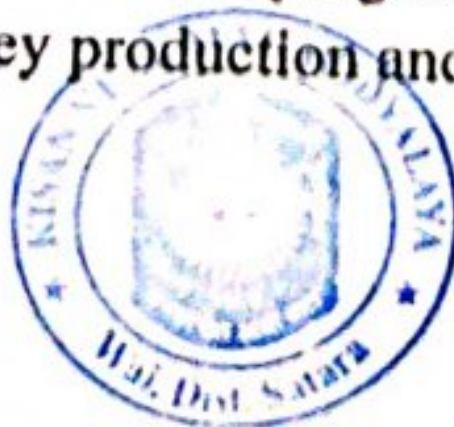
Apiculture, also known as beekeeping, is the practise of producing and maintaining honeybee colonies. If apiculture is integrated with farming in the rural areas, it is economically sustainable. Beekeeping can be started as a company by farmers, and apiculture is quite simple to learn. One of the oldest sweeteners, honey is a natural, healthy food that is pure and unfiltered. It is a food free of cholesterol and fat with no additional ingredients.

Beekeeping is a business that produces wax and honey. In India, the mountainous regions are where honey bee farming is most common, but in recent years, locals have also started this activity in the plains to increase their income. India has a great deal of potential for the growth of beekeeping because of its diverse environment and endless floral resources found in both natural vegetation and cultivated crops. Recent data indicates that around 50 million hectares of land are being used to grow crops including oilseeds, pulses, orchards, and other plants that benefit from bee pollination. Moreover, there are around 60 million hectares of forests that have the capacity to support beekeeping. At least one crore bee colonies may readily survive in this large expanse of agricultural and woodland.

Appropriate management techniques, superior beekeeping skills, ideal climatic conditions, and acceptable locations for beekeeping have boosted the quality and quantity of apicultural output while reducing unwanted risk. Beekeeping is becoming a more popular, economically viable, and environmentally acceptable agricultural enterprise, yet it still predominates in rural or interior areas of our nation, requiring increased government knowledge and assistance.

Outcomes of this Course:

- Acquire knowledge about different species and casts of the honey bees.
- Aware about economic importance of honey bees.
- Identify role of honey bees in nature and in agricultural productivity.
- Use Apiculture for employment, self employment and conservation of nature.
- Apply knowledge and skill to establish its own apiary or provides services to apiary.
- Learn various products of honey bees and value addition in these products, create scope for entrepreneurship.
- Assess the pest, and enemies/ predator of honey bees.
- Understand the basics about beekeeping tools, equipment, and managing beehives.
- Manage beehives for honey production and pollination.



- Do marketing of various bee products.

The key features are:

- Short-term skill based training programmes
- Identification of "minimum skills set" sufficient to get employment
- Flexible training delivery mechanism
- Opportunity for lifelong learning

Statement of learning outcomes:

- Working Process: Person may establish a small scale industry or a domestic business/generate employment for others.
- Professional knowledge: Basic facts, process and principle applied
- Professional skill: Recall and demonstrate practical skill, routine and repetitive work in narrow range of application
- Core skill: Communication with oral and written modes with minimum required clarity

Employability Potential of the Programme

Choosing apiculture as a grade course gives a great deal of promise for entry into the unique profession of honey bee keeping. Development of knowledge and skills in handling bees and their colonies, identifying pests that they are affected by and taking preventative measures, need and supply of food, food sources, a suitable climate, basic requirements for beekeeping, and extraction of various products from bee colonies are all included in the certificate programme in apiculture.

As a Beekeeper, Bee Breeder, Bee Product Extractor, Bee Product Analyst, Bee Product Value Addition, Bee Trainer, Bee Entrepreneur-selling Bee Colonies, Establishment of Honey House-Extraction, Processing and Packaging of Honey, Honey Export, Bee Product Value Addition

Opportunities in Government organizations working in the field of beekeeping are-

- Khadi and Village Industries Commission (KVIC).
- Central Bee Research and Training Institute (CBRTI), Pune
- State Khadi and Village Industries Board (KVIB).
- Directorate of Honey Bee Keeping, Mahabaleshwar.

Private Sector, learner can provide services as –

- Beekeeper
- Honey Processer



- Bee Breeder
- Bee Product Extractor
- Bee Product Analysis and Quality Control.
- Value Addition in bee Product.

General Information and Course Structure:

Level: Certificate

Stream: Science or any stream

Subject: Bee Keeping Management / Honey Processing

Language: English/Marathi

Teaching mode: Offline, Online through Google meet, Video and PDF notes.

Intake: 20+20 seats

Attendance: 90%

Available infrastructure: Well equipped laboratory, small & large scale Apiculture units

Teaching Staff: Qualified, Experienced Guest Lecturers & eminent professors will be invited.

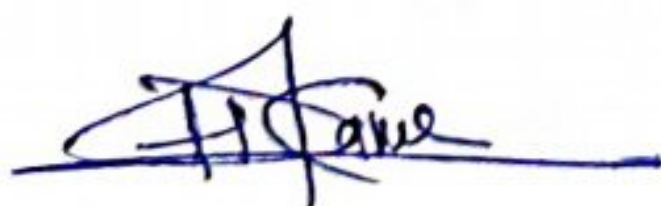
Duration of Course:

Sr.No.	Course	Duration	Eligibility
1)	Certificate Course in Apiculture technology	3 Month	B.Sc.



3 Months Apiculture Research Training (Apiculture Course):-

Sr. No.	Syllabus	Duration	Theory	Practical	Days
1)	General Introduction History Species Diversity Bee Keeping Equipments	4	4	4	12
2)	Morphology and lifecycle of Honey bees Social organization and communication in bees Collection and extraction of pollen Bee wax Nesting pattern Bee sting Bee venom	4	4	4	12
3)	Selection of location Up keeping and off seasonal management of bee colonies. Diseases and parasites of honey bees and their control measure.	6	6	6	18
4)	Composition of honey Conversion of nectar to honey Economic importance of honey and other bee products. Medical value. Special properties and uses of honey and processing and value addition of honey.	8	8	8	24
5)	Marketing aspect of bee products. Role of govt. and Non- Govt. agencies Scope of apiculture in India	8	8	8	24
	Total	30	30	30	90



Course Co-Ordinator
Head,
DEPARTMENT OF ZOOLOGY
Department of Zoology
Kisan Veer Mahavidyalaya
Wai 412803





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Wai, Dist. Satara

Department of Zoology

Kisan Veer Mahavidyalaya, Wai

Date: 01/08/2023

Notice

All B.Sc. (Zoology) students are here by informed that our department will be conducting a "Certificate Course in Apiculture". The course is scheduled to commence on 04/08/2023. The duration of the course is 3 months, and the fee is 500/-. Interested students should enroll their names with Lab Assistant Shri Thombare Navnath in the Department of Zoology

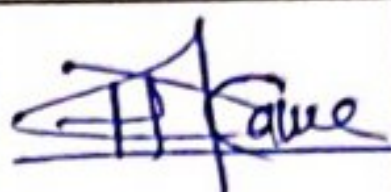
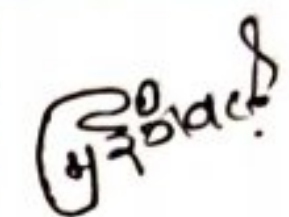





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Janata Shikshan Sanstha's
Kisan Veer Mahavidyalaya, Wai
Department Of Zoology

Notice

The meeting of the Board of Studies of Zoology will be held on Thursday 11th May 2023 at 11:00 am in the Department of Zoology. The meeting will be chaired by Dr. H. D. Kanase, Head, Department of Zoology, Kisan Veer Mahavidyalaya, Wai. All the members are advised to attend meeting.

Sr. No.	Name	Designation	Position	Signature
1.	Dr. H. D. Kanase	Head Department of Zoology Kisan Veer Mahavidyalaya Wai	Chairperson	
2.	Dr. Mrs. M. V. Ingawle	Head Department of Botany Kisan Veer Mahavidyalaya Wai	Member	
3.	Mr. R.R. Tayade	Asst. Prof. Department of Zoology Kisan Veer Mahavidyalaya Wai	Member	
4.	Mrs. S. R. More	Asst. Prof. Department of zoology Kisan Veer Mahavidyalaya Wai	Member	

Agenda :

1. To recommended to the college Development Committee through the Principal the introduction of new Certificate Course/s
2. To recommended to the college Development Committee through the Principal the discontinuation of earlier Certificate Course
3. To recommended to the Principal of course syllabi, course structure & evaluation scheme of new Certificate course
4. To recommended the reference books and other study material to be used for the study of the Course/s
5. Any other subject with the permission of the Chair


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Kisan Veer Mahavidyalaya, Wai
 Department Of Zoology
Certificate Course In Apiculture 2023-24
Syllabus

Theory: Paper I		
Unit-I: General Apiculture (Bee Keeping)		
1)	History of bee keeping	
2)	Species diversity of honey bees	
3)	Pollination support through beekeeping Role of honeybees in ecosystem Domestication of Indian bees and Italian bees	
4)	Bee hives and peculiarities Capturing of bee colonies Bee keeping equipments	
Unit-II: Biology and social life of honey bees		
1)	Morphology and identification of Queen, drones and worker bees, cast system in honey bees-family and cast, division of labor, bee dance and communication in bees.	
2)	Honey Bee biology-emerging of queen, swarming, mating, egg laying, lifespan.	
3)	Collection of pollen by bees, morphological modifications - modified legs, extraction of pollen.	
4)	Royal jelly and hormonal influence	
5)	Bee wax, wax glands	
6)	Nesting pattern of bees	
7)	Bee sting, bee venom, venom gland	



8)	Architectural design of bee hives, types of cells	
Unit III: Basic operational principles of bee colonies		
1)	Selection of location	
2)	Up keeping of bee colonies	
3)	Off seasonal management of bee colonies	
4)	Growth period management	
5)	Honey flow-seasonal management	
6)	Diseases and parasites of honey bees-control measures	
Unit IV: Paper – II		
A)	Honey and its ingredients: <ul style="list-style-type: none"> • Composition of honey, conversion of nectar to honey, 	
B)	Economic importance of honey and other bee products: <ul style="list-style-type: none"> • Medical value of honey, special properties and uses of honey, processing and value addition of honey • Bee wax and uses, extraction, purification, processing and value addition of bee wax • Bee pollen and bee venom - uses 	
Unit V:		
1)	Marketing aspects of bee products	
2)	Role of Govt and Non-Govt agencies in promoting apiculture in Maharashtra .	
3)	Present status and future scope of apiculture as a small scale industry in Maharashtra.	
4)	Present scenario and Scope of apiculture in India	



Practical: Practical - I	
1)	Introduction of parts of Bee box - ISI 'A' type 'B' type & Tools used in Bee keeping
2)	Identification of different casts in honeybees-Queen, drones and workers & Brood
3)	Structure of honey comb-different types of cells for queen, drones and workers
4)	Morphological peculiarities of worker bees-Honey and pollen storage structures
5)	Methods of Multiplication of Bee Colonies Steps for strengthening of colonies- Requeening technique
6)	Propagation of bee plants- Preparation of floral calendar
Practical - II	
1)	Care- Transportation of bee colonies
2)	Familiarize bee keeping instruments and bee hives
3)	Extraction of Honey using Honey extractor, moisture reduction, packing and storing of Honey
4)	Methods of Extraction of Bees wax, Royal Jelly and Bee venom
5)	Fermentation and Granulation of Honey.
7)	Visit to Apiculture Centre

References:

- 1) Anatomy of Honey bee R.E. Snoadgrass.
- 2) Apiculture, 1987 (Translated from French in English by R.K.Kauls 1994), P.Jean-Prost, Oxford and IBH Publication, New Delhi.
- 3) Bee Biology of the Honey Bee, 87, M.Winston, Harvard University Press, Cambridge, England. 27. (The)
- 4) Bee Genetica and Breeding 1986, T.E.Reinderer, Academic Press Inc., London.
- 5) Beekeeping by E.F.Phillips. Agrobios (India) Publication.
- 6) Beekeeping in India, 1962,82, Sardar singh, ICAR, New Delhi.
- 7) Beekeeping in Integrated Mountain Development - Economics & Scientific perspective Publication.



- 8) Beekeeping- Teach yourself Books, By-Vernon F.(1984)
- 9) Bees and Bee keeping in India, D.P. Abrol, Kaluani Publications.
- 10) Bees and Bee Keeping Science, Prentice & World Resources, 1990 – Eva Crane, Heinemann Newnes, Oxford, UK.
- 11) Bees and Mankind 1982, J.B.Free, George Allen & Unwin (Pub.), Limited London, UK.
25. Biogeography and Taxonomy of Honeybees 1985, F.Ruttner, Springer-Verlag, Berlin, Germany.
- 12) Bees their vision, chemical senses & language-1950, Cornell University Press- By Fonscolombe, & Karl.
- 13) Dance Language and Orientation of Bee 1967, K.VonFrisch, Harvard University Press, Cambridge, England.
- 14) Ecology and Neutral History of Tropical Bees 1989, D.W.Roubik, Cambridge University Press, Cambridge, England.
- 15) First Lesson in Beekeeping :Dadant C.D. Malilton, Illinois.
- 16) Handbook of Beekeeping by Dharamsingh, Devendra Pratap Singh, Agrobios.
- 17) Honey bee Biology 1982- By Free Johnson & Central Association of Bee Keepers England.
- 18) Honey Bee Ecology – A study of adaptation in social life 1985, T.D.Seeley, Princeton University Press, Princeton, NJ 08540, USA.
- 19) List of Reference Books for the subject Apiculture :-
- 20) The hive & the Honey Bee- 1975, 4th edition Dadant Publication, America.
- 21) The Hive and the Honey Bee 1992 (Revised Edition), J.Graham, Dadant & Sons Inc., Hamilton, Illinois 62341, USA.
- 22) The Social Behaviour of the Bees, 1974 : By Missioner C.D.


 Course Coordinator
 DEPARTMENT OF ZOOLOGY
 Kisan Veer Mahavidyalaya
 Wai 412203





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 KISAN VEER MAHAVIDYALAYA
 Wai, Dist. Satara

Janata Shikshan Sanstha's
Kisan Veer Mahavidyalaya, Wai
 Department of Zoology
 Certificate Course In Apiculture
 Student List 2023-24

Sr No	Roll No	Student Name	Class
1	40	SHINDE AKSHADA G	B.Sc. III
2	48	KAMBLE RONIT S	B.Sc. III
3	49	CHIKANE OMKAR S	B.Sc. III
4	53	KAYANGUDE SAKSHI	B.Sc. III
5	65	WALGE SANIYA J	B.Sc. III
6	78	BHILARE JYOTI R	B.Sc. II
7	1	INGAWALE SANIKA S	B.Sc. II
8	2	HAGAVANE TEJASWI A	B.Sc. II
9	3	CHAVAN SNEHAL S	B.Sc. II
10	4	WADKAR OMKAR A	B.Sc. II
11	5	DALVI SANKET M	B.Sc. II
12	6	KAMBLE ADITYA R	B.Sc. II
13	7	JADHAV SHUBHAM L	B.Sc. II
14	10	BARGE MAYUR K	B.Sc. II
15	11	DANGE RAMAJAN R	B.Sc. II
16	12	WAGH AAKANKSHA R	B.Sc. II
17	13	GAIKWAD AKANKSHA H	B.Sc. II
18	14	NIKITA K WAGHMARE	B.Sc. II
19	15	CHAVAN UTKARSHA S	B.Sc. II
20	16	NEHA K WAGHMARE	B.Sc. II
21	17	VEDPATHAK ATHARV S	B.Sc. II
22	23	SHELAR SAHIL S	B.Sc. II
23	24	ITHAPE PRAJJWAL B	B.Sc. II
24	25	PAWAR KIRAN S	B.Sc. II
25	26	JADHAV SOURAV S	B.Sc. II
26	27	PAWAR NIKHIL D	B.Sc. II
27	30	CHETANA A SAWANT	B.Sc. II
28	32	NIKAM ARYAN J	B.Sc. II
29	34	JADHAV APEKSHA M	B.Sc. II
30	35	DHAMAL PRIYANKA J	B.Sc. II
31	36	ITHAPE MRUNALINI J	B.Sc. II
32	87	JAMBHALE TEJAL M	B.Sc. I
33	88	GHORPADE SANIKA S	B.Sc. I
34	90	TIKNUR SITARAM V	B.Sc. I
35	91	YADAV MINAKSHI S	B.Sc. I
36	94	DHAMAL ARTI R	B.Sc. I
37	95	BAGADE DHANARAJ R	B.Sc. I
38	100	DHEKANE DIKSHA D	B.Sc. I
39	101	RAUT TEJAL A	B.Sc. I
40	102	DHONE PRATHAMESH N	B.Sc. I
41	104	PISAL SAKSHI A	B.Sc. I



42	105	KALE PRAGATI J	B.Sc. I
43	106	YADAV UTTARA S	B.Sc. I
44	107	SAPKAL SAIEE C	B.Sc. I
45	109	MULANI ALTAF K	B.Sc. I
46	121	MOZAR TANVI A	B.Sc. I


 Head,
 Department Of Zoology
 Kisan Veer Mahavidyalaya
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 Principal
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 KISAN VEER MAHAVIDYALAYA
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Aug-Sep

	9/08/23	10/08/23	11/08/23	12/08/23	18/08/23	19/08/23	25/08/23	26/08/23	1/09/23	2/09/23	8/09/23	9/09/23	15/09/23	16/09/23
31	ITHAPE MRUNALINI J	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB
32	JAMBHALE TEJAL M	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB
33	GHORPADE SANIKA S	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB
34	TIKNUR SITARAM V	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB
35	YADAV MINAKSHI S	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB
36	DHAMAL ARTI R	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB
37	BAGADE DHANARAJ R	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB
38	DHEKANE DIKSHA D	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB
39	RAUT TEJAL A	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB
40	DHONE PRATHAMESH N	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB
41	PISAL SAKSHIA	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB
42	KALE PRAGATI J	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB
43	YADAV UTTARA S	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB
44	SAPKAL SAIEE C	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB
45	MULANI ALTAF K	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB
46	MOZAR TANVI A	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB



Head
DEPARTMENT OF ZOOLOGY
Kisan Veer Mahavidyalaya
Waj 412003

Teacher Incharge

Janata Shikshan Sanstha's
Kisan Veer Mahavidyalaya, Wai
Department of Zoology
Short Term Course 2023-24

Apiculture

Sep - Nov

Student Attendance

Sr No	Roll No	Student Name	22/09/23	23/09/23	29/09/23	30/09/23	06/10/23	07/10/23	13/10/23	14/10/23	20/10/23	21/10/23	27/10/23	28/10/23	03/11/23	04/11/23
1	40	SHINDE AKSHADA G	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present
2	48	KAMBLE RONIT S	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present
3	49	CHIKANE OMKAR S	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present
4	53	KAYANGUDE SAKSHI	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present
5	65	WALGE SANIYA J	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present
6	78	BHILARE JYOTI R	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present
7	1	INGAWALE SANIKA S	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present
8	2	HAGAVANE TEJASWI A	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present
9	3	CHAVAN SNEHAL S	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present
10	4	WADKAR OMKAR A	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present
11	5	DALVI SANKET M	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present
12	6	KAMBLE ADITYA R	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present
13	7	JADHAV SHUBHAM L	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present



DEPARTMENT OF ZOOLOGY
Kisan Veer Mahavidyalaya
Wai 412003

Teacher Incharge

Kisan Veer Mahavidyalaya, Wai

Department of Zoology

Date : 01/02/2024

Notice

Students of B.Sc. (Zoology) are hereby informed that their theory and practical's examination of Certificate Course in Apiculture is arranged on Friday, 09/02/2024 as per following Schedule.

Date	Title	Time
09/02/2024	Paper I	9:00 am to 11:00 am
	Paper II	11:30 am to 1:30 pm
10/02/2024	Practical I	9:00 am to 11:00 am
	Practical II	11:30 am to 1:30 pm



[Handwritten Signature]

Head

DEPARTMENT OF ZOOLOGY
Kisan Veer Mahavidyalaya
Wai 412803

Janata Shikshan Sanstha's
Kisan Veer Mahavidyalaya, Wai
Department of Zoology
Certificate Course In Apiculture (2023-2024)
Paper I & II

Day & Date:

Time: 2 Hrs

Total Marks: 50

Q1. Select correct option and rewrite the sentence.

10

- 1)
- 2)
- 3)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9)
- 10)

Q2. Answer the following questions.

20

- 1)
- 2)

Q3. Write short notes on.

20

- 1)
- 2)
- 3)
- 4)


Teacher In-charge


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Department of Zoology
Certificate Course In Apiculture (2023-2024)
Practical Exam Paper I

Day & Date:

Time: 2 Hrs

Total Marks: 50

Instructions:

- 1) All Questions are Compulsory.
- 2) Draw diagram wherever necessary.
- 3) Figures to the right indicate full marks.

Q.1. Answer the following.

1. Identify, and mention the diagnostic features 04
2. Identify and describe 04
3. Identify & give function 04
4. Identify and describe 04
5. Identify, and give uses 04
6. Identify and state its morphological features 04
7. Identify, and state its functions 04
8. Identify and give its function 04
9. Identify, describe & sketch label 04
10. Describe disease 04

Q.2. Submission of a report on apiculture. 10


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Department of Zoology
Certificate Course In Apiculture (2023-2024)
Practical Exam Paper II

Day & Date:

Time: 2 Hrs

Total Marks: 50

Instructions:

- 1) All Questions are Compulsory.
- 2) Draw diagram wherever necessary.
- 3) Figures to the right indicate full marks.

Q.1. Answer the following.

1. Identify, and give uses 04
2. Identify and describe 04
3. Identify, describe and mention its peculiar features 04
4. Identify and describe 04
5. Identify, and give uses 04
6. Identify and state its morphological features 04
7. Identify, and describe given species 04
8. Identify and give function 04
9. Identify, sketch and label life cycle 04
10. Identify & give function 04

Q.2. Submission of a report on apiculture. 10


Teacher In-charge


Course Co-Ordinator
Head,
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Wai 412203


Principal
PRINCIPAL
KISAN VEER MAHAVIDYALAYA
Wai, Dist. Satara



Janata Shikshan Sanstha's
Kisan Veer Mahavidyalaya, Wai
Department of Zoology
Certificate Course In Apiculture (2023-2024)
Paper I

Day & Date: Friday 09/02/2024

Time: 2 Hrs

Total Marks: 50

Q1. Select correct option and rewrite the sentence.

10

- 1) Honey bee belongs to class _____.
a) Mammalia
b) Pices
c) Insecta
d) Reptilia
- 2) *Apis dorsata* is used to refer to _____
a) little bee
b) indian bee
c) european bee
d) rock bee
- 3) The honey bee is of greatest use to mankind as _____
a) it is of medicinal value
b) helps in cross pollination
c) we get honey from them
d) none of these
- 4) Nature of honey is _____
a) acidic
b) alkaline
c) neutral
d) basic
- 5) The development of a male bee (drone) takes _____ days.
a) 16
b) 19
c) 22
d) 24
- 6) Queen is specified for _____
a) administration
b) making hive
c) egg laying
d) collection of food
- 7) In honey breathe drones are produced from _____
a) unfertilized eggs
b) fertilized eggs
c) larvae fed by royal jelly
d) fasting larvae
- 8) _____ is commanly known as Giant bee

- a) *Apis mellifera*
c) *Apis cerana indica*

- b) *Apis dorsata*
d) *Apis florea*

9) Body of honey bee is divided into _____ regions

- a) 1
c) 3
b) 2
d) 4

10) Species construct hive on tall plants.

- b) *Apis mellifera*
c) *Apis cerana indica*
b) *Apis dorsata*
d) *Apis florea*

Q2. Answer the following questions

20

- 1) Describe the diseases of honey bees and write control measures.
2) Describe the casts of Honey bee

Q3. Write short notes on

20

- 1) Bee keeping equipment's
2) Chemical composition of honey
3) History of bee keeping
4) Bee dance





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Department of Zoology

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Paper II

Day & Date: Friday 09/02/2024

Time: 2 Hrs

Total Marks: 50

Q1. Select correct option and rewrite the sentence.

10

- 1) Rearing of honey bee is called as _____.
- a) sericulture b) lac Culture
c) vermiculture d) apiculture
- 2) _____ is commonly known as European bee.
- a) *Apis mellifera* b) *Apis dorsata*
c) *Apis cerana indica* d) *Apis florea*
- 3) Mouth parts of worker bees are modified for _____.
- a) sucking & lapping b) biting and chewing
c) grasping d) biting
- 4) In workers egg laying apparatus modified into _____.
- a) Sting b) Ovipositor
c) Scent glands d) all of these
- 5) In Queen bee egg laying is called _____.
- a) scent glands b) ovipositor
c) sting d) all of these
- 6) Reproductive organs are fully developed in _____.

- a) queen
b) drone
c) both in queen and drone
d) Worker
- 7) The pollen basket is represent on _____ legs
a) Prothoracic
b) Mesothoracic
c) Metathoracic
d) All of these
- 8) The primary objective of bee keeping is to increase _____
a) Propagation
b) Honey extraction
c) Crop Production
d) Wax production
- 9) _____ is commanly known as little bee
a) *Apis melifera*
b) *Apis dorsata*
c) *Apis cerana indica*
d) *Apis florea*
- 10) Abdomen of Honey bee bears _____
a) Sting
b) Wax glands
c) Scent gland
d) All of these

Q2. Answer the following questions

20

- 1) Describe economic importance of honey and add a short note on formation of honey
- 2) Describe present scenario and scope of apiculture in India

Q3. Write a short notes on

20

- 1) Types of honey
- 2) Royal jelly
- 3) Role of Gov. and Non Gov. agencies In apiculture
- 4) Uses of Bee wax



[Signature]

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Practical Exam Paper I

Day & Date: Saturday 10/02/2024

Total Marks: 50

Time: 2 Hrs

Instructions:

- 1) All Questions are Compulsory.
- 2) Draw diagram wherever necessary.
- 3) Figures to the right indicate full marks.

Q.1. Answer the following.

1. Identify, and mention the diagnostic features – Queen 04
 2. Identify and describe. – Newton Hive 04
 3. Identify & give functions . – Smoker 04
 4. Identify and describe – Bee Veil 04
 5. Identify, and give uses –Bee wax 04
 6. Identify and state its morphological features - Worker. 04
 7. Identify, and state its functions. – Royal Jelly 04
 8. Identify and give its function. – Honey 04
 9. Identify, describe & Sketch label . – Uncapping knife 04
 - 10 Describe diseases of - Honey bees 04
- Q.2. Submission of a report on apiculture. 10




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Practical Exam Paper II

Day & Date: Saturday 10/02/2024

Time: 2 Hrs

Total Marks: 50

Instructions:

- 1) All Questions are Compulsory.
- 2) Draw diagram wherever necessary.
- 3) Figures to the right indicate full marks.

Q.1. Answer the following.

1. Identify, and give uses – Queen Excluder 04
2. Identify and describe. - Honey extractor 04
3. Identify, describe and mention its peculiar features. – Worker 04
4. Identify and describe – Natural Bee hive 04
5. Identify, and give uses –Honey 04
6. Identify and state its morphological features - Drone. 04
7. Identify, and describe given species. – Apis dorsata 04
8. Identify and give function. – Hand gloves 04
9. Identify, sketch and label life cycle. – Bee brush 04
10. Identify & give function of - Royal jelly 04

Q.2. Submission of a report on apiculture.

10




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 Maeksheet (2023 - 24)



Sr No	Roll No	Class	Student Name	Marks					Total
				Theory Paper I	Theory Paper II	Practical I	Practical II	Practical III	
1	40	B.Sc. III	SHINDE AKSHADA G	40	39	48	46	173	
2	48	B.Sc. III	KAMBLE RONIT S	32	36	50	43	161	
3	49	B.Sc. III	CHIKANE OMKAR S	34	36	48	44	162	
4	53	B.Sc. III	KAYANGUDE SAKSHI	32	42	50	45	169	
5	65	B.Sc. III	WALGE SANIYA J	46	40	47	46	179	
6	78	B.Sc. III	BHILARE JYOTI R	32	38	49	42	161	
7	1	B.Sc. II	INGAWALE SANIKA S	38	29	35	42	144	
8	2	B.Sc. II	HAGAVANE TEJASWI A	36	28	36	42	142	
9	3	B.Sc. II	CHAVAN SNEHAL S	22	26	32	30	110	
10	4	B.Sc. II	WADKAR OMKAR A	28	24	38	39	129	
11	5	B.Sc. II	DALVI SANKET M	28	25	34	38	125	
12	6	B.Sc. II	KAMBLE ADITYA R	30	26	36	40	132	
13	7	B.Sc. II	JADHAV SHUBHAM L	38	28	39	41	146	
14	10	B.Sc. II	BARGE MAYUR K	34	28	37	40	139	
15	11	B.Sc. II	DANGE RAMAJAN R	26	24	30	32	112	
16	12	B.Sc. II	WAGH AAKANKSHA R	24	26	30	32	112	
17	13	B.Sc. II	GAIKWAD AKANKSHA H	22	25	30	31	108	
18	14	B.Sc. II	NIKITA K WAGHMARE	24	22	30	34	110	
19	15	B.Sc. II	CHAVAN UTKARSHA S	23	28	30	28	109	
20	16	B.Sc. II	NEHA K WAGHMARE	28	25	32	34	119	
21	17	B.Sc. II	VEDPATHAK ATHARV S	26	28	30	32	116	
22	23	B.Sc. II	SHELAR SAHIL S	36	27	35	40	138	
23	24	B.Sc. II	ITHAPE PRAJJWAL B	36	27	38	40	141	
24	25	B.Sc. II	PAWAR KIRAN S	36	23	38	40	137	

25	26	B.Sc. II	JADHAV SOURAV S	22	30	40	44	136
26	27	B.Sc. II	PAWAR NIKHIL D	22	26	28	26	102
27	30	B.Sc. II	CHETANA A SAWANT	32	34	40	42	148
28	32	B.Sc. II	NIKAM ARYAN J	28	26	38	42	134
29	34	B.Sc. II	JADHAV APEKSHA M	28	26	44	43	141
30	35	B.Sc. II	DHAMAL PRIYANKA J	24	26	30	32	112
31	36	B.Sc. II	ITHAPE MRUNALINI J	36	27	33	43	139
32	87	B.Sc. I	JAMBHALE TEJAL M	36	28	32	39	135
33	88	B.Sc. I	GHORPADE SANIKA S	26	24	22	24	96
34	90	B.Sc. I	TIKNUR SITARAM V	24	22	26	24	96
35	91	B.Sc. I	YADAV MINAKSHI S	25	26	28	30	109
36	94	B.Sc. I	DHAMAL ARTI R	AB	AB	AB	AB	AB
37	95	B.Sc. I	BAGADE DHANARAJ R	26	24	28	26	104
38	100	B.Sc. I	DHEKANE DIKSHA D	36	26	33	24	119
39	101	B.Sc. I	RAUT TEJAL A	36	26	32	33	127
40	102	B.Sc. I	DHONE PRATHAMESH N	AB	AB	AB	AB	AB
41	104	B.Sc. I	PISAL SAKSHI A	32	26	36	46	140
42	105	B.Sc. I	KALE PRAGATI J	22	24	24	26	96
43	106	B.Sc. I	YADAV UTTARA S	AB	AB	AB	AB	AB
44	107	B.Sc. I	SAPKAL SAIEE C	20	22	23	25	90
45	109	B.Sc. I	MULANI ALTAF K	AB	AB	AB	AB	AB
46	121	B.Sc. I	MOZAR TANVI A	38	29	33	42	142


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DEPARTMENT OF ZOOLOGY


Certificate

This is to certify that Shri/Miss Walge Saniya Javed has completed successfully **Certificate Course in Apiculture** conducted by Department of Zoology, Kisan Veer Mahavidyalaya, Wai for the Academic year 2023-24.


Course Co-Ordinator

Head,
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