



P.P. Swami Vivekanand Sevashram Sanstha, Shirala's
**VISHWASRAO NAIK ARTS, COMMERCE &
BABA NAIK SCIENCE MAHAVIDYALAYA, SHIRALA**

Tal.: Shirala, Dist.: Sangli, Maharashtra - 415408

(Affiliated to Shivaji University, Kolhapur.)

(JUNIOR/SENIOR)



EST : JUN-1970

NAAC GRADE - 'B'

Junior College Code : 15

Junior College No. J-22-09-001

UDISE No.: 27350713220

Principal : **Dr. R. B. Bansode**

M.A., M.Phil., Ph.D.

(02345) 272107 ✉ vishwasraonaik@rediffmail.com 🌐 www.vnbnmshirala.org

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Sr. No.	Document
1	Mechanism of internal assessment



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MECHANISM OF INTERNAL ASSESSMENT

2023-2024



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CIE 2023-24

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Out Ward No. V.N.M. /

/

Date : / / 20



STUDENTS UNIT TEST NOTICE

All the students from B.Sc. I year informed that Unit Test-I (Semester-I) will be held on 05/09/2023 from 11.00.am to 12.00pm.

All the student are instructed to remain present for the scheduled test.


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Science Mahavidyalaya Shirala.

Tal. Shirala, Dist. Sangli-415408

DEPARTMENT OF BOTANY

UNIT TEST-I

I YEAR-2023-24 (SEMESTER –I)

**Botany Paper-I: DSC-13A: BIODIVERSITY OF MICROBES, ALGAE
and FUNGI**

DATE:08/09/2023

TIME:11.00am-12.00pm

Mark:20

Time: 1 Hours

=====

1. In which the reproductive organs are hidden?
 - a. Cryptogamae
 - b. Phanerogamae
 - c. Gymnosperms
 - d. angiosperms
2. Which phylum of animals is also called flatworms?
 - a. Porifera
 - b. Coelenterata
 - c. Platyhelminthes
 - d. Nematoda
3. What is the exclusive marine phylum?
 - a. Echinodermata
 - b. Porifera
 - c. Cnidarians
 - d. Protozoa
4. The mode of nutrition in fungi
 - a. only saprotrophic
 - b. saprotrophic or parasitic
 - c. only parasitic
 - d. none of above
5. What is not possessed by bacteria?
 - a. membrane bound organelles
 - b. nucleus
 - c. nucleolus
 - d. all of these
6. What does Arthropod means?
 - a. bonous legs
 - b. cartilaginous legs
 - c. largest legs
 - d. jointed legs
7. What is not poisoning among these?

- a. scorpion
 - b. centipede
 - c. spider
 - d. crab
8. The excretory system in annelids is consisted of tubes called?
 - a. flame cells
 - b. metanephridia
 - c. nephridia
 - d. protonephridia
 9. Which sub group in plant kingdom produces flowers?
 - a. Angiosperms
 - b. fungi
 - c. mosses
 - d. ferns
 10. Choose the vascular plants out of these.
 - a. mosses
 - b. liverworts
 - c. hornworts
 - d. ferns
 11. In which organism flame cells form the excretory system?
 - a. flatworms
 - b. earthworms
 - c. insects
 - d. crabs
 12. Which of the these are found filamentous
 - a. Spirogyra
 - b. euglena
 - c. chlamydomonas
 - d. amoeba
 13. What does a bacteria lack?
 - a. endoplasmic reticulum
 - b. DNA.
 - c. cell wall
 - d. cytoplasm
 14. What is the mode of nutrition in bacteria?
 - a. autotrophic
 - b. heterotrophic
 - c. autotrophic and heterotrophic
 - d. none of these
 15. What is the phylum of Octopus?
 - a. Arthropoda
 - b. Mollusca
 - c. Annelida
 - d. cnidarian
 16. Which of these entities is an indicator of the SO₂ pollution of air?
 - (a) Puffballs
 - (b) Mushrooms

(c) Mosses

(d) Lichens

17. The fungal disease – the black rust of wheat is caused by

(a) *Melampsora lini*

(b) *Claviceps purpurea*

(c) *Puccinia graminis tritici*

(d) *Albugo candida*

18. What does 'Perfect stage' of a fungus indicate?

(a) indicates that it can reproduce asexually

(b) indicates that it is perfectly healthy

(c) indicates that it is able to form perfect sexual spores

(d) All of the above

19. Death angel/death cap (*amanita*) and Jack O Lantern mushroom are all examples of

(a) Poisonous mushrooms

(b) Edible mushrooms

(c) None of the above

(d) Both (a) and (b)

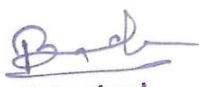
20. Covered smut of *Sorghum* is caused by

(a) *Sphacelotheca sorghi*

(b) *Sphacelotheca cruenta*

(c) *Sphacelotheca reiliana*

(d) *Tolyposporium ehrenbergii*

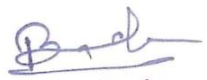

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Shirala, Dist. Sangli,

INTERNAL TEST RESULT

Sr. No.	Name of the Students	Category	Present/Absent	Mark out of 20	Pass/Fail
1.	Gaikwad Sanika Dnyandev	OPEN	P	14	PASS
2.	Jadhav Paras sanjay	OPEN	P	13	PASS
3.	Janwadkar Sanika Ramchandra	OPEN	AB	00	FAIL
4.	Kadam Rushikesh Ashok	OPEN	P	16	PASS
5.	Kamble Abhishek Dadu	SC	P	17	PASS
6.	Khabale Prathamesh shivaji	OPEN	P	18	PASS
7.	Khandekar Pranav Mansing	OPEN	P	14	PASS
8.	Khot Shrutika Sunil	OPEN	P	17	PASS
9.	Lavate Harshada Dattatry	OPEN	AB	00	FAIL
10.	Lohar Avishkar Chandrakant	NT-B	P	14	PASS
11.	Patil Komal Tanaji	OPEN	P	14	PASS
12.	Patil Prathamesh Anandrao	OPEN	P	13	PASS
13.	Patil Pratik Arjun	OPEN	AB	00	FAIL
14.	Patil Pratik Babaso	OPEN	P	16	PASS
15.	Patil Pruthviraj Kiran	OPEN	P	17	PASS
16.	Patil Rahul Vishnu	OPEN	P	18	PASS
17.	Patil Renuka Sopan	OPEN	P	14	PASS
18.	Patil Ritesh Abaso	OPEN	P	17	PASS
19.	Patil Sanjana Bajirao	OPEN	AB	00	FAIL
20.	Patil Shubham Bhaskar	OPEN	P	14	PASS
21.	Patil Sumit Bajirao	OPEN	P	14	PASS
22.	Sankpal Sanket Ananda	OPEN	P	13	PASS
23.	Sathe Arjun Hariba	SC	AB	00	FAIL
24.	Shivjatak Niranjan Vishvnath	SC	P	16	PASS
25.	Badade Shital Sampat	SC	P	17	PASS
26.	Badade Sushant Sanjay	SC	P	18	PASS
27.	Bhanuse Sakshi Balaso	OBC	P	14	PASS
28.	Chavan Prajakta Vasant	OPEN	P	17	PASS
29.	Chavan Pratiksha Prakash	OPEN	AB	00	FAIL
30.	Chavan Yogesh Haribhau	OPEN	P	14	PASS
31.	Dange Sakib Tejuddin	OBC	P	14	PASS
32.	Desai Saurabh Rajaram	OPEN	P	13	PASS
33.	Desai Ruturaj Mahadev	OPEN	AB	00	FAIL
34.	Desai Sanika Laxman	OPEN	P	16	PASS
35.	Desai Tanaji Pandurang	OPEN	P	17	PASS
36.	Deshmukh Suhas Sanjay	OPEN	P	18	PASS
37.	Devkar Samruddhi Shrikant	OPEN	P	14	PASS
38.	Dhavale Sanika Maruti	OPEN	P	17	PASS
39.	Dukane Shreyas Shivaji	OPEN	AB	00	FAIL
40.	Gaikwad Amruta Mahadev	OPEN	P	14	PASS
41.	Galavi Aparna Mahindra	OPEN	P	14	PASS
42.	Ghode Prasad Sambhaji	OPEN	P	13	PASS
43.	Gurav Aniket Mahadev	OBC	AB	00	FAIL

44.	Jad Akash Shivaji	OPEN	P	16	PASS
45.	Jadhav Prachi Anil	OPEN	P	17	PASS
46.	Jadhav sanika Sampat	OPEN	P	18	PASS
47.	Jadhav Sanika Sarjerao	OPEN	P	14	PASS
48.	Jadhav Sanika Shankar	OPEN	P	17	PASS
49.	Jamdar Rohit Ramchandra	OPEN	AB	00	FAIL
50.	Jangam Kunal Machindranath	OPEN	P	14	PASS
51.	Jangam Pranali Sanjay	OPEN	P	14	PASS
52.	Kadam Banshi Balkrushna	OPEN	P	13	PASS
53.	Kalekar Samiksha Shankar	OPEN	AB	00	FAIL
54.	Kesarkar Pooja Pandurang	OPEN	P	16	PASS
55.	Khabale Rohan Hariba	OPEN	P	17	PASS
56.	Khandekar Diksha Vishwas	OPEN	P	18	PASS
57.	Khilare Prathamesh Shamrao	OPEN	P	14	PASS
58.	Khot Adinath Sanjay	OPEN	P	17	PASS
59.	Khot Arjun Rajaram	OPEN	AB	00	FAIL
60.	Khot Pooja Shivaji	OPEN	P	14	PASS
61.	Khot Prachi Sanjay	OPEN	P	14	PASS
62.	Khot Suraj Ananda	OPEN	P	13	PASS
63.	Kumbhar Abhishek Nathappa	OBC	AB	00	FAIL
64.	Lohar Prathamesh Bapu	NT-B	P	16	PASS
65.	Lohar Prathamesh Vishwas	NT-B	P	17	PASS
66.	Lohar Sakshi Sambhaji	NT-B	P	18	PASS
67.	Malusare Rahul Jaysing	OPEN	P	14	PASS
68.	Mamalekar Prachi Sanjay	OPEN	P	17	PASS
69.	Manglekar Vaibhav Sanjay	OPEN	AB	00	FAIL
70.	Marathe Omkar Bhausaheb	OPEN	P	14	PASS
71.	Maskar Shubham Sakharam	OPEN	P	14	PASS
72.	Maske Sunny Vijay	OPEN	P	13	PASS
73.	Mhole Akshada Ananda	OPEN	AB	00	FAIL
74.	Mhoparekar Sanika Tanaji	OPEN	P	16	PASS
75.	Mhoprekar Aditya Pralhad	OPEN	P	17	PASS
76.	Mulik Prathamesh Shamrao	OPEN	P	18	PASS
77.	Naikawadi Irfan Ismail	OPEN	P	14	PASS
78.	Naikawadi Shantanu Pandurang	OPEN	P	17	PASS
79.	Nalavade Akhil Sandip	OPEN	AB	00	FAIL
80.	Parit Mayuri Maruti	OPEN	P	14	PASS
81.	Patane Kisan Shamrav	OPEN	P	14	PASS
82.	Pathan Ayan Ramjan	OPEN	P	13	PASS
83.	Patil Abhishek Bhimrao	OPEN	AB	00	FAIL
84.	Patil Ankita Pandurang	OPEN	P	16	PASS
85.	Patil Darshan Sanjay	OPEN	P	17	PASS
86.	Patil Diksha Ramesh	OPEN	P	18	PASS
87.	Patil Dipak Bhimrao	OPEN	P	14	PASS
88.	Patil Jyoti Vitthal	OPEN	P	17	PASS
89.	Patil Krushnat Tanaji	OPEN	AB	00	FAIL
90.	Patil Mitali Namdev	OPEN	P	14	PASS
91.	Patil Muktabai Tanaji	OPEN	P	14	PASS
92.	Patil Om Jaysing	OPEN	P	13	PASS
93.	Patil Omkar Uttam	OPEN	AB	00	FAIL
94.	Patil Onkar Pandurang	OPEN	P	16	PASS
95.	Patil Prajakta Dadaso	OPEN	P	17	PASS
96.	Patil Prajakta Sambhaji	OPEN	P	18	PASS

97.	Patil Prathamesh Dinkar	OPEN	P	14	PASS
98.	Patil Prathamesh Prakash	OPEN	P	17	PASS
99.	Patil Pratiksha Sanjay	OPEN	AB	00	FAIL
100.	Patil Rohan Tukaram	OPEN	P	14	PASS
101.	Patil Rupesh Vitthal	OPEN	P	14	PASS
102.	Patil Rutuja Adgonda	OPEN	P	13	PASS
103.	Patil Sahil Dattatray	OPEN	AB	00	FAIL
104.	Patil Sahil Gorakh	OPEN	P	16	PASS
105.	Patil Sakshi Baburao	OPEN	P	17	PASS
106.	Patil Sakshi Nathuram	OPEN	P	18	PASS
107.	Patil Samruddhi Shankar	OPEN	P	14	PASS
108.	Patil Sanika Balu	OPEN	P	17	PASS
109.	Patil Sanika Bapurao	OPEN	AB	00	FAIL
110.	Patil Saniya Arun	OPEN	P	14	PASS
111.	Patil Sanket Ranjendra	OPEN	P	14	PASS
112.	Patil Sanket Suresh	OPEN	P	13	PASS
113.	Patil Shweta Shahaji	OPEN	AB	00	FAIL
114.	Patil Tanuja Suresh	OPEN	P	16	PASS
115.	Pawar Payal Vasant	OPEN	P	17	PASS
116.	Pawar Supriya Yashwant	OPEN	P	18	PASS
117.	Pirjade Mahamadsahil Tajuddin	OBC	P	14	PASS
118.	Pirjade Ruksar Jainolabddin	OBC	P	17	PASS
119.	Pokhalekar Ruturaj Rajaram	OPEN	AB	00	FAIL
120.	Sathe Abhinandan Ashok	OPEN	P	14	PASS
121.	Satpute Siddhesh Raju	OBC	P	14	PASS
122.	Sawant Ekata Sambhaji	OPEN	P	13	PASS
123.	Sawant Prachiti Baburao	OPEN	AB	00	FAIL
124.	Sawant Pranali Gorakh	OPEN	P	16	PASS
125.	Shahanediwan Tayyab Abaji	OBC	P	17	PASS
126.	Shedage Chaitnya Digambar	OPEN	P	18	PASS
127.	Shetake Sushant Jagannath	OPEN	P	14	PASS
128.	Sutar Pankaj Mahadev	OPEN	P	17	PASS
129.	Sutar Sanket Subhash	OPEN	AB	00	FAIL
130.	Teli Vaishnavi Dhondiram	OBC	P	14	PASS
131.	Vanare Anuradha Babaso	OPEN	P	14	PASS
132.	Wagh Savita Ananda	SC	P	13	PASS
133.	Waghmare Kajal Balkrishna	SC	AB	00	FAIL
134.	Warekar Tejas Bapu	OPEN	P	16	PASS
135.	Yamagar Omkar Eknath	NT-C	P	17	PASS
136.	Zade Vishakha Krushna	SC	P	18	PASS
137.	Zole Akash Popat	OPEN	P	14	PASS


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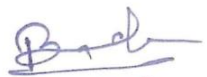
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DEPARTMENT OF BOTANY

UNIT TEST-I

I YEAR-2023-24 (SEMESTER –I)

Botany Paper II: DSC-14 A: Cell biology and Analytical Techniques

DATE:09/09/2023

TIME:11.00am-12.00pm

Mark:20

Time: 1 Hours

=====

1. Which of the following cell organelles is absent in animal cells and present in a plant cell?

- (a) Cell wall
- (b) Cytoplasm
- (c) Vacuoles
- (d) Mitochondria

2. Which of the following cell organelles does not contain DNA?

- (a) Nucleus
- (b) Lysosomes
- (c) Chloroplast
- (d) Mitochondria

3. Which of the following statements is true about the cell wall?

- (a) The cell wall is mainly composed of lipid
- (b) The cell wall is mainly composed of starch
- (c) The cell wall is mainly composed of protein
- (d) The cell wall is mainly composed of cellulose

4. Which of the following statements is true about cell theory?

- (a) The Cell theory does not apply to fungi
- (b) The Cell theory does not apply to virus
- (c) The Cell theory does not apply to algae
- (d) The Cell theory does not apply to microbes

5. _____ is a jellylike substance found floating inside the plasma membrane.

- (a) Cell sap
- (b) Cytoplasm
- (c) Karyoplasm
- (d) Mitochondria

Sol: (b) Cytoplasm.

6. Which of the following cell organelles is called the powerhouse of the cell?

- (a) Nucleus
- (b) Lysosomes
- (c) Chloroplast
- (d) Mitochondria

7. Which of the following cell organelles regulates the entry and exit of molecules to and from the cell?

- (a) Lysosomes
- (b) Golgi bodies
- (c) Cell membrane
- (d) Mitochondria

8. _____ is the study of the cell, its types, structure, functions and its organelles.

- (a) Biology
- (b) Cell Biology
- (c) Microbiology
- (d) Biotechnology

9. Which of the following cell organelles is called a suicidal bag?

- (a) Lysosomes
- (b) Golgi bodies
- (c) Cell membrane
- (d) Mitochondria

Sol: (a) Lysosomes.

10. Which of the following cell organelles is absent in prokaryotic cells?

- (a) Nucleus
- (b) Lysosome
- (c) Endoplasmic Reticulum
- (d) All of the above

11. Which of the following cell organelles is involved in the storage of food, and other nutrients, required for a cell to survive?

- (a) Vacuoles
- (b) Lysosome
- (c) Mitochondria
- (d) Cell membrane

12. Which of the following cell organelles is involved in the breakdown of organic matter?

- (a) Lysosomes
- (b) Cytoplasm
- (c) Golgi bodies
- (d) Mitochondria

13. _____ is involved in the synthesis of phospholipids.

- (a) Mitochondria
- (b) Cytoplasm
- (c) Endoplasmic Reticulum
- (d) Smooth Endoplasmic Reticulum

14. Which of the following cell organelles is present in plant cells and absent in animal cells?

- (a) Nucleus
- (b) Vacuole
- (c) Chloroplast
- (d) Cytoplasm

15. Which of the following statements is true about chromosomes?

- (a) It is present within the nucleus
- (b) It carries genes and helps in inheritance
- (c) It is composed of DNA in the form of Chromatin and protein
- (d) All of the above

16. Which of the following is a single membrane-bound organelle?

- (a) Vacuole
- (b) Golgi Apparatus
- (c) Endoplasmic Reticulum
- (d) All of the above

17. Which of the following cell organelles is present in animal cells and absent in plant cells?

- (a) Nucleus
- (b) Centrosome
- (c) Golgi bodies
- (d) All of the above

18. Which of the following is not a double membrane-bound organelle?

- (a) Chloroplast
- (b) Mitochondria
- (c) Endoplasmic Reticulum
- (d) All of the above

19. Which of the following statements is true about the Golgi bodies?

- (a) It is a sac-like organelle
- (b) It is located near the nucleus
- (c) It helps in transporting the particles throughout the cell.
- (d) All of the above

20. Which of the following statements is true about the Nucleus?

- (a) It is absent in prokaryotes
- (b) It is called the brain of the cell
- (c) It contains DNA and other genetic materials.
- (d) All of the above


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1.	Gaikwad Sanika Dnyandev	OPEN	P	14	PASS
2.	Jadhav Paras sanjay	OPEN	P	13	PASS
3.	Janwadkar Sanika Ramchandra	OPEN	AB	00	FAIL
4.	Kadam Rushikesh Ashok	OPEN	P	16	PASS
5.	Kamble Abhishek Dadu	SC	P	17	PASS
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7.	Khandekar Pranav Mansing	OPEN	P	14	PASS
8.	Khot Shrutika Sunil	OPEN	P	17	PASS
9.	Lavate Harshada Dattatry	OPEN	AB	00	FAIL
10.	Lohar Avishkar Chandrakant	NT-B	P	14	PASS
11.	Patil Komal Tanaji	OPEN	P	14	PASS
12.	Patil Prathamesh Anandrao	OPEN	P	13	PASS
13.	Patil Pratik Arjun	OPEN	AB	00	FAIL
14.	Patil Pratik Babaso	OPEN	P	16	PASS
15.	Patil Pruthviraj Kiran	OPEN	P	17	PASS
16.	Patil Rahul Vishnu	OPEN	P	18	PASS
17.	Patil Renuka Sopan	OPEN	P	14	PASS
18.	Patil Ritesh Abaso	OPEN	P	17	PASS
19.	Patil Sanjana Bajirao	OPEN	AB	00	FAIL
20.	Patil Shubham Bhaskar	OPEN	P	14	PASS
21.	Patil Sumit Bajirao	OPEN	P	14	PASS
22.	Sankpal Sanket Ananda	OPEN	P	13	PASS
23.	Sathe Arjun Hariba	SC	AB	00	FAIL
24.	Shivjatak Niranjan Vishvnath	SC	P	16	PASS
25.	Badade Shital Sampat	SC	P	17	PASS
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30.	Chavan Yogesh Haribhau	OPEN	P	14	PASS
31.	Dange Sakib Tejuddin	OBC	P	14	PASS
32.	Desai Saurabh Rajaram	OPEN	P	13	PASS
33.	Desai Ruturaj Mahadev	OPEN	AB	00	FAIL
34.	Desai Sanika Laxman	OPEN	P	16	PASS
35.	Desai Tanaji Pandurang	OPEN	P	17	PASS
36.	Deshmukh Suhas Sanjay	OPEN	P	18	PASS
37.	Devkar Samruddhi Shrikant	OPEN	P	14	PASS
38.	Dhavale Sanika Maruti	OPEN	P	17	PASS
39.	Dukane Shreyas Shivaji	OPEN	AB	00	FAIL
40.	Gaikwad Amruta Mahadev	OPEN	P	14	PASS
41.	Galavi Aparna Mahindra	OPEN	P	14	PASS
42.	Ghode Prasad Sambhaji	OPEN	P	13	PASS
43.	Gurav Aniket Mahadev	OBC	AB	00	FAIL
44.	Jad Akash Shivaji	OPEN	P	16	PASS

45.	Jadhav Prachi Anil	OPEN	P	17	PASS
46.	Jadhav sanika Sampat	OPEN	P	18	PASS
47.	Jadhav Sanika Sarjerao	OPEN	P	14	PASS
48.	Jadhav Sanika Shankar	OPEN	P	17	PASS
49.	Jamdar Rohit Ramchandra	OPEN	AB	00	FAIL
50.	Jangam Kunal Machindranath	OPEN	P	14	PASS
51.	Jangam Pranali Sanjay	OPEN	P	14	PASS
52.	Kadam Banshi Balkrushna	OPEN	P	13	PASS
53.	Kalekar Samiksha Shankar	OPEN	AB	00	FAIL
54.	Kesarkar Pooja Pandurang	OPEN	P	16	PASS
55.	Khabale Rohan Hariba	OPEN	P	17	PASS
56.	Khandekar Diksha Vishwas	OPEN	P	18	PASS
57.	Khilare Prathamesh Shamrao	OPEN	P	14	PASS
58.	Khot Adinath Sanjay	OPEN	P	17	PASS
59.	Khot Arjun Rajaram	OPEN	AB	00	FAIL
60.	Khot Pooja Shivaji	OPEN	P	14	PASS
61.	Khot Prachi Sanjay	OPEN	P	14	PASS
62.	Khot Suraj Ananda	OPEN	P	13	PASS
63.	Kumbhar Abhishek Nathappa	OBC	AB	00	FAIL
64.	Lohar Prathamesh Bapu	NT-B	P	16	PASS
65.	Lohar Prathamesh Vishwas	NT-B	P	17	PASS
66.	Lohar Sakshi Sambhaji	NT-B	P	18	PASS
67.	Malusare Rahul Jaysing	OPEN	P	14	PASS
68.	Mamalekar Prachi Sanjay	OPEN	P	17	PASS
69.	Manglekar Vaibhav Sanjay	OPEN	AB	00	FAIL
70.	Marathe Omkar Bhausaheb	OPEN	P	14	PASS
71.	Maskar Shubham Sakharam	OPEN	P	14	PASS
72.	Maske Sunny Vijay	OPEN	P	13	PASS
73.	Mhole Akshada Ananda	OPEN	AB	00	FAIL
74.	Mhoparekar Sanika Tanaji	OPEN	P	16	PASS
75.	Mhoprekar Aditya Pralhad	OPEN	P	17	PASS
76.	Mulik Prathamesh Shamrao	OPEN	P	18	PASS
77.	Naikawadi Irfan Ismail	OPEN	P	14	PASS
78.	Naikawadi Shantanu Pandurang	OPEN	P	17	PASS
79.	Nalavade Akhil Sandip	OPEN	AB	00	FAIL
80.	Parit Mayuri Maruti	OPEN	P	14	PASS
81.	Patane Kisan Shamrav	OPEN	P	14	PASS
82.	Pathan Ayan Ramjan	OPEN	P	13	PASS
83.	Patil Abhishek Bhimrao	OPEN	AB	00	FAIL
84.	Patil Ankita Pandurang	OPEN	P	16	PASS
85.	Patil Darshan Sanjay	OPEN	P	17	PASS
86.	Patil Diksha Ramesh	OPEN	P	18	PASS
87.	Patil Dipak Bhimrao	OPEN	P	14	PASS
88.	Patil Jyoti Vitthal	OPEN	P	17	PASS
89.	Patil Krushnat Tanaji	OPEN	AB	00	FAIL
90.	Patil Mitali Namdev	OPEN	P	14	PASS
91.	Patil Muktabai Tanaji	OPEN	P	14	PASS
92.	Patil Om Jaysing	OPEN	P	13	PASS
93.	Patil Omkar Uttam	OPEN	AB	00	FAIL
94.	Patil Onkar Pandurang	OPEN	P	16	PASS
95.	Patil Prajakta Dadaso	OPEN	P	17	PASS
96.	Patil Prajakta Sambhaji	OPEN	P	18	PASS
97.	Patil Prathamesh Dinkar	OPEN	P	14	PASS

98.	Patil Prathamesh Prakash	OPEN	P	17	PASS
99.	Patil Pratiksha Sanjay	OPEN	AB	00	FAIL
100.	Patil Rohan Tukaram	OPEN	P	14	PASS
101.	Patil Rupesh Vitthal	OPEN	P	14	PASS
102.	Patil Rutuja Adgonda	OPEN	P	13	PASS
103.	Patil Sahil Dattatray	OPEN	AB	00	FAIL
104.	Patil Sahil Gorakh	OPEN	P	16	PASS
105.	Patil Sakshi Baburao	OPEN	P	17	PASS
106.	Patil Sakshi Nathuram	OPEN	P	18	PASS
107.	Patil Samruddhi Shankar	OPEN	P	14	PASS
108.	Patil Sanika Balu	OPEN	P	17	PASS
109.	Patil Sanika Bapurao	OPEN	AB	00	FAIL
110.	Patil Saniya Arun	OPEN	P	14	PASS
111.	Patil Sanket Ranjendra	OPEN	P	14	PASS
112.	Patil Sanket Suresh	OPEN	P	13	PASS
113.	Patil Shweta Shahaji	OPEN	AB	00	FAIL
114.	Patil Tanuja Suresh	OPEN	P	16	PASS
115.	Pawar Payal Vasant	OPEN	P	17	PASS
116.	Pawar Supriya Yashwant	OPEN	P	18	PASS
117.	Pirjade Mahamadsahil Tajuddin	OBC	P	14	PASS
118.	Pirjade Ruksar Jainolabddin	OBC	P	17	PASS
119.	Pokhalekar Raturaj Rajaram	OPEN	AB	00	FAIL
120.	Sathe Abhinandan Ashok	OPEN	P	14	PASS
121.	Satpute Siddhesh Raju	OBC	P	14	PASS
122.	Sawant Ekata Sambhaji	OPEN	P	13	PASS
123.	Sawant Prachiti Baburao	OPEN	AB	00	FAIL
124.	Sawant Pranali Gorakh	OPEN	P	16	PASS
125.	Shahanediwan Tayyab Abaji	OBC	P	17	PASS
126.	Shedage Chaitnya Digambar	OPEN	P	18	PASS
127.	Shetake Sushant Jagannath	OPEN	P	14	PASS
128.	Sutar Pankaj Mahadev	OPEN	P	17	PASS
129.	Sutar Sanket Subhash	OPEN	AB	00	FAIL
130.	Teli Vaishnavi Dhondiram	OBC	P	14	PASS
131.	Vanare Anuradha Babaso	OPEN	P	14	PASS
132.	Wagh Savita Ananda	SC	P	13	PASS
133.	Waghmare Kajal Balkrishna	SC	AB	00	FAIL
134.	Warekar Tejas Bapu	OPEN	P	16	PASS
135.	Yamagar Omkar Eknath	NT-C	P	17	PASS
136.	Zade Vishakha Krushna	SC	P	18	PASS
137.	Zole Akash Popat	OPEN	P	14	PASS


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Shirala, Dist. Sangli,



P.P. Swami Vivekanand Sevashram Sanstha, Shirala's

VISHWASRAO NAIK ARTS, COMMERCE & BABA NAIK SCIENCE MAHAVIDYALAYA, SHIRALA

Tal.: Shirala, Dist.: Sangli, Maharashtra - 415408



NAAC GRADE - 'B'

Junior College Code : 15
Junior College No. J-22-09-001
UDISE No.: 27350713220

(Affiliated to Shivaji University, Kolhapur.)

(JUNIOR/SENIOR)

EST : JUN-1970

Principal : Dr. R. B. Bansode
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Out Ward No. V.N.M. /

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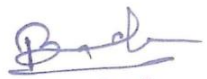
Date : / / 20



STUDENTS UNIT TEST NOTICE

All the students from B.Sc. I year informed that Unit Test-I (Semester-I) will be held on 12/02/2023 from 11.00.am to 12.00pm.

All the student are instructed to remain present for the scheduled test.


Principal,
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Shirala, Dist. Sangli,

Shivaji University Kolhapur
Vishwasrao Naik Arts, Commerce and Baba Naik
Science Mahavidyalaya Shirala.

Tal. Shirala, Dist. Sangli-415408

DEPARTMENT OF BOTANY

UNIT TEST-III

I YEAR -2023-24 (SEMESTER –II)

**Botany Paper III: DSC-13B: Mycology, Phytopathology and Mushroom
cultivation**

DATE:16/02/2023

TIME:11.00am-12.00pm.

Mark:20

Time: 1 Hours

=====

1. The most used methods for exclusion of the pathogens are..?
 - (a). Chemical measures.
 - (b). Regulatory measures.
 - (c). Biological measures.
 - (d). Mechanical measures.
2. The methods of control based on the principles of directly attacking the pathogens is/are..?
 - (a). Avoiding the contact between the pathogen and host.
 - (b). Plant and field sanitation for reduction of inoculum.
 - (c). Destruction of parasite if it superficially present.
 - (d). All of the above.
3. Avoiding the contact between the pathogen and host wouldn't include..?
 - (a). Quarantine regulations.
 - (b). Notification of plant disease.
 - (c). Eradication.
 - (d). Certification.
4. Quarantine regulations are enforced by..?
 - (a). A country.
 - (b). A state.
 - (c). A state or country through legislation.
 - (d). None of any option.
5. The quarantine regulations anticipate...?
 - (a). That the disease or pathogen is not present in the country.
 - (b). That the disease or pathogen may be present in the country.
 - (c). Both a and b.
 - (d). None of the above.
6. Certification is the method of management of pathogen..?
 - (a). Eradication.

- (b). Field sanitation.
 - (c). Protective application of synthetic toxic chemicals.
 - (d). Avoiding the contact between the pathogen and the host.
7. Which is true about certification?
- 1. As far as possible only seeds certified as pathogen free are allowed to enter the country.
 - 2. Other planting materials can be allowed to enter the country without certification.
 - 3. Quarantine is needed for the seeds from foreign countries while it is certified.
 - 4. Quarantine is not needed for the seeds from foreign countries while it is certified.
 - 5. Is meant to prevent existing pathogens.
 - 6. Isn't meant to prevent existing pathogens.
- (a). 2, 4 and 5 are true.
 - (b). 1, 3 and 5 are true.
 - (c). 1, 2, 3 and 6 are true.
 - (d). All are true.
8. will require education of the farmers?
- (a). Quarantine.
 - (b). Prevention and sale of plant disease.
 - (c). Certification.
 - (d). Notification of the plant disease.
9. Theoretically is the most effective approach to keep pathogens away from the area?
- (a). Eradication.
 - (b). Field sanitation.
 - (c). Exclusion.
 - (d). All of the above.
10. SAR stands for...?
- (a). Systemic Acquired Resistant.
 - (b). Sequence Acquired Resistant.
 - (c). System Acquired Resistance.
 - (d). Sequence Acquired Resistance.
11. SAR is approached through..?
- (a). Biological means.
 - (b). Physical means.
 - (c). Both a and b.
 - (d). Chemical and transgenic means.
12. Which is not a type of eradication?
- (a). Eradication of seed-borne inoculum.
 - (b). Eradication of alternative hosts.
 - (c). Eradication of diseased plant or parts.
 - (d). All are true.
13. The eradication methods of sieving, steeping in brine are..?
- (a). Biological method.
 - (b). Physical method.
 - (c). Mechanical method.
 - (d). Chemical method.
14. The internally seed-borne infection can be destroyed by..?
- (a). Hot water treatment.
 - (b). Solar energy treatment.
 - (c). Use of selected antibiotics and systemic fungicides.
 - (d). All of the above.
15. The plant and field sanitation for reduction of inoculum anticipates..?
- (a). Pathogen has entered the area and has established itself in the fields.
 - (b). Pathogen has yet to enter the area and has to establish itself in the fields.
 - (c). Pathogen has not entered the area and has not established itself in the fields.
 - (d). None of the above.

16. The eradication of plant disease means..?
- (a). Plant hygiene envisages the removal of diseased parts.
 - (b). Removal of entire plants from the vicinity of the healthy plants.
 - (c). Both a and b.
 - (d). None of the above.
17. The eradication of alternative hosts is done..?
- (a). To prevent the perpetuation of the host.
 - (b). To prevent the perpetuation of the pathogen.
 - (c). To prevent the spread of the disease.
 - (d). Both b and c.
18. The field sanitation practice may include..?
- (a). Hot weather deep ploughing.
 - (b). Use of chemicals to disinfect the fallen plant debris.
 - (c). Rotation, flooding, organic amendments etc.
 - (d). All of the above.
19. The objective of field sanitation is..?
- (a). To completely destroy the source of infection present in the field.
 - (b). Or partially destroy the source of infection present in the field.
 - (c). Both a and b.
 - (d). None of the above.
20. The protective application are undertaken with the assumption that..?
- (a). The entry of the pathogen can be avoided.
 - (b). The entry of the pathogen can't be avoided and is likely to appear through wind borne primary inoculum from a nearby source.
 - (c). The entry of the pathogen can't be avoided and is likely to appear through wind borne primary or secondary inoculum from a nearby source.
 - (d). None of the above.



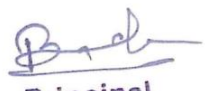
**Principal,
Vishwasrao Naik Arts, Com. &
Baba Naik Science Mahavidyalaya
Shirala, Dist. Sangli,**

INTERNAL TEST RESULT

Sr. No.	Name of the Students	Category	Present/Absent	Mark out of 20	Pass/Fail
1.	Gaikwad Sanika Dnyandev	OPEN	P	14	PASS
2.	Jadhav Paras sanjay	OPEN	P	13	PASS
3.	Janwadkar Sanika Ramchandra	OPEN	AB	00	FAIL
4.	Kadam Rushikesh Ashok	OPEN	P	16	PASS
5.	Kamble Abhishek Dadu	SC	P	17	PASS
6.	Khabale Prathamesh shivaji	OPEN	P	18	PASS
7.	Khandekar Pranav Mansing	OPEN	P	14	PASS
8.	Khot Shrutika Sunil	OPEN	P	17	PASS
9.	Lavate Harshada Dattatry	OPEN	AB	00	FAIL
10.	Lohar Avishkar Chandrakant	NT-B	P	14	PASS
11.	Patil Komal Tanaji	OPEN	P	14	PASS
12.	Patil Prathamesh Anandrao	OPEN	P	13	PASS
13.	Patil Pratik Arjun	OPEN	AB	00	FAIL
14.	Patil Pratik Babaso	OPEN	P	16	PASS
15.	Patil Pruthviraj Kiran	OPEN	P	17	PASS
16.	Patil Rahul Vishnu	OPEN	P	18	PASS
17.	Patil Renuka Sopan	OPEN	P	14	PASS
18.	Patil Ritesh Abaso	OPEN	P	17	PASS
19.	Patil Sanjana Bajirao	OPEN	AB	00	FAIL
20.	Patil Shubham Bhaskar	OPEN	P	14	PASS
21.	Patil Sumit Bajirao	OPEN	P	14	PASS
22.	Sankpal Sanket Ananda	OPEN	P	13	PASS
23.	Sathe Arjun Hariba	SC	AB	00	FAIL
24.	Shivjatak Niranjan Vishvnath	SC	P	16	PASS
25.	Badade Shital Sampat	SC	P	17	PASS
26.	Badade Sushant Sanjay	SC	P	18	PASS
27.	Bhanuse Sakshi Balaso	OBC	P	14	PASS
28.	Chavan Prajakta Vasant	OPEN	P	17	PASS
29.	Chavan Pratiksha Prakash	OPEN	AB	00	FAIL
30.	Chavan Yogesh Haribhau	OPEN	P	14	PASS
31.	Dange Sakib Tejuddin	OBC	P	14	PASS
32.	Desai Saurabh Rajaram	OPEN	P	13	PASS
33.	Desai Ruturaj Mahadev	OPEN	AB	00	FAIL
34.	Desai Sanika Laxman	OPEN	P	16	PASS
35.	Desai Tanaji Pandurang	OPEN	P	17	PASS
36.	Deshmukh Suhas Sanjay	OPEN	P	18	PASS
37.	Devkar Samruddhi Shrikant	OPEN	P	14	PASS
38.	Dhavale Sanika Maruti	OPEN	P	17	PASS
39.	Dukane Shreyas Shivaji	OPEN	AB	00	FAIL
40.	Gaikwad Amruta Mahadev	OPEN	P	14	PASS
41.	Galavi Aparna Mahindra	OPEN	P	14	PASS
42.	Ghode Prasad Sambhaji	OPEN	P	13	PASS
43.	Gurav Aniket Mahadev	OBC	AB	00	FAIL
44.	Jad Akash Shivaji	OPEN	P	16	PASS
45.	Jadhav Prachi Anil	OPEN	P	17	PASS
46.	Jadhav sanika Sampat	OPEN	P	18	PASS
47.	Jadhav Sanika Sarjerao	OPEN	P	14	PASS

48.	Jadhav Sanika Shankar	OPEN	P	17	PASS
49.	Jamdar Rohit Ramchandra	OPEN	AB	00	FAIL
50.	Jangam Kunal Machindranath	OPEN	P	14	PASS
51.	Jangam Pranali Sanjay	OPEN	P	14	PASS
52.	Kadam Banshi Balkrushna	OPEN	P	13	PASS
53.	Kalekar Samiksha Shankar	OPEN	AB	00	FAIL
54.	Kesarkar Pooja Pandurang	OPEN	P	16	PASS
55.	Khabale Rohan Hariba	OPEN	P	17	PASS
56.	Khandekar Diksha Vishwas	OPEN	P	18	PASS
57.	Khilare Prathamesh Shamrao	OPEN	P	14	PASS
58.	Khot Adinath Sanjay	OPEN	P	17	PASS
59.	Khot Arjun Rajaram	OPEN	AB	00	FAIL
60.	Khot Pooja Shivaji	OPEN	P	14	PASS
61.	Khot Prachi Sanjay	OPEN	P	14	PASS
62.	Khot Suraj Ananda	OPEN	P	13	PASS
63.	Kumbhar Abhishek Nathappa	OBC	AB	00	FAIL
64.	Lohar Prathamesh Bapu	NT-B	P	16	PASS
65.	Lohar Prathamesh Vishwas	NT-B	P	17	PASS
66.	Lohar Sakshi Sambhaji	NT-B	P	18	PASS
67.	Malusare Rahul Jaysing	OPEN	P	14	PASS
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69.	Manglekar Vaibhav Sanjay	OPEN	AB	00	FAIL
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75.	Mhoprekar Aditya Pralhad	OPEN	P	17	PASS
76.	Mulik Prathamesh Shamrao	OPEN	P	18	PASS
77.	Naikawadi Irfan Ismail	OPEN	P	14	PASS
78.	Naikawadi Shantanu Pandurang	OPEN	P	17	PASS
79.	Nalavade Akhil Sandip	OPEN	AB	00	FAIL
80.	Parit Mayuri Maruti	OPEN	P	14	PASS
81.	Patane Kisan Shamrav	OPEN	P	14	PASS
82.	Pathan Ayan Ramjan	OPEN	P	13	PASS
83.	Patil Abhishek Bhimrao	OPEN	AB	00	FAIL
84.	Patil Ankita Pandurang	OPEN	P	16	PASS
85.	Patil Darshan Sanjay	OPEN	P	17	PASS
86.	Patil Diksha Ramesh	OPEN	P	18	PASS
87.	Patil Dipak Bhimrao	OPEN	P	14	PASS
88.	Patil Jyoti Vitthal	OPEN	P	17	PASS
89.	Patil Krushnat Tanaji	OPEN	AB	00	FAIL
90.	Patil Mitali Namdev	OPEN	P	14	PASS
91.	Patil Muktabai Tanaji	OPEN	P	14	PASS
92.	Patil Om Jaysing	OPEN	P	13	PASS
93.	Patil Omkar Uttam	OPEN	AB	00	FAIL
94.	Patil Onkar Pandurang	OPEN	P	16	PASS
95.	Patil Prajakta Dadaso	OPEN	P	17	PASS
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97.	Patil Prathamesh Dinkar	OPEN	P	14	PASS
98.	Patil Prathamesh Prakash	OPEN	P	17	PASS
99.	Patil Pratiksha Sanjay	OPEN	AB	00	FAIL
100.	Patil Rohan Tukaram	OPEN	P	14	PASS

101.	Patil Rupesh Vitthal	OPEN	P	14	PASS
102.	Patil Rutuja Adgonda	OPEN	P	13	PASS
103.	Patil Sahil Dattatray	OPEN	AB	00	FAIL
104.	Patil Sahil Gorakh	OPEN	P	16	PASS
105.	Patil Sakshi Baburao	OPEN	P	17	PASS
106.	Patil Sakshi Nathuram	OPEN	P	18	PASS
107.	Patil Samruddhi Shankar	OPEN	P	14	PASS
108.	Patil Sanika Balu	OPEN	P	17	PASS
109.	Patil Sanika Bapurao	OPEN	AB	00	FAIL
110.	Patil Saniya Arun	OPEN	P	14	PASS
111.	Patil Sanket Ranjendra	OPEN	P	14	PASS
112.	Patil Sanket Suresh	OPEN	P	13	PASS
113.	Patil Shweta Shahaji	OPEN	AB	00	FAIL
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115.	Pawar Payal Vasant	OPEN	P	17	PASS
116.	Pawar Supriya Yashwant	OPEN	P	18	PASS
117.	Pirjade Mahamadsahil Tajuddin	OBC	P	14	PASS
118.	Pirjade Ruksar Jainolabddin	OBC	P	17	PASS
119.	Pokhalekar Raturaj Rajaram	OPEN	AB	00	FAIL
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131.	Vanare Anuradha Babaso	OPEN	P	14	PASS
132.	Wagh Savita Ananda	SC	P	13	PASS
133.	Waghmare Kajal Balkrishna	SC	AB	00	FAIL
134.	Warekar Tejas Bapu	OPEN	P	16	PASS
135.	Yamagar Omkar Eknath	NT-C	P	17	PASS
136.	Zade Vishakha Krushna	SC	P	18	PASS
137.	Zole Akash Popat	OPEN	P	14	PASS


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Junior College No. J-22-09-001
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Principal : Dr. R. B. Bansode
M.A., M.Phil., Ph.D.

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Out Ward No. V.N.M. /

/

Date :

/

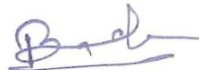
/ 20



STUDENTS UNIT TEST NOTICE

All the students from B.Sc. I year informed that Unit Test-III (Semester-II) will be held on 12/02/2024 from 11.00.am to 12.00pm.

All the student are instructed to remain present for the scheduled test.


Principal,
Vishwasrao Naik Arts, Com. &
Baba Naik Science Mahavidyalaya
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Science Mahavidyalaya Shirala.

Tal. Shirala, Dist. Sangli-415408

DEPARTMENT OF BOTANY

UNIT TEST-III

I YEAR -2023-24 (SEMESTER –II)

**Botany Paper IV: DSC-14B: Archegoniate (Bryophytes, Pteridophytes
and Gymnosperms)**

DATE:17/02/2024

TIME:11.00am-12.00pm

Mark:20

Time: 1 Hours

=====

1. Which of the plant groups needs both land and water to complete their life cycle?

Tracheophyta

Pteridophyta

Thallophyta

Bryophyta

2. A plant that has seeds but no flowers and fruits?

Bryophytes

Gymnosperms

Mosses

Pteridophytes

3. Most primitive vascular plants?

Mosses

Cycads

Kelps

Ferns

4. Plants that possess spores and embryo but lack vascular tissues and seeds?

Rhodophyta

Bryophyta

Pteridophyta

Phaeophyta

5. Which one is not an exception in angiosperms?

Double fertilization

Secondary growth

Presence of vessels

Autotrophic nutrition

6. Pteridophytes differ from mosses in

Independent gametophyte

Dependent gametophyte

Flagellate antherozoids

Independent and dominant sporophyte

7. Angiosperms are the dominant flora because of

Domestication by man

Power of adapting in diverse habitats

Self-pollination property

Property of producing a large number of seeds

8. Plants reproducing by spores are grouped under

Bryophytes

Sporophytes

Cryptogams

Thallophytes

9. Plants having vascular tissue without seeds

Angiosperm

Pteridophytes

Bryophytes

Gymnosperms

10. The plant group that possesses the largest ovule, largest gametes, and largest tree

Angiosperms

Gymnosperms

Pteridophytes

Bryophytes

11. Zygotic meiosis is the characteristic of

Fucus

Funaria

Marchantia

Chlamydomonas

12. Pick the mismatched pair

Cycas – Dioecious

Equisetum – Homosporous

Salvinia – Heterosporous

Pinus – Dioecious

13. A colonial alga is

Volvox

Chlorella

Ulothrix

Spirogyra

14. Double fertilization is the characteristic of

Algae

Gymnosperms

Fungi

Angiosperms

15. Conifers can tolerate extreme environments because of

Presence of vessels

Thick cuticle

Superficial stomata

Broad hardy leaves

16. First plants to inhabit the land

Angiosperms

Bryophytes
Gymnosperms
Pteridophytes

17. Agar is commercially obtained from

Blue-green algae
Red algae
Brown algae
Green algae

18. Which one differs from Spirogyra based on its nucleus?

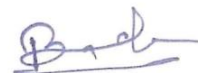
Azygospore
Zygospore
Akinete
Aplanospore

19. The cell wall of Spirogyra contains

Cellulose
Chitin
Lignin
Suberin

20. Which of the following completely lacks cell wall?

Blue-green algae
Saccharomyces
Sea-fan
Cyanobacteria



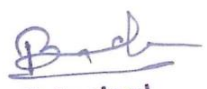
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INTERNAL TEST RESULT

Sr. No.	Name of the Students	Category	Present/Absent	Mark out of 20	Pass/Fail
1.	Gaikwad Sanika Dnyandev	OPEN	P	14	PASS
2.	Jadhav Paras sanjay	OPEN	P	13	PASS
3.	Janwadkar Sanika Ramchandra	OPEN	AB	00	FAIL
4.	Kadam Rushikesh Ashok	OPEN	P	16	PASS
5.	Kamble Abhishek Dadu	SC	P	17	PASS
6.	Khabale Prathamesh shivaji	OPEN	P	18	PASS
7.	Khandekar Pranav Mansing	OPEN	P	14	PASS
8.	Khot Shrutika Sunil	OPEN	P	17	PASS
9.	Lavate Harshada Dattatry	OPEN	AB	00	FAIL
10.	Lohar Avishkar Chandrakant	NT-B	P	14	PASS
11.	Patil Komal Tanaji	OPEN	P	14	PASS
12.	Patil Prathamesh Anandrao	OPEN	P	13	PASS
13.	Patil Pratik Arjun	OPEN	AB	00	FAIL
14.	Patil Pratik Babaso	OPEN	P	16	PASS
15.	Patil Pruthviraj Kiran	OPEN	P	17	PASS
16.	Patil Rahul Vishnu	OPEN	P	18	PASS
17.	Patil Renuka Sopan	OPEN	P	14	PASS
18.	Patil Ritesh Abaso	OPEN	P	17	PASS
19.	Patil Sanjana Bajirao	OPEN	AB	00	FAIL
20.	Patil Shubham Bhaskar	OPEN	P	14	PASS
21.	Patil Sumit Bajirao	OPEN	P	14	PASS
22.	Sankpal Sanket Ananda	OPEN	P	13	PASS
23.	Sathe Arjun Hariba	SC	AB	00	FAIL
24.	Shivjatak Niranjan Vishvnath	SC	P	16	PASS
25.	Badade Shital Sampat	SC	P	17	PASS
26.	Badade Sushant Sanjay	SC	P	18	PASS
27.	Bhanuse Sakshi Balaso	OBC	P	14	PASS
28.	Chavan Prajakta Vasant	OPEN	P	17	PASS
29.	Chavan Pratiksha Prakash	OPEN	AB	00	FAIL
30.	Chavan Yogesh Haribhau	OPEN	P	14	PASS
31.	Dange Sakib Tejuddin	OBC	P	14	PASS
32.	Desai Saurabh Rajaram	OPEN	P	13	PASS
33.	Desai Raturaj Mahadev	OPEN	AB	00	FAIL
34.	Desai Sanika Laxman	OPEN	P	16	PASS
35.	Desai Tanaji Pandurang	OPEN	P	17	PASS
36.	Deshmukh Suhas Sanjay	OPEN	P	18	PASS
37.	Devkar Samruddhi Shrikant	OPEN	P	14	PASS
38.	Dhavale Sanika Maruti	OPEN	P	17	PASS
39.	Dukane Shreyas Shivaji	OPEN	AB	00	FAIL
40.	Gaikwad Amruta Mahadev	OPEN	P	14	PASS
41.	Galavi Aparna Mahindra	OPEN	P	14	PASS
42.	Ghode Prasad Sambhaji	OPEN	P	13	PASS
43.	Gurav Aniket Mahadev	OBC	AB	00	FAIL
44.	Jad Akash Shivaji	OPEN	P	16	PASS
45.	Jadhav Prachi Anil	OPEN	P	17	PASS
46.	Jadhav sanika Sampat	OPEN	P	18	PASS

47.	Jadhav Sanika Sarjerao	OPEN	P	14	PASS
48.	Jadhav Sanika Shankar	OPEN	P	17	PASS
49.	Jamdar Rohit Ramchandra	OPEN	AB	00	FAIL
50.	Jangam Kunal Machindranath	OPEN	P	14	PASS
51.	Jangam Pranali Sanjay	OPEN	P	14	PASS
52.	Kadam Banshi Balkrushna	OPEN	P	13	PASS
53.	Kalekar Samiksha Shankar	OPEN	AB	00	FAIL
54.	Kesarkar Pooja Pandurang	OPEN	P	16	PASS
55.	Khabale Rohan Hariba	OPEN	P	17	PASS
56.	Khandekar Diksha Vishwas	OPEN	P	18	PASS
57.	Khilare Prathamesh Shamrao	OPEN	P	14	PASS
58.	Khot Adinath Sanjay	OPEN	P	17	PASS
59.	Khot Arjun Rajaram	OPEN	AB	00	FAIL
60.	Khot Pooja Shivaji	OPEN	P	14	PASS
61.	Khot Prachi Sanjay	OPEN	P	14	PASS
62.	Khot Suraj Ananda	OPEN	P	13	PASS
63.	Kumbhar Abhishek Nathappa	OBC	AB	00	FAIL
64.	Lohar Prathamesh Bapu	NT-B	P	16	PASS
65.	Lohar Prathamesh Vishwas	NT-B	P	17	PASS
66.	Lohar Sakshi Sambhaji	NT-B	P	18	PASS
67.	Malusare Rahul Jaysing	OPEN	P	14	PASS
68.	Mamalekar Prachi Sanjay	OPEN	P	17	PASS
69.	Manglekar Vaibhav Sanjay	OPEN	AB	00	FAIL
70.	Marathe Omkar Bhausaheb	OPEN	P	14	PASS
71.	Maskar Shubham Sakharam	OPEN	P	14	PASS
72.	Maske Sunny Vijay	OPEN	P	13	PASS
73.	Mhole Akshada Ananda	OPEN	AB	00	FAIL
74.	Mhoparekar Sanika Tanaji	OPEN	P	16	PASS
75.	Mhoprekar Aditya Pralhad	OPEN	P	17	PASS
76.	Mulik Prathamesh Shamrao	OPEN	P	18	PASS
77.	Naikawadi Irfan Ismail	OPEN	P	14	PASS
78.	Naikawadi Shantanu Pandurang	OPEN	P	17	PASS
79.	Nalavade Akhil Sandip	OPEN	AB	00	FAIL
80.	Parit Mayuri Maruti	OPEN	P	14	PASS
81.	Patane Kisan Shamrav	OPEN	P	14	PASS
82.	Pathan Ayan Ramjan	OPEN	P	13	PASS
83.	Patil Abhishek Bhimrao	OPEN	AB	00	FAIL
84.	Patil Ankita Pandurang	OPEN	P	16	PASS
85.	Patil Darshan Sanjay	OPEN	P	17	PASS
86.	Patil Diksha Ramesh	OPEN	P	18	PASS
87.	Patil Dipak Bhimrao	OPEN	P	14	PASS
88.	Patil Jyoti Vitthal	OPEN	P	17	PASS
89.	Patil Krushnat Tanaji	OPEN	AB	00	FAIL
90.	Patil Mitali Namdev	OPEN	P	14	PASS
91.	Patil Muktabai Tanaji	OPEN	P	14	PASS
92.	Patil Om Jaysing	OPEN	P	13	PASS
93.	Patil Omkar Uttam	OPEN	AB	00	FAIL
94.	Patil Onkar Pandurang	OPEN	P	16	PASS
95.	Patil Prajakta Dadaso	OPEN	P	17	PASS
96.	Patil Prajakta Sambhaji	OPEN	P	18	PASS
97.	Patil Prathamesh Dinkar	OPEN	P	14	PASS
98.	Patil Prathamesh Prakash	OPEN	P	17	PASS
99.	Patil Pratiksha Sanjay	OPEN	AB	00	FAIL

100.	Patil Rohan Tukaram	OPEN	P	14	PASS
101.	Patil Rupesh Vitthal	OPEN	P	14	PASS
102.	Patil Rutuja Adgonda	OPEN	P	13	PASS
103.	Patil Sahil Dattatray	OPEN	AB	00	FAIL
104.	Patil Sahil Gorakh	OPEN	P	16	PASS
105.	Patil Sakshi Baburao	OPEN	P	17	PASS
106.	Patil Sakshi Nathuram	OPEN	P	18	PASS
107.	Patil Samruddhi Shankar	OPEN	P	14	PASS
108.	Patil Sanika Balu	OPEN	P	17	PASS
109.	Patil Sanika Bapurao	OPEN	AB	00	FAIL
110.	Patil Saniya Arun	OPEN	P	14	PASS
111.	Patil Sanket Ranjendra	OPEN	P	14	PASS
112.	Patil Sanket Suresh	OPEN	P	13	PASS
113.	Patil Shweta Shahaji	OPEN	AB	00	FAIL
114.	Patil Tanuja Suresh	OPEN	P	16	PASS
115.	Pawar Payal Vasant	OPEN	P	17	PASS
116.	Pawar Supriya Yashwant	OPEN	P	18	PASS
117.	Pirjade Mahamadsahil Tajuddin	OBC	P	14	PASS
118.	Pirjade Ruksar Jainolabddin	OBC	P	17	PASS
119.	Pokhalekar Raturaj Rajaram	OPEN	AB	00	FAIL
120.	Sathe Abhinandan Ashok	OPEN	P	14	PASS
121.	Satpute Siddhesh Raju	OBC	P	14	PASS
122.	Sawant Ekata Sambhaji	OPEN	P	13	PASS
123.	Sawant Prachiti Baburao	OPEN	AB	00	FAIL
124.	Sawant Pranali Gorakh	OPEN	P	16	PASS
125.	Shahenediwan Tayyab Abaji	OBC	P	17	PASS
126.	Shedage Chaitnya Digambar	OPEN	P	18	PASS
127.	Shetake Sushant Jagannath	OPEN	P	14	PASS
128.	Sutar Pankaj Mahadev	OPEN	P	17	PASS
129.	Sutar Sanket Subhash	OPEN	AB	00	FAIL
130.	Teli Vaishnavi Dhondiram	OBC	P	14	PASS
131.	Vanare Anuradha Babaso	OPEN	P	14	PASS
132.	Wagh Savita Ananda	SC	P	13	PASS
133.	Waghmare Kajal Balkrishna	SC	AB	00	FAIL
134.	Warekar Tejas Bapu	OPEN	P	16	PASS
135.	Yamagar Omkar Eknath	NT-C	P	17	PASS
136.	Zade Vishakha Krushna	SC	P	18	PASS
137.	Zole Akash Popat	OPEN	P	14	PASS


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P.P. Swami Vivekanand Sevashram Sanstha, Shirala's

VISHWASRAO NAIK ARTS, COMMERCE & BABA NAIK SCIENCE MAHAVIDYALAYA, SHIRALA

Tal.: Shirala, Dist.: Sangli, Maharashtra - 415408



NAAC GRADE - 'B'

(Affiliated to Shivaji University, Kolhapur.)

EST : JUN-1970

Junior College Code : 15
Junior College No. J-22-09-001
UDISE No.: 27350713220

(JUNIOR/SENIOR)

Principal : Dr. R. B. Bansode
M.A., M.Phil., Ph.D.

(02345) 272107 vishwasraonaik@rediffmail.com www.vnbnmshirala.org

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/

Date : / / 20



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All the students from B.Sc. II year informed that Unit Test-II (Semester-III) will be held on 14/11/2023 from 11.00.am to 12.00pm.

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Science Mahavidyalaya Shirala.

Tal. Shirala, Dist. Sangli-415408

DEPARTMENT OF BOTANY

UNIT TEST-II

II YEAR-2023-24 (SEMESTER-III)

Botany Paper V: DSC C13: PLANT SYSTEMATICS AND ANATOMY

DATE:17/11/2023

TIME:11.00am-12.00pm

Mark:20

Time: 1 Hours

=====

1. The level of taxonomic study related to biological aspects of taxa, inclusive of intraspecific populations, speciation, evolutionary trends and rates is

- (a) theta taxonomy
- (b) alpha taxonomy
- (c) beta taxonomy
- (d) gamma taxonomy

Answer: (d)

2. The process wherein the labellum in Orchidaceae surfaces at the anterior side via the twisting of the ovary through 180 degree

- (a) Articulation
- (b) Adnation
- (c) Attenuation
- (d) Resupination

Answer: (d)

3. The organization of taxonomic information in logical classification is known as

- (a) Phenetic
- (b) Systematics
- (c) Dendogram
- (d) Phylogenetic

Answer: (b)

4. One of these is not a plant fossil

- (a) Rhynia
- (b) Lepidocarpon
- (c) Lepidodendron
- (d) Archaeopteryx

Answer: (d)

5. The primary advantage of Bentham and Hookers classification is

- (a) It is a system whose basis is on evolutionary concepts
- (b) It is a natural system of classification of all plant groups
- (c) Deemed to be the phylogenetic aspect as well
- (d) The taxa description is based on the actual examination of the specimens

Answer: (d)

6. A taxonomy pertains to

- (a) Chemotaxonomy
- (b) Phylogeny
- (c) Classical taxonomy
- (d) Experimental taxonomy

Answer: (c)

7. To comprehend general plant relationships, this is one of the best methods

- (a) Experimental Taxonomy
- (b) Numerical Taxonomy
- (c) Cytotaxonomy
- (d) Chemotaxonomy

Answer: (d)

8. The condition of Polyadelphous can be found in

- (a) Rutaceae
- (b) Leguminosae
- (c) Compositae
- (d) Liliaceae

9. Linnaeus is credited with the following

- (a) Law of Limiting factor
- (b) Binomial nomenclature
- (c) Concept of inheritance
- (d) Theory of heredity

10. Where in epiphytes are velamen cells located?

Below the endodermis

Below the epidermis

Just outside the cortex

Just outside the exodermis

11. Intercalary meristem results in

Primary growth

Secondary growth

Apical growth

None

12. The age of the tree can be determined by

Measuring its diameter

Counting the number of annual rings

Counting the number of leaves

Finding out the number of branches

13. Which meristem helps in increasing the girth of the plant?

Primary meristem

Apical meristem

Intercalary meristem

Lateral meristem

14. Fibres associated with phloem

Wood fibres

Bast fibres

Hard fibres

Surface fibres

15. In angiosperms, xylem is made up of

Tracheids and fibres

Tracheids and vessels

Vessels and fibres

All of the above

16. Which of the following has a perforated cell wall?

Vessel

Fibre

Tracheid

Sclereid

17. How many radial vascular bundles are found in dicot roots?

Four

Six

Two

One

18. Bicollateral bundles are found in the stem of

Pumpkin

Sunflower

Dracaena

Gram

19. Vascular bundles in dicot stem are

Closed, conjoint, endarch

Open, conjoint, endarch

Closed, conjoint, exarch

Open, conjoint, exarch

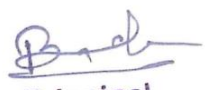
20. Wound healing in plants is initiated by

Apical meristem

Lateral meristem

Secondary meristem

Intercalary meristem


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INTERNAL TEST RESULT

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2.	Chougule Priti Namdev	P	13	PASS
3.	Dashawant Sushreya Sanjay	AB	00	FAIL
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5.	Dhadam kalyani Suresh	P	17	PASS
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13.	Mutal Arati Ramchandra	AB	00	FAIL
14.	Naikawadi Jayvanta Maruti	P	16	PASS
15.	Naikawadi Naziya Karim	P	17	PASS
16.	Nikam Abhishek Ajay	P	18	PASS
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19.	Patil Rajashri Babaso	AB	00	FAIL
20.	Patil Srushti Shashikant	P	14	PASS
21.	Patil Vinayak Shivaji	P	14	PASS
22.	Patil Vishakha Baburao	P	13	PASS
23.	Pawar Anuja Maruti	AB	00	FAIL
24.	Shedage Jayshree Digambar	P	16	PASS
25.	Shewale Sanika Ananda	P	17	PASS
26.	Shinde Kajal Laxman	P	18	PASS
27.	Sondulakar Rohan Jaysing	P	14	PASS
28.	Sosale Sanika Sambhaji	P	17	PASS
29.	Sutar Neha Ramesh	AB	00	FAIL
30.	Undalakar Vivek Ashok	P	14	PASS
31.	Wagh Sayali Yuvraj	P	14	PASS
32.	Waghamare Ragini Dipak	P	13	PASS
33.	Patil Sanika Ramchandra	AB	00	FAIL
34.	Mulla Muskan Salim	P	16	PASS
35.	Jadhav Sambhaji Shivaji	P	17	PASS
36.	Kumbhar Siddhesh Arun	P	18	PASS



P.P. Swami Vivekanand Sevashram Sanstha, Shirala's

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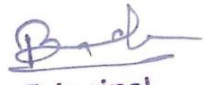
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Tal. Shirala, Dist. Sangli-415408

DEPARTMENT OF BOTANY

UNIT TEST-II

B.Sc. II YEAR 2023-24 (SEMESTER-III)

**Botany Paper VI: DSC C14: GENETICS AND MOLECULAR
BIOLOGY**

DATE:18/11/2023

TIME:11.00am-12.00pm

Mark:20

Time: 1 Hours

=====

1. What is Molecular Biology?

- a) Deals with the physical structures and processes of biological events
- b) Deals with the chemical structures and processes of chemical events
- c) Deals with the physical structures and processes of chemical events
- d) Deals with the chemical structures and processes of biological events

2. Which of the following is DNA made up of?

- a) Adenine – Guanine
- b) Cytosine – Thymine
- c) Both Adenine – Guanine & Cytosine – Thymine
- d) None of the mentioned

3. Who is known as the father of Molecular biology?

- a) Linus Carl Pauling
- b) James Watson
- c) Francis H. Crick
- d) Mahlon B. Hoagland

4. Proteins are made up of which of the following?

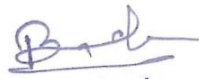
- a) Nucleic acids
- b) Amino acids
- c) Nuclease
- d) None of the mentioned

5. Which of the following is RNA made up of?

- a) Adenine, Cytosine, Guanine, and Uracil
- b) Adenine, Guanine, Cytosine, and Thymine
- c) Adenine, Guanine, Uracil, and Thymine
- d) Adenine, Uracil, Cytosine, and Thymine

6. Which of the following is a type of RNA involved in protein synthesis?
- a) snRNA
 - b) rRNA
 - c) yRNA
 - d) dsRNA
7. How many unusual bases are observed in a tRNA molecule?
- a) 1
 - b) 3
 - c) 5
 - d) 0
8. What is the correct pair of the four segments (R1, R2, R3, and R4)?
- a) R1 and R2, R3 and R4
 - b) R2 and R3, R1 and R4
 - c) R1 and R3, R2 and R4
 - d) R2 and R1, R3 and R4
9. What is the resolution?
- a) Exchange of DNA fragments
 - b) Heterochromatin structure formation
 - c) Regeneration of duplex DNA molecule
 - d) Cleavage of holiday junction
10. Which two Uvr component molecules scan the DNA during nucleotide excision repair?
- a) UvrB, UvrC
 - b) UvrC, UvrA
 - c) UvrD, UvrA
 - d) UvrA, UvrB
11. In the following type of libraries pick the odd one out.
- a) cDNA library
 - b) A DNA library
 - c) Z DNA library
 - d) B DNA library
12. Which of the following parts of the mRNA determines the specificity of the amino acid attached?
- a) Acceptor stem
 - b) D loop
 - c) Ψ U loop
 - d) Variable loop
13. Which of the following is not true about nucleotides?
- a) Energy rich molecules
 - b) Monomeric units
 - c) Ubiquitous substances
 - d) Non enzymatic molecules

14. Which of the following is wrongly paired?
- a) Nucleic acid – hydrogen bond
 - b) Polysaccharide – glycosidic bond
 - c) Proteins – peptide bond
 - d) Phospholipids –phosphate linkage
15. Which of the following factors do not provide to the separation of DNA fragments during electrophoresis?
- a) Size
 - b) Matrix density
 - c) Chargaff's rule
 - d) Ethidium bromide
16. Which of the following is the slowest process among the following?
- a) Splicing
 - b) Translation
 - c) Transcription
 - d) Replication
17. Which of the following function of DNA is necessary for the purpose of evolution?
- a) Mutation
 - b) Replication
 - c) Translation
 - d) Transcription
18. Which of the following is not a component of the nucleic acid backbone?
- a) Nucleotide
 - b) Phosphate group
 - c) Pentose sugar
 - d) Phosphodiesterase bond
19. Which of the following does not take part in gene expression?
- a) Transcription
 - b) RNA processing
 - c) Replication
 - d) Translation
20. Which of the following is a character of ORF?
- a) Non – overlapping
 - b) 3 – nucleotide codons
 - c) Contiguous
 - d) Intron


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16.	Nikam Abhishek Ajay	P	18	PASS
17.	Patil Dipalaxmi Tukaram	P	14	PASS
18.	Patil Komal Machchhindra	P	17	PASS
19.	Patil Rajashri Babaso	AB	00	FAIL
20.	Patil Srushti Shashikant	P	14	PASS
21.	Patil Vinayak Shivaji	P	14	PASS
22.	Patil Vishakha Baburao	P	13	PASS
23.	Pawar Anuja Maruti	AB	00	FAIL
24.	Shedage Jayshree Digambar	P	16	PASS
25.	Shewale Sanika Ananda	P	17	PASS
26.	Shinde Kajal Laxman	P	18	PASS
27.	Sondulakar Rohan Jaysing	P	14	PASS
28.	Sosale Sanika Sambhaji	P	17	PASS
29.	Sutar Neha Ramesh	AB	00	FAIL
30.	Undalakar Vivek Ashok	P	14	PASS
31.	Wagh Sayali Yuvraj	P	14	PASS
32.	Waghamare Ragini Dipak	P	13	PASS
33.	Patil Sanika Ramchandra	AB	00	FAIL
34.	Mulla Muskan Salim	P	16	PASS
35.	Jadhav Sambhaji Shivaji	P	17	PASS
36.	Kumbhar Siddhesh Arun	P	18	PASS



P.P. Swami Vivekanand Sevashram Sanstha, Shirala's

VISHWASRAO NAIK ARTS, COMMERCE & BABA NAIK SCIENCE MAHAVIDYALAYA, SHIRALA

Tal.: Shirala, Dist.: Sangli, Maharashtra - 415408



NAAC GRADE - 'B'

(Affiliated to Shivaji University, Kolhapur.)

EST : JUN-1970

Junior College Code : 15
Junior College No. J-22-09-001
UDISE No.: 27350713220

(JUNIOR/SENIOR)

Principal : Dr. R. B. Bansode
M.A., M.Phil., Ph.D.

(02345) 272107 vishwasraonaik@rediffmail.com www.vnbnmshirala.org

Out Ward No. V.N.M. /

/

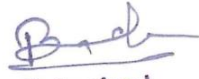
Date : / / 20



STUDENTS UNIT TEST NOTICE

All the students from B.Sc. II year informed that Unit Test-IV(Semester-IV) will be held on 20/03/2024 from 11.00.am to 12.00pm.

All the student are instructed to remain present for the scheduled test.


Principal,
Vishwasrao Naik Arts, Com. &
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Shirala, Dist. Sangli,

Shivaji University Kolhapur
Vishwasrao Naik Arts, Commerce and Baba Naik
Science Mahavidyalaya Shirala.

Tal. Shirala, Dist. Sangli-415408

DEPARTMENT OF BOTANY

UNIT TEST-IV

B.Sc. II YEAR 2023-24 (SEMESTER-IV)

**Botany Paper VII: DSC D13: PLANT ECOLOGY AND ECONOMIC
BOTANY**

DATE:23/03/2024

TIME:11.00am-12.00pm

Mark:20

Time: 1 Hours

=====

1.. The bottom area where production is less than respiration in a pond ecosystem is termed as

Profundal zone

Tidal zone

Benthic zone

Limnetic zone

2. Which is not the characteristic of 'r' selected species?

Reproduce quickly

Parental care

A low survival rate of progenies

Produce a large number of progenies

3. Which is not the characteristic of a population?

Natality

Mortality

Stratification

Sex ratio

4. Lincoln index measures

Population mortality rate

Population natality rate

Population size

Population density

5. Allelopathy refers to

Inhibition of growth of one species by another by the production of toxins

Inhibition of sporulation of pathogen by the host

Altering the reproductive cycle of one organism by another

Inhibition of growth of one species by another by preventing reproduction

6. The ratio between energy flow at different points in a food chain is known as

Ecological capacity

Ecological efficiency

Ecological assimilation

Ecological potential

7. The ability of a population to increase under ideal environmental conditions is called

Natality

Carrying capacity

Biotic potential

Absolute natality

8. In an ecosystem, the energy flow is always

Always unidirectional

Always bidirectional

In any direction

Always down directional

9. In thermal stratification, the middle region which shows vertical temperature change is called

Mesolimnion

Epilimnion

Metolimnion

Hypolimnion

10. Select a non-denitrifying bacteria

Pseudomonas aeruginosa

Thiobacillus

Thiobacillus denitrificans

Bacillus ramosus

11. Which one is a 'K' selected species?

Aspergillus

Human

Taraxacum

Grass

12. All species of Lemur are endemic to which area?

Madagascar

Seychelles Island

Galapagos Island

New Caledonia

13. The upper part of an aquatic ecosystem contains

Nekton

Plankton

Benthos

both (1) and (2)

14. What type of food chain is it?

dead animals → blowfly maggot → maggots → frog → snake

Detrital food chain

Decomposer food chain

Predator food chain

Grazing food chain

15. Identify the mismatched pair

Tundra – Permafrost

Savanna – Acacia trees

Prairie – Epiphytes

Coniferous forest – Evergreen trees

16. “The pyramid of energy is always upright” states that

The energy conversion efficiency of herbivores is better than carnivores

The energy conversion efficiency of carnivores is better than herbivores

Producers have the lowest energy conversion efficiency

Energy conversion efficiency is the same in all trophic levels

17. The population of birds declined in an area where DDT was extensively used. Why?

The birds stopped laying eggs

The eggs laid by the birds did not hatch

The snakes ate the eggs

The DDT spray killed all the birds

18. Which of the following lake zones has phytoplanktons in abundance?

Littoral zone

Benthic zone

Limnetic zone

Profundal zone

19. Plant species with a wide range of genetic distribution evolve into a local population known as

Ecotype

Population

Ecosystem

Biome

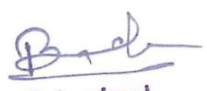
20. dB is the abbreviation used for the quantitative expression of

The density of bacteria in a medium

A Particular Pollutant

Dominant Bacillus in a culture

A pesticide


Principal,
Vishwasrao Naik Arts, Com. &
Baba Naik Science Mahavidyalaya
Shirala, Dist. Sangli,

INTERNAL TEST RESULT

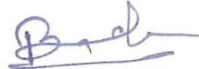
Sr. No	Name of the Students	Present/Absent	Mark out of 20	Pass/Fail
1.	Chavan Sharvari Subhash	P	14	PASS
2.	Chougule Priti Namdev	P	13	PASS
3.	Dashawant Sushreya Sanjay	AB	00	FAIL
4.	Desai Komal Nandeeep	P	16	PASS
5.	Dhadam kalyani Suresh	P	17	PASS
6.	Harchirkar Nazaneen Abdula	P	18	PASS
7.	Jadhav Avinash Hanamant	P	14	PASS
8.	Kachare Dnyandeep Arjun	P	17	PASS
9.	Kalantre Mayuri Shankar	AB	00	FAIL
10.	Mahadik Sunny Satish	P	14	PASS
11.	Mane Sanika Bhimrao	P	14	PASS
12.	Mane Vaishnavi Suresh	P	13	PASS
13.	Mutal Arati Ramchandra	AB	00	FAIL
14.	Naikawadi Jayvanta Maruti	P	16	PASS
15.	Naikawadi Naziya Karim	P	17	PASS
16.	Nikam Abhishek Ajay	P	18	PASS
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35.	Jadhav Sambhaji Shivaji	P	17	PASS
36.	Kumbhar Siddhesh Arun	P	18	PASS



STUDENTS UNIT TEST NOTICE

All the students from B.Sc. II year informed that Unit Test-IV(Semester-IV) will be held on 20/03/2023 from 11.00.am to 12.00pm.

All the student are instructed to remain present for the scheduled test.


**Principal,
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Baba Naik Science Mahavidyalaya
Shirala, Dist. Sangli,**

Shivaji University Kolhapur
Vishwasrao Naik Arts, Commerce and Baba Naik
Science Mahavidyalaya Shirala.

Tal. Shirala, Dist. Sangli-415408

DEPARTMENT OF BOTANY

UNIT TEST-IV

II YEAR-2023-24. (SEMESTER-IV)

**Botany Paper VIII: DSC D14: PLANT PHYSIOLOGY, NURSERY AND
GARDENING TECHNIQUES**

DATE:24/03/2023

TIME:11.00am-12.00pm

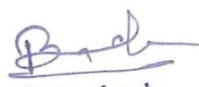
Mark:20

Time: 1 Hours

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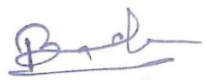
1. The first carbon dioxide acceptor in C₄-plants is
(a) phosphoenol-pyruvate (b) ribulose 1, 5-diphosphate
(c) oxalo-acetic acid (d) phosphoglyceric acid
2. In soil, the water available for root absorption is
(a) gravitational water (b) capillary water (c) hygroscopic water (d) combined water
3. The most widely accepted theory for ascent of sap in trees is
(a) capillarity (b) role of atmospheric pressure (c) pulsating action of living cell
(d) transpiration pull and cohesion theory of Dixon and Jolly.
4. Twining of tendrils is due to
(a) thigmotropism (b) seismonasty (c) heliotropism (d) diageotropism.
5. A chemical believed to be involved in flowering is
(a) gibberellins (b) kinetin (c) florigen (d) IBA.
6. The hormone responsible for apical dominance is
(a) IAA (b) GA (c) ABA (d) Florigen
7. Abscissic acid causes
(a) stomatal closure (b) leaf expansion (c) stem elongation (d) root elongation.
8. Photosynthetic pigments found in the chloroplasts occur in
(a) thylakoid membranes (b) plastoglobules (c) matrix (d) chloroplast envelope.
9. Dark reactions of photosynthesis occur in
(a) granal thylakoid membranes (b) stromal lamella membranes
(c) stroma outside photosynthetic lamellae (d) periplastidial space.
10. Which technique has helped in investigation of Calvin cycle?
(a) X-ray crystallography (b) X-ray technique (c) radioactive isotope technique

- (d) intermittent light.
11. During monsoon, the rice crop of eastern states of India shows lesser yield due to limiting factor of
(a) CO₂ (b) light (c) temperature (d) water.
12. Ferredoxin is a constituent of
(a) PS I (b) PS II (c) Hill reaction (d) P680
13. Water movement between cells is due to
(a) T.P. (b) W.P. (c) D.P.D. (d) incipient plasmolysis.
14. Which of the following is used to determine the rate of transpiration in plants?
(a) porometer/hygrometer (b) photometers (c) auxanometer (d) tensiometer/barometer
15. Guttation is mainly due to
(a) root pressure (b) osmosis (c) transpiration (d) imbibition.
16. In terrestrial habitats, temperature and rainfall conditions are influence by
(a) water transformations (b) transpiration (c) thermoperiodism (d) translocation.
17. Conversion of starch to organic acids is required for
(a) stomatal opening (b) stomata! Closing (c) stomatal formation (d) stomatal activity
18. At constant temperature, the rate of transpiration will be higher at
(a) sea level (b) 1 km below sea level (c) 1 km above sea level (d) 1.5 km above sea level
19. In guard cells when sugar is converted into starch, the stomatal pore
(a) closes completely (b) opens partially (c) opens fully (d) remains unchanged
20. Which is employed for artificial ripening of banana fruits?
(a) auxin (b) coumarin (c) ethylene (d) cytokinin.


**Principal,
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Baba Naik Science Mahavidyalaya
Shirala, Dist. Sangli,**

INTERNAL TEST RESULT

Sr. No	Name of the Students	Present/Absent	Mark out of 20	Pass/Fail
1.	Chavan Sharvari Subhash	P	14	PASS
2.	Chougule Priti Namdev	P	13	PASS
3.	Dashawant Sushreya Sanjay	AB	00	FAIL
4.	Desai Komal Nandeep	P	16	PASS
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36.	Kumbhar Siddhesh Arun	P	18	PASS


Principal,
Vishwasrao Naik Arts, Com. &
Baba Naik Science Mahavidyalaya
Shirala, Dist. Sangli,

Open Book Test

2023-24



PP Swami Vivekanand Sevashram Sanstha, Shirala's
**VISHWASRAO NAIK ARTS, COMMERCE &
BABA NAIK SCIENCE MAHAVIDYALAYA, SHIRALA**
Tal.: Shirala, Dist.: Sangli, Maharashtra - 415408



NAAC GRADE - 'B'

Junior College Code : 15

Junior College No. J-22-09-001

UDISE No.: 27350713220

(Affiliated to Shivaji University, Kolhapur.)

(JUNIOR/SENIOR)

EST : JUN-1970

Principal : Dr. R. B. Bansode
M.A., M.Phil., Ph.D.

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Out Ward No. V.N.M. / /

Date : / / 20

Date: 20/02/2024

Department of Botany

Notice

All the students from B.Sc.-I hereby informed that **Open Book Test** of 20 Marks on the Paper III will be held on 22/02/2024 at 9.30 a.m. at the Science Lecture Hall. All students are informed to attend this scheduled Open Book Test.



PRINCIPAL

Vishwasrao Naik Arts, Com. &
Baba Naik Science Mahavidyalaya
Shirala, Tal : Shirala, Dist : Sangli.

Name : Kisan Sambhaji Salunkhe

Sub : Botany

Unit : Phytopathology

Date : 22/02/24

18

20

1] MCQ.

1] Veinal chlorosis in the leaves is called as disease.

~~a] GSD~~~~b] Mosaic~~

c] blight

d] rust.

2] Severe infection leads to secretion of colourless fluid from the host tissue i.e.

~~a] rust~~~~b] necrosis~~

c] smut

d] exudation.

3] In conditions, the twigs die from the tip to downwards & show burnt appearance.

~~a] blight~~~~b] Mildew~~

c] Dieback

d] rust.

4] is common symptom of the fungal disease at seedling stage.

~~a] Anthracnose~~~~b] Damping off~~

c] Mildew

d] rust.

5] Pomegranate blight is disease.

~~a] Viral~~~~b] bacterial~~

c] Fungal

d] Mycoplasma.

6] White rust of crucifers is disease.

~~a] Viral~~~~b] bacterial~~

c] Fungal

d] Mycoplasma

7] Causal organisms of White rust is

~~a] Albugo sp.~~~~b] Pythium sp.~~

c] Puccinia sp.

d] Gynoderma spp.

8] Study of different plant diseases caused by various pathogens is called as

~~a] Phytopathology~~~~b] microbiology~~

c] biochemistry

d] Genetic.

2) describe systems & control measures of yellow vein mosaic of Bhendi.

Yellow Vein Mosaic of Bhendi

Host : — Abelmoschus esculentus

Causal organisms : — Yellow vein mosaic virus [YVMV]
Bhendi Yellow vein mosaic virus [BYVMV]

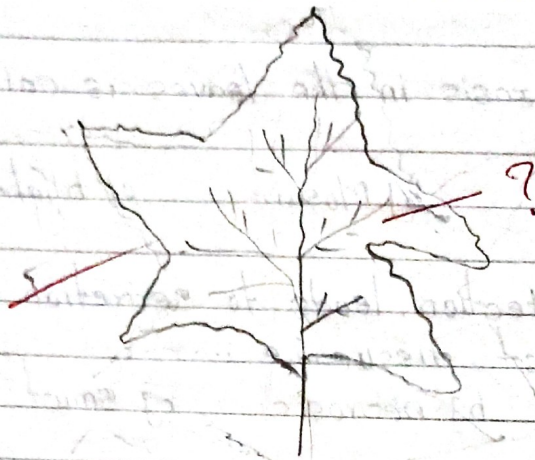


Fig - Infected leaves of Bhendi

Symptoms : —

- i] Yellowing of the entire network of the vein are clearest observed.
- ii] In the several infection young leaves become yellow in colored & shows stunted growth.
- iii] The leaves of vein are become yellow or white in colored due to the viral infection.
- iv] Infection affect on fructing & flowering.
- v] Affect fruit become yellow or white it does not fit on marketing.
- vi] Infected plant does not shows flowering ability

disease cycle : — i] This disease transmitted by insects like white flies & bhendi leaf hopper
ii] Artificially this disease transmitted by wounds & or grafting by plants.

Control measures -

This disease have two types control measures.

i) Prevention measures:

a) No any suitable & perfect method for control this disease but use of control resistant varieties like Varsha Uphaz, Abhya kranti etc can be minimized the disease.

b) Use of insecticides like Rogor ek-dox etc spreading of this that control disease.

ii)

5) Grassy shoot Disease of Sugarcane [GSD]

Host :— Saccharum officinarum.

Causal organisms :— Mycoplasma like organisms. [MLO]

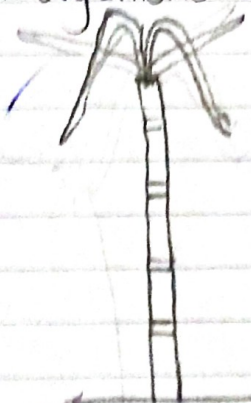


Fig Healthy plant

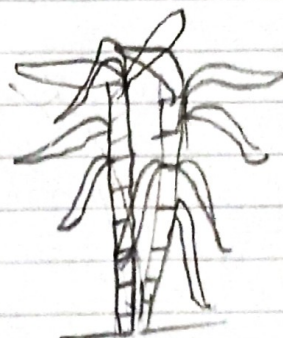


Fig Infected Plant of sugarcane

Symptoms :—

i) Grassy shoot disease of sugarcane characterized by production of cylindrical, thin, adventitious tillers of the affected plant of the shoot.

ii] This tillers produce chlorotic leaves, which thin, narrow in reduced in size.

iii] The size of internodes become reduce due to the infection of the shoot.

iv] Plant grows are stunted, bushy, & broom like structure.

disease cycle :— i] These disease transmitted by infected set of sugar cane.

ii] & transmitted by insect vector pathogen.

Prevention measures :—

i] Use of ^{tissue} clutring methods of plant set.

ii] Use of in pathogen preventing set.

विश्वासराव नाईक कला वाणिज्य आणि बाबा नाईक विज्ञान
महाविद्यालय, शिराळा.

मराठी विभाग

बी. ए. भाग 3 सत्र ६ पेपर क्र. १३, चाचणी ३

मराठी भाषा व भाषा विज्ञान

दिनांक १२/०२/२०२४

सर्व प्रश्न सोडवणे आवश्यक आहे.

गुण २०

प्रश्न दीर्घोत्तरी प्रश्न लिहा.

२० गुण

प्रश्न१ व्यंजनाचे प्रकार सविस्तर लिहा

प्रश्न२ ध्वनी परिवर्तन म्हणजे काय त्याची कारणे व प्रकार लिहा

विश्वासराव नाईक कला वाणिज्य आणि बाबा नाईक विज्ञान
महाविद्यालय, शिराळा.

मराठी विभाग

बी. ए. भाग 3 सत्र ६ पेपर क्र. १२, चाचणी ३
साहित्यविचार

दिनांक १२/०२/२०२४

सर्व प्रश्न सोडवणे आवश्यक आहे.

गुण २०



प्रश्न १ दीर्घोत्तरी प्रश्न लिहा.

२० गुण

प्रश्न १ शब्दशक्ती म्हणजे काय व्याख्या व स्वरूप स्पष्ट करा.

प्रश्न २ रस म्हणजे काय सविस्तर लिहा.

विश्वासराव नाईक कला वाणिज्य आणि बाबा नाईक विज्ञान
महाविद्यालय, शिराळा.

मराठी विभाग

बी. ए. भाग 3 सत्र ५ पेपर क्र. ११, चाचणी २

वाङ्मय प्रवाहाचे अध्ययन : मध्ययुगीन

दिनांक १३ / ११ / २०२३



सर्व प्रश्न सोडवणे आवश्यक आहे.

गुण २०

प्रश्न दीर्घोत्तरी प्रश्न लिहा.

२० गुण

प्रश्न १ दृष्टांतपाठातील अभिव्यक्ती विशेष स्पष्ट करा.

प्रश्न २ दृष्टांत पाठातील भाषाचा परिचय करून द्या.

विश्वासराव नाईक कला वाणिज्य आणि बाबा नाईक विज्ञान
महाविद्यालय, शिराळा.

मराठी विभाग

बी. ए. भाग ३ सत्र ५ पेपर क्र. १०, चाचणी २

मराठी भाषा व अर्थार्जनाच्या संधी

दिनांक १३/११/२०२३



सर्व प्रश्न सोडवणे आवश्यक आहे.

गुण २०

प्रश्न दीर्घोत्तरी प्रश्न लिहा.

२० गुण

प्रश्न १ संशोधन निबंधाचे स्वरूप व संकल्पना सविस्तर लिहा.

प्रश्न २ अंतरजालावरील मराठी संकेत स्थळांचा परिचय करून द्या.

विश्वासराव नाईक कला वाणिज्य आणि बाबा नाईक विज्ञान
महाविद्यालय, शिराळा.

मराठी विभाग

बी. ए. भाग ३ सत्र ५ पेपर क्र. ८, चाचणी २

मराठी भाषा व भाषाविज्ञान

दिनांक ११/११/२०२३

सर्व प्रश्न सोडवणे आवश्यक आहे.

गुण २०



प्रश्न दीर्घोत्तरी प्रश्न लिहा

२० गुण

प्रश्न १) स्वन, स्वनिम, स्वननांतर याच्या संकल्पना व स्वरूप स्पष्ट करा.

प्रश्न २) वाक्याचे प्रकार सांगा.

विश्वासराव नाईक कला वाणिज्य आणि बाबा नाईक विज्ञान
महाविद्यालय, शिराळा.

मराठी विभाग

बी. ए. भाग ३ सत्र ५ पेपर क्र. ७, चाचणी २
साहित्यविचार



दिनांक ११/११/२०२३

सर्व प्रश्न सोडवणे आवश्यक आहे.

गुण २०

प्रश्न दीर्घोत्तरी प्रश्न लिहा

२० गुण

प्रश्न १) साहित्याची प्रयोजने कोणती?

१० गुण

प्रश्न २) अलंकाराच्या व्याख्या व स्वरूप स्पष्ट करा?

१० गुण

विश्वासराव नाईक कला वाणिज्य आणि बाबा नाईक विज्ञान
महाविद्यालय, शिराला.

मराठी विभाग

बी. ए. भाग ३ सत्र ५ पेपर क्र. ११, चाचणी १

वाङ्मय प्रवाहाचे अध्ययन : मध्ययुगीन

दिनांक १४/०९/२०२३

सर्व प्रश्न सोडवणे आवश्यक आहे.

गुण २०



प्रश्न दीर्घोत्तरी प्रश्न लिहा.

२० गुण

प्रश्न १ महानुभाव गद्यग्रंथकार कसोबास यांचा परिचय करून
द्या.

प्रश्न २ दृष्टांत पाठातील आशयसूत्रे सविस्तर लिहा.

विश्वासराव नाईक कला वाणिज्य आणि बाबा नाईक विज्ञान
महाविद्यालय, शिराळा.

मराठी विभाग

बी. ए. भाग 3 सत्र ५ पेपर क्र. १०, चाचणी १

मराठी भाषा व अर्थार्जनाच्या संधी

दिनांक १४/०९/२०२३

सर्व प्रश्न सोडवणे आवश्यक आहे.



गुण २०

प्रश्न दीर्घोत्तरी प्रश्न लिहा.

२० गुण

प्रश्न सर्जनशील लेखनाची संकल्पना व स्वरूप स्पष्ट करा.

प्रश्न वैचारिक लेखनाचे प्रकार लिहा.

महाविद्यालय, शिराळा.

SHIRALA,
Dist. Sargol.

मध्ययुगीन मराठी वाङ्मयाचा इतिहास (प्रारंभ ते इ.स.१५००)

सर्व प्रश्न सोडवणे आवश्यक आहे.

गुण २०

२० गुण

प्रश्न१ मराठीतील आद्य ग्रंथकार मुकुंदराज यांच्या ग्रंथांचा परिचय करून द्या.

प्रश्न२ महानुभववीय पद्यातील सातीग्रंथांचा परिचय करून द्या.

विश्वासराव नाईक कला वाणिज्य आणि बाबा नाईक विज्ञान
महाविद्यालय, शिराळा.

मराठी विभाग

बी. ए. भाग 3 सत्र ५ पेपर क्र. ८, चाचणी 1

मराठी भाषा व भाषाविज्ञान

दिनांक १३ /०९/२०२३

सर्व प्रश्न सोडवणे आवश्यक आहे.

गुण २०



प्रश्न दीर्घोत्तरी प्रश्न लिहा

२० गुण

प्रश्न१) भाषेच्या उत्पत्तीच्या उपपत्तीसिद्धांत स्पष्ट करा.

प्रश्न२) भाषा म्हणजे काय भाषेच्या व्याख्या भाषेचे स्वरूप स्पष्ट करा.

विश्वासराव नाईक कला वाणिज्य आणि बाबा नाईक विज्ञान
महाविद्यालय, शिराळा.

मराठी विभाग

बी. ए. भाग 3 सत्र ५ पेपर क्र. ७, चाचणी १
साहित्यविचार



दिनांक १३ /०९/२०२३

सर्व प्रश्न सोडवणे आवश्यक आहे.

गुण २०

प्रश्न दीर्घोत्तरी प्रश्न लिहा

२० गुण

प्रश्न १) ललित साहित्यातून व्यक्त होणाऱ्या अनुभवांचे विशेष स्पष्ट
करा. १० गुण

प्रश्न २) प्रयोजन म्हणजे का प्रयोजन आणि परिणाम यातील फरक स्पष्ट
करा. १० गुण

विश्वासराव नाईक कला वाणिज्य आणि बाबा नाईक विज्ञान
महाविद्यालय, शिराळा.

मराठी विभाग

बी. ए. भाग २ चाचणी ४



दिनांक ०४/०३/२०२४

सर्व प्रस्न सोडवणे आवश्यक आहे.

गुण २०

प्रश्न दीर्घोत्तरी प्रश्न लिहा

२० गुण

- १) वृत्तांत लेखनाचे विशेष सांगा.
- २) वृत्तांत लेखनाची रचना थोडक्यात सांगा.
- ३) तूम्ही गेलेल्या शैक्षणिक सहलीचा वृत्तांत लिहा.
- ४) तूम्ही भेट दिलेल्या एखाद्या वस्तु संग्रालयाच्या भेटीचा वृत्तांत लिहा

विश्वासराव नाईक कला वाणिज्य आणि बाबा नाईक विज्ञान

महाविद्यालय, शिराळा.

मराठी विभाग

बी. ए. भाग २ चाचणी ३



दिनांक ०५ / ०२ / २०२४

सर्व प्रस्न सोडवणे आवश्यक आहे.

गुण २०

१) ना. धो. महानोर यांनी 'पक्ष्यांचे लक्ष थवे' या काव्यसंग्रहात माणूस आणि निसर्ग यांचे संबंधाचे दर्शन कसे घडवले आहे ते लिहा.

२) कवी ना. धो. महानोर यांची रानविषयक कविता विषयीची भावना तुमच्या शब्दात लिहा?

विश्वासराव नाईक कला वाणिज्य आणि बाबा नाईक
विज्ञान महाविद्यालय, शिराळा.



मराठी विभाग

बी. ए. भाग २ चाचणी २

दिनांक ०७/०९/२०२३

सर्व प्रस्न सोडवणे आवश्यक आहे.

गुण २०

प्रश्न दीर्घोत्तरी प्रश्न लिहा

२० गुण

ना.धो.महानोर यांनी 'पक्ष्यांचे लक्ष थवे' या काव्यसंग्रहात माणूस आणि निसर्ग
यांचे संबंधाचे दर्शन कसे घडवले आहे ते लिहा.

कवी ना.धो.महानोर यांची रानविषयक कविता विषयीची भावना तुमच्या शब्दात लिहा?

विश्वासराव नाईक कला वाणिज्य आणि बाबा नाईक विज्ञान
महाविद्यालय, शिराळा.

मराठी विभाग

बी. ए. भाग २ चाचणी १



दिनांक १०/०८/२०२३

सर्व प्रश्न सोडवणे आवश्यक आहे.

गुण २०

प्रश्न दीर्घोत्तरी प्रश्न लिहा.२

अंतर्गत विकल्पासह दीर्घोत्तरी प्रश्न

गुण २०

ना.धो.महानोर यांच्या प्रेम विषयक कवितेचे अंतरंग उलगडून दाखवा?

कवी ना.धो.महानोरांचे संवेदनशील व्यक्तिमत्व स्पष्ट करा.

विश्वासराव नाईक कला वाणिज्य आणि बाबा नाईक विज्ञान
महाविद्यालय, शिराळा.

मराठी विभाग

बी. ए. भाग १ सत्र २ चाचणी ४

शब्दसंहिता (आवश्यक मराठी)

दिनांक ०१/०३/२०२४

सर्व प्रश्न सोडवणे आवश्यक आहे.



गुण २०

प्रश्न दीर्घोत्तरी प्रश्न लिहा.

प्रश्न १) 'जमाना आला उपराट' या लावणीतील पेशवेकालीन समाज जीवनाचे
चित्रण स्पष्ट करा.

१० गुण

प्रश्न २ विंदा करंदीकर यांचा परिचय देऊन 'माझ्या मना बन दगड' या कवितेचा
आशय सविस्तर लिहा.

१० गुण

विश्वासराव नाईक कला वाणिज्य आणि बाबा नाईक विज्ञान
महाविद्यालय, शिराळा.

मराठी विभाग

बी. ए. भाग १ सत्र २ चाचणी ३

शब्दसंहिता (आवश्यक मराठी)

दिनांक ०५/०२/२०२४

सर्व प्रश्न सोडवणे आवश्यक आहे.



गुण २०

प्रश्न दीर्घोत्तरी प्रश्न लिहा.

प्रश्न १) विंदा करंदीकर यांचा परिचय देऊन 'माझ्या मना बन दगड' या कवितेचा
आशय सविस्तर लिहा.

१० गुण

प्रश्न २) विठ्ठलदर्शनाने येणारा अंतरर्बाह्य कैवल्यचा अनुभव संत नामदेवांनी
आपल्या अभंगात कसा वर्णन केला आहे.

१० गुण

विश्वासराव नाईक कला वाणिज्य आणि बाबा नाईक विज्ञान
महाविद्यालय, शिराळा.

मराठी विभाग

बी. ए. भाग १ चाचणी २
शब्दसंहिता (आवश्यक मराठी)

दिनांक १०/०८/२०२३



सर्व प्रश्न सोडवणे आवश्यक आहे.

गुण २०

प्रश्न दीर्घोत्तरी प्रश्न लिहा.

प्रश्न १) चंद्रशेखर धर्माधिकारी यांनी नापास झालेला महत्वाचा प्रसंग 'शब्दाचे
मोल' या पाठात कसा सांगितला आहे ते लिहा.

गुण १०

प्रश्न २) दया पवार यांनी 'संगमनेरचे दिवस' पाठात त्यांनी सांगितलेले अनुभव
तुमच्या शब्दात सविस्तर लिहा.

गुण १०

विश्वासराव नाईक कला वाणिज्य आणि बाबा नाईक
विज्ञान महाविद्यालय, शिराळा.

मराठी विभाग

बी. ए. भाग १ चाचणी १

शब्दसंहिता (आवश्यक मराठी)

दिनांक ०७/०९/२०२३



सर्व प्रस्न सोडवणे आवश्यक आहे.

गुण २०

प्रश्न दीर्घोत्तरी प्रश्न लिहा

२० गुण

प्रश्न१ 'पन्नास पैकी शून्य मार्क' या पाठात शांता शेळके यांना शालेय जीवनात
आलेला महत्त्वपूर्ण अनुभव सांगा.

१० गुण

प्रश्न२ 'वाटेवरच्या सावल्या' या लेखातून कुसुमाग्रज यांच्या शालेय जीवनाचे
चित्रण करा.

१० गुण



P. P. Swami Vivekanand Sevashram Sanstha, Shirala's
**VISHWASRAO NAIK ARTS, COMMERCE &
 BABA NAIK SCIENCE MAHAVIDYALAYA, SHIRALA**
 Affiliated To Shivaji University, Kolhapur



EST. JUN-1975

Department of Marathi
Session 2023-24 B. A. III (Sem VI)
Student Unit Test Mark List

Sr.No	Student Name	Paper XII		Paper XIII		Paper XIV		Paper XV		Paper XVI	
		Test 1	Test 2	Test 1	Test 2	Test 1	Test 2	Test 1	Test 2	Test 1	Test 2
1	Dange Viswajeet Prabhakar	14	15		14	11	13		14		14
2	Gaikwad Mayur Mahadev	10	12	Ab	13	10	12	11	13	12	
3	Jagatap Varsha Vishnu	Ab	11	12	11	10	11	12	11	12	10
4	Kasar Abhijeet Shivaji	10	Ab	13	14	11	Ab	13	14	11	12
5	Khot Reshma Tanaji	12	13	14	15	12	12	14	13	Ab	11
6	Khot Tushar Chandrakant	13	12	12	13	12	13				15
7	Mahajan Priyanka Mahendra	14	15	10		13	14	12	Ab	13	
8	Mane Suraj Sunil	Ab	12	12	Ab	14	14	10	14	12	13
9	Mirajkar vaishnavi Santosh	11	13		12	10	13	12	15	10	14
10	Patil Ganesh Jagannath	11	10	14	15	12	12	13	14	12	12
11	Patil Saurabh Chandrakant	12		13	14	13	14	10	14	13	12
12	Pawar Ankita Vijaykumar	13	14	15	14	12	15	12	14	10	Ab
13	Pwar Omkar Vijaykumae	14	15	14	13	15	Ab	10	13	10	12
14	Sawant Ajay Yuvraj	12	15	12	15	12	14	12	Ab	11	14
15	Sawant Vikas Sambhaji	10	13	Ab	12	14	15	10	11	12	15
16	Talagavkar Vikas Kashinath	11	14	14	15	13	14		15	14	14
17	Thakur Ramu Gopal	13	15	14	14	15	Ab	14	15	12	16

[Signature]
 विभागाध्यक्ष, मराठी विभाग
 विश्वासराव नाईक कला वाणिज्य शाळा
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 Shirala, Dist. Sangli
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 शिराला, ता. शिराला, जि. सांगली



Dr. P. Swami Vivekanand Sevashram Sanatha, Shirala's
VISHWASRAO NALK ARTS, COMMERCE &
BABA NALK SCIENCE MAHAVIDYALAYA, SHIRALA
 Affiliated To Shivaji University, Kolhapur



Department of Marathi
Session 2023-24 B. A. III (Sem V)
Student Unit Test Mark List

Sr.No	Student Name	Paper VII		Paper VIII		Paper IX		Paper X		Paper XI	
		Test 1	Test 2	Test 1	Test 2	Test 1	Test 2	Test 1	Test 2	Test 1	Test 2
1	Dange Viswajeet Prabhakar	14	15	Ab	14	11	13	14		12	14
2	Gaikwad Mayur Mahadev	10	12	10	13	10	12	13		09	Ab
3	Jagatap Varsha Vishnu	Ab	11	12	11	10	11	10	11	12	10
4	Kasar Abhijeet Shivaji	10	Ab	13	14	11	Ab	13	14	11	12
5	Khot Reshma Tanaji	12	13	14	15	12	12	14	13	Ab	11
6	Khot Tushar Chandrakant	13	12	12	13	12	13	12	Ab	13	15
7	Mahajan Priyanka Mahendra	14	15	10		13	14	14	10	12	13
8	Mane Suraj Sunil	Ab	12	12	14	14	14	12	15	10	14
9	Mirajkar vaishnavi Santosh	11	13		12	10	13		14		12
10	Patil Ganesh Jagannath	11	10	14	15	12	12	Ab	13	12	12
11	Patil Saurabh Chandrakant	12		13	14	13	14		14	13	12
12	Pawar Ankita Vijaykumar	13	Ab	15	14	12	15	12	14	10	Ab
13	Pwar Omkar Vijaykumae	14	15	14	13	15	Ab	10	13	10	12
14	Sawant Ajay Yuvraj	12	15	12	15	12	14	12	Ab	11	14
15	Sawant Vikas Sambhaji	10	13	Ab	12	14	15	10	11	12	15
16	Talagavkar Vikas Kashinath	11	14	14	15	13	14		15	14	14
17	Thakur Ramu Gopal	13	15	14	14	15	Ab	14	15	12	16

(Signature)
 प्रमुख शिक्षण समूह
 विश्वासराव नाईक कला, वाणिज्य आणि
 बाबा नाईक विज्ञान महाविद्यालय
 शिराला, जि. सांगली



(Signature)
 Principal,
 Vishwasrao Nalk Arts, Com. &
 Baba Nalk Science Mahavidyalaya
 Shirala, Dist. Sangli

प्रमुख,
 विश्वासराव नाईक कला, वाणिज्य आणि
 बाबा नाईक विज्ञान महाविद्यालय,
 शिराला, जि. सांगली.

70	Gaikwad Niranjana Satish	12	11	10	Ab
71	Gosavi Dipali Sanjay	11	13	11	13
72	Gurav Dipali Mahadeo	10	12	10	12
73	Jadhav Sakshi Santosh	10	11	10	11
74	Kadam Sakshi Vishnu	11	Ab	11	Ab
75	Kamble Sangita Arjun	12	12	12	12
76	Kankanwadi Narayan Rajkumar	12	13	12	13
77	Maskar Abhishek Ganesh	13	14	13	14
78	Nikam Anish Sachin	14	14	14	14
79	Patil Abhijit Subhash	Ab	13	10	13
80	Patil Akanksha Rajendra	12	12	12	12
81	Patil Onkar Arjun	10	11	10	11
82	Patil Prathamesh Baburao	11	Ab	11	Ab
83	Patil Pravin Pandit	12	12	12	12
84	Patil Suraj Dilip	12	13	12	13
85	Sakate Sahil Laxman	13	14	13	14
86	Sakate Shradha Vitthal	14	14	14	14
87	Tandale Vinayak Dadaso	Ab	13	10	13
88	Tatale Shilpa Ramchandra	12	12	12	12
89	Thorat Baburao Balu	10	11	10	11



प्राचार्य,
विश्वासराव नाईक कला, वाणिज्य आणि
बादा नाईक विज्ञान महाविद्यालय,
शिराळा, ता. शिराळा, जि. सांगली.

28	Khot Sanika Shankar	10	Ab	13	Ab
29	Madale Suksham Rajesh	12	13	14	12
30	Madane Suraj Krushna	13	12	12	13
31	Mahind Mahesh Banda	14	15	10	14
32	Mali Aniket Bhagwan	Ab	12	12	14
33	Mane Hanmant Bhopal	11	13	Ab	13
34	Mane Omkar Dilip	11	10	14	12
35	Mane Pallavi Suresh	12	Ab	13	14
36	Mane Shivraj Nivas	13	14	15	15
37	Maskar Ashwini Ashok	14	15	14	Ab
38	Maskar Vaibhav Sambhaji	12	15	12	14
39	Mulik Vaibhav Sanjay	10	13	Ab	15
40	Nalawade Santosh Bhola	11	14	14	14
41	Nalawade Sopan Vishwas	13	15	14	Ab
42	Patil Amit Arjun	12	16	12	13
43	Patil Atharv Mahadev	Ab	14	13	14
44	Patil Ganesh Bhikaji	Ab	14	11	13
45	Patil Harshad Adhik	10	13	10	12
46	Patil Kalyani Rvindra	12	11	10	11
47	Patil Pratik Popat	13	14	11	Ab
48	Patil Pruthvi Mahadev	14	15	12	12
49	Patil Rohan Satish	12	13	12	13
50	Patil Rohit Rajaram	10	Ab	13	14
51	Patil Sadhana Suresh	12	14	14	14
52	Patil Sanika Dhanaji	Ab	12	10	13
53	Patil Sanket Khanderav	14	15	12	12
54	Patil Sayali Suresh	13	18	13	14
55	Pawale Neha Shivaji	15	14	12	15
56	Pawar Sahil Shankar	15	13	15	Ab
57	Pisal Sanika Dipak	12	15	12	14
58	Rokade Abhishek Sampat	Ab	12	14	15
59	Rokade Saurabh Sanjay	14	15	13	14
60	Salkar Suhani Rajendra	17	14	16	Ab
61	Sapkal Sumati Sunil	12	15	14	13
62	Sawant Nilesh Ashok	13	15	15	14
63	Shinde Harshada Ashok	14	16	16	15
64	Surle Vasudev Lakshman	Ab	13	17	15
65	Tamungade Pooja Sanjay	14	Ab	14	16
66	Tandale Tushar Tukaram	15	14	15	Ab
67	Tatale Sankita Popat	13	15	14	14
68	Ubale Shweta Anil	Ab	16	11	14
69	Yadav Abhinav Ramchandra	10	12	12	10



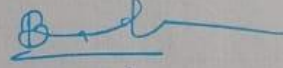
P. P. Swami Vivekanand Sevashram Sanatha, Shirala's
**VISHWASRAO NAIK ARTS, COMMERCE &
BABA NAIK SCIENCE MAHAVIDYALAYA, SHIRALA**
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Marathi Compulsory
Session 2023-2024 B. A. I (Sem I, II)
Student Unit Test Mark List

Sr.No	Student Name	Compulsory Pepar Sem 1		Compulsory Pepar Sem 2	
		Test 1	Test 2	Test 1	Test 2
1	Bambawade Nilam Bandu	10	11	10	11
2	Bepari Muskan Hajilal	11	Ab	11	Ab
3	Bhosale Prathamesh Prakash	12	12	12	12
4	Chavan Pratik Prakash	12	13	12	13
5	Chavan Sahil Sanjay	13	14	13	14
6	Chavan Sanika Mansing	14	14	14	14
7	Chavan Viraj Babaji	Ab	13	10	13
8	Desai jayashree Hauserao	10	11	10	11
9	Desai Rajashree Hauserao	11	Ab	11	Ab
10	Devkule Akshya Subhash	12	12	12	12
11	Dhole Shruti Suresh	12	13	12	13
12	Faste Supriya Pandurang	13	14	13	14
13	Gangdhar Sakshi Baban	15	Ab	14	13
14	Ingvale Shailesh Shantaram	12	14	12	15
15	Jadhav Akash Kumar	14	15	Ab	12
16	Jadhav Nandini Bhauso	13	14	14	15
17	Jadhav Shubham Sanjay	15	Ab	14	14
18	Jadhav Tanuja Arjun	14	13	12	15
19	Kadam Dhanshri Dinkar	15	14	13	15
20	Kadam Prathamesh Dilip	16	15	14	16
21	Kamble Ayush Sampat	17	15	Ab	13
22	Kamble Sneha deepak	14	16	14	Ab
23	Karle Sakshi Sandip	15	Ab	15	14
24	Kesare Vijay Uttam	14	14	13	15
25	Khabale Mahesh Krushnath	11	14	Ab	13
26	Khot Pranay Sanjay	12	10	10	12
27	Khot Sakshi Bajirao	10	Ab	12	11

110	Patil Tanuja Tanaji	15	13	15	Ab
111	Sakate Sahil Laxman	12	15	12	14
112	Sarfdar Sahil Tukaram	Ab	12	14	15
113	Sase Sahil Popat	14	15	13	14
114	Satpute Sahil Kakaso	17	14	16	Ab
115	Satpute Vedant Vilas	12	15	14	13
116	Shete Swati Dilip	13	15	15	14
117	Shikalagar Aman Adam	13	14	13	14
118	Shinde Omkar Arjun	12	15	12	15
119	Uthale Uday Hauserao	15	14	12	15



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शिराळा, ता. शिराळा, जि. सांगली.

70	Patil Trupti Jagannath	12	11	10	Ab
71	Patil Tushar Mahadev	11	13	11	13
72	Pawar Sahil Shankar	10	12	10	12
73	Pawar Sangharsh Laxman	10	11	10	11
74	Pawar Vedika Vijay	11	Ab	11	Ab
75	Pisal Sanika Dipak	12	12	12	12
76	Pujari Rahul Narayan	12	13	12	13
77	Rokade Saurabh Sanjay	13	14	13	14
78	Sangole Diksha Babasaheb	14	14	14	14
79	Sathe Smita Umesh	Ab	13	10	13
80	Sawant Nilesh Ashok	12	12	12	12
81	Sutar gauri Shankar	13	14	13	14
82	Tamungade Pooja Sanjay	12	15	12	15
83	Tandale Tushar Tukaram	15	14	12	15
84	Tatale Sankita Popat	15	13	15	Ab
85	Vagare Shravani Kashiling	12	15	12	14
86	Yadav Abhinav Ramchandra	Ab	12	14	15
87	Bhosale Saurabh Ravindra	14	15	13	14
88	Bhosale Vinay Shivaji	17	14	16	Ab
89	Gaikwad Niranjan Satish	12	15	14	13
90	Gosavi Dipali Sanjay	13	15	15	14
91	Gurav Dipali Mahadeo	14	16	16	15
92	Jadhav Sakshi Santosh	Ab	13	17	15
93	Jadhav Sayali Vilas	14	Ab	14	16
94	Kadam Akash Santosh	14	14	14	14
95	Kadam Sakshi Vishnu	Ab	13	10	13
96	Kamble Sangita Arjun	12	12	12	12
97	Kankanwadi Narayan Rajkumar	13	14	13	14
98	Khot Yash Vishwas	12	15	12	15
99	Lohar Sumit Sudhakar	15	14	12	15
100	Maskar Abhishek Ganesh	15	13	15	Ab
101	Mohite Sahil Mahindra	12	15	12	14
102	Mujawar Zahir Zhakir	Ab	12	14	15
103	Nikam Anish Sachin	14	15	13	14
104	Panhalkar Muajjam Mubarak	17	14	16	Ab
105	Patil Onkar Arjun	12	15	14	13
106	Patil Prathamesh Baburao	13	15	15	14
107	Patil Pratiksha Prakash	13	14	13	14
108	Patil Pravin Pandit	12	15	12	15
109	Patil Suraj Dilip	15	14	12	15

28	Kalekar Sushant Popat	10	Ab	13	Ab
29	Kamble Dipali Mohan	12	13	14	12
30	Kamble Rohan Ajit	13	12	12	13
31	Kamble Sakshi Ananda	14	15	10	14
32	Karle Sakshi Sandip	Ab	12	12	14
33	Kesare Vijay Uttam	11	13	Ab	13
34	Khot Pranay Sanjay	11	10	14	12
35	Khot Rutik Vishnu	12	Ab	13	14
36	Khot Saurabh Rajaram	13	14	15	15
37	Khot Tukaram Tanaji	14	15	14	Ab
38	Lohar Sanika Maruti	12	15	12	14
39	Madale Suksham Rajesh	10	13	Ab	15
40	Mahind Tanishka Rajaram	11	14	14	14
41	Mane Hanmant Bhopal	13	15	14	Ab
42	Mane Omkar Dilip	12	16	12	13
43	Mane Pallavi Suresh	Ab	14	13	14
44	Mane Rohan Ajay	Ab	14	11	13
45	Mane Shivraj Nivas	10	13	10	12
46	Maskar Vaibhav Sambhaji	12	11	10	11
47	Nadaf Yasin Javed	13	14	11	Ab
48	Nalawade Sopan Vishwas	14	15	12	12
49	Nalawade Tanuja Mohan	12	13	12	13
50	Patil Atharv Mahadev	10	Ab	13	14
51	Patil Dhanashri Narayan	12	14	14	14
52	Patil Ganesh Bhikaji	Ab	12	10	13
53	Patil Harshad Adhik	14	15	12	12
54	Patil Kalyani Rvindra	13	18	13	14
55	Patil Nikita Vijay	15	14	12	15
56	Patil Pournima Shrirang	15	13	15	Ab
57	Patil Prathamesh Shankar	12	15	12	14
58	Patil Pratik Popat	Ab	12	14	15
59	Patil Pruthvi Mahadev	14	15	13	14
60	Patil Rohan Satish	17	14	16	Ab
61	Patil Rutuja Hanmant	12	15	14	13
62	Patil Rutuja Ashok	13	15	15	14
63	Patil Sahil Shamrao	14	16	16	15
64	Patil Sakshi Sambhaji	Ab	13	17	15
65	Patil Sanika Dhanaji	14	Ab	14	16
66	Patil Sanket Khanderav	15	14	15	Ab
67	Patil Sayali Suresh	13	15	14	14
68	Patil Sharvari Sudhir	Ab	16	11	14
69	Patil Shreya Arun	10	12	12	10



P. P. Swami Vivekanand Sevashram Sanstha, Shirala's
**VISHWASRAO NAIK ARTS, COMMERCE &
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EST. JUN-1970

Marathi Optional
Session 2023-24 B. A. I (Sem I, II)
Student Unit Test Mark List

Sr.No	Student Name	Optional Pepar Sem 1		Optional Pepar Sem 2	
		Test 1	Test 2	Test 1	Test 2
1	Bambawade Nilam Bandu	16	15	14	16
2	Bhosale Prathamesh Prakash	17	15	Ab	13
3	Chavan Anil Hambirrao	14	16	14	Ab
4	Chavan Jayaraj Mahadev	15	Ab	15	14
5	Chavan Pratik Prakash	14	14	13	15
6	Chavan Sanika Mansing	11	14	Ab	13
7	Chavan Sidhesh Gangaram	12	10	10	12
8	Chavan Viraj Babaji	10	Ab	12	11
9	Desai jayashree Hauserao	10	Ab	13	Ab
10	Desai Rajashree Hauserao	12	13	14	12
11	Dhole Shruti Suresh	13	12	12	13
12	Dhumale Aarti Eknath	14	15	10	14
13	Faste Supriya Pandurang	Ab	12	12	14
14	Gaikwad Pratiksha Ramesh	16	15	14	16
15	Gharage Saurabh Jayvant	17	15	Ab	13
16	Ghashi Malik Hidayat	14	16	14	Ab
17	Ghevade Ashish Dinkar	15	Ab	14	14
18	Hiravadekar Sakshi Krushnat	14	13	12	15
19	Jadhav Akash Kumar	15	14	13	15
20	Jadhav Nandini Bhauso	16	15	14	16
21	Jadhav Pranali Rajaram	17	15	Ab	13
22	Jadhav Shreyash Namdev	14	16	14	Ab
23	Jadhav Shubham Sanjay	15	Ab	15	14
24	Jadhav Vaishnavi Hanmant	14	14	13	15
25	Jaiswal Shivani Santosh	11	14	Ab	13
26	Kadam Dhanshri Dinkar	12	10	10	12
27	Kale Gouri Baburao	10	Ab	12	11



P. P. Swami Vivekanand Sevashram Sanstha, Shirala's
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Department of Marathi
Session 2023-24 B. A. II (Sem III, IV)
Student Unit Test Mark List

Sr.No	Student Name	Paper III		Paper IV		Paper V		Paper VI	
		Test 1	Test 2	Test 1	Test 2	Test 1	Test 2	Test 1	Test 2
1	Attar Shaharukh Samir	16	15	Ab	14	11	13	11	14
2	Bhosale Nitin Bhimrao	10	12	10	13	10	12	12	13
3	Chandane Uday Dilip	Ab	11	12	11	10	11	10	11
4	Chavan Pradip Patangrao	10	Ab	13	14	11	Ab	13	14
5	Chavan Pratiksha Prakash	12	13	14	17	12	12	14	13
6	Chavan Sanika Amrut	13	12	12	13	12	13	12	Ab
7	Chavan Sayali Uttam	14	15	10	Ab	13	14	10	14
8	Jadhav Akash Hambirrao	Ab	12	12	14	14	16	12	15
9	Jadhav Shruti Babaso	11	13	Ab	12	10	13	13	14
10	Jayswal Rutuja Rakesh	11	10	14	16	12	12	Ab	13
11	Kadam Sakshi Mahadev	12	Ab	c	14	13	14	10	14
12	Kamble Saurabh Shivaji	13	14	15	17	12	15	12	14
13	Lohar Ankita Sampat	14	15	14	13	15	Ab	10	13
14	Lohar Snehal Tanaji	12	15	12	15	12	14	12	Ab
15	Mohite Aniket Laxman	10	13	Ab	12	14	15	10	11
16	Mulla Siddik Jamir	11	14	14	15	13	17	Ab	15
17	Patel Navaj Shakil	15	15	14	14	15	Ab	14	15
18	Patil Kiran Krushna	12	17	12	15	14	13	17	14
19	Patil Omkar Mahadev	Ab	14	13	15	15	14	14	16
20	Patole Priti Hanmant	13	15	14	16	16	15	17	15
21	Pawar Shekhar Ashok	Ab	15	Ab	13	17	15	15	16
22	Pawar Vaishnavi Ekanath	15	16	14	Ab	14	16	17	15
23	Rokade Madhuri Mohan	12	14	15	14	17	Ab	14	15
24	Samindre Divyani Rajaram	14	Ab	16	15	14	14	15	17
25	Satpute Omkar Kakaso	14	15	Ab	13	11	16	13	11
26	Savairam Vaishnav Sunil	10	12	15	12	12	10	12	12
27	Shinde Sweta Vijay	Ab	17	12	11	10	Ab	11	15

(Signature)

प्राचार्य,
 विश्वासराव नाईक कला, वाणिज्य आणि
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PP. Swami Vivekanand Sevashram Sanstha, Shirala's
**VISHWASRAO NAIK ARTS, COMMERCE &
BABA NAIK SCIENCE MAHAVIDYALAYA, SHIRALA**
Tal: Shirala, Dist.: Sangli, Maharashtra - 415408



NAAC GRADE - IV

Junior College Grade - 15
Junior College No. D-22-09-001
UDISE No. 27560713220

(Affiliated to Shivaji University, Kolhapur.)

(JUNIOR/SENIOR)

EST. JUN-1970

Principal : Dr. R. B. Bansode
M.A., M.Phil., Ph.D.

28/07/2023

Notice

All the students from B.Sc-I hereby informed that UNIT TEST-I (Mechanics-I, Sem-I, Paper-I) will be held on 01/08/2023 from 11:00 pm to 11:50 am.

All the students are instructed to remain present for the sheduled test.

Dept. of Physics
Vishwasrao Naik Arts, Commerce
& Baba Naik Science Mahavidyalaya Shirala

Principal,
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Baba Naik Science Mahavidyalaya
Shirala, Dist. Sangli.



P. P. SWAMI VIVEKANAND SEVASHRAM SANSTHA SHIRALA'S

**VISHWASRAO NAIK ARTS, COMMERCE & BABA NAIK
SCIENCE MAHAVIDYALAYA, SHIRALA- 415408**

DEPARTMENT OF PHYSICS

UNIT TEST-I

Sub. Name: Mechanics-I (Sem-I, Paper-I)

Date: 01/08/2023

Time: 11:00 am to 11:50 am

Marks: 20

Q. Attempt the following.

20

1. Explain conservation theorem for linear momentum for a single particle.
2. Define the terms a) Angular velocity b) Angular momentum c) Torque.
3. Explain second order homogeneous differential equations with constant coefficients.
4. Explain conservation theorem for angular momentum for a system of particles.



Dept. of Physics
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P. P. Swami Vivekanand Shevashram sanstha's,
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MAHAVIDYALAYA, SHIRALA, TALUKA SHIRALA DIST. SANGLI.

B.Sc. I (Sem-I, Paper-I)

2023-24

RESULT

Sr. No.	Name of Students	Marks
1	ATTAR AMAN AYAJU	17
2	BANSODE JYOTI VISHWAS	16
3	BHEDASE SWAPNIL KESHAV	18
4	DESAI HARSHWARDHAN SANJAY	19
5	DUBUI E POOJA TANAJI	19
6	HAVALDAR OMKAR MAHADEV	18
7	JADHAV RUSHIKESH DILIP	16
8	JADHAV SHITAL DNYANDEV	17
9	KADAM PRANALI HANMANTRAO	20
10	KAVAR SAKSHI SHANKAR	16
11	KHOT SANGRAM KISAN	16
12	KINARE KARAN BALU	18
13	NAIK SANIKA BALIRAM	16
14	NALAWADE RUTUJA RAJARAM	18
15	PADALKAR AVIRAJ AJIT	18
16	PATIL RUTUJA SANDIP	19
17	PATIL SANGRAM SANDIP	15
18	PATIL SHIVAM RAMCHANDRA	16
19	PATIL VAISHNAVI NAMDEV	18
20	PAWAL E SURAJ NAMDEV	16
21	PAWAR SWAPNIL SURESH	Ab
22	SURYAWANSHI RUSHIKESH RAJARAM	Ab


Dept. of Physics
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Baba Naik Science Mahavidyalaya
Shirala, Dist. Sangli.

Q Attempt the following

1) Explain Conservation theorem for linear momentum for a single particle.

→ Statement :- It states that if total force $\vec{F}$ acting on particle is zero then linear momentum $\vec{P}$ of the given particle is conserved.

Proof :- Let force $\vec{F}$ acts on a particle then Accⁿ to Newton 2nd law of motion.

$$\vec{F} = \frac{d\vec{P}}{dt} \quad \text{--- (1)}$$

but $\vec{F} = 0$

eqⁿ (1) becomes

$$0 = \frac{d\vec{P}}{dt} = 0$$

$$\vec{P} = \text{Constant.}$$

$$\vec{P} = \text{Conserved}$$

Hence proved.

Q2] Define the terms

- 1] Angular velocity :- Rate of change of Angular displacement with respect to time is called Angular velocity.
- 2] Angular momentum :- Angular momentum of a particle is defined as product of position vector and its linear momentum.
- 3] Torque :- Torque is vector product of moment arm and force.

Q 3] Explain second order homogeneous differential equations with constant coefficients.

→ the general form of second order D.E is

$$\frac{d^2y}{dx^2} + p \frac{dy}{dx} + qy = x \quad \text{--- ①}$$

To make given D.E is homogeneous
put $x = 0$, then

$$\therefore \frac{d^2y}{dx^2} + p \frac{dy}{dx} + qy = 0$$

Solⁿ - the general solⁿ of second order Homogeneous D.E is $y = Ce^{mx}$ --- ②

where c and m are constant

Diff eqⁿ ② w.r.t. x

$$\frac{dy}{dx} = Ce^{mx} \times m = Cme^{mx} \quad \text{--- ③}$$

Again differentiating eqⁿ ③ we get

$$\frac{d^2y}{dx^2} = Cme^{mx} \times m = Cm^2e^{mx} \quad \text{--- ④}$$

put eqⁿ ②, ③ & ④ in eqⁿ ①

$$Cm^2e^{mx} + pCme^{mx} + qCe^{mx} = 0$$

$$Ce^{mx} [m^2 + pm + q] = 0$$

$\therefore m^2 + pm + q = 0$ Roots of above eqⁿ $m = m_1, m_2$

Case I : If roots are real & distinct [m_1, m_2]

$$y = C_1 e^{m_1 x} + C_2 e^{m_2 x}$$

where C_1 & C_2 are constant

Case II If roots are real and same [$m_1 = m_2$]

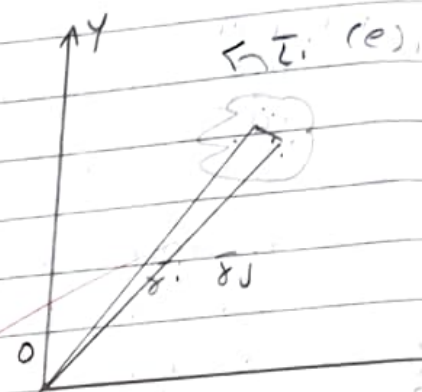
$$y = (C_1 + C_2 x) e^{mx}$$

Case III If roots are Complex [$a + ib$]

$$y = e^{ax} [C_1 \cos bx + C_2 \sin bx]$$

Q4] Explain Conservation theorem for angular momentum for a system of particles.

→ Statement: It states that if total external torque acting on system of particles is zero then total Angular momentum of the system is always constant or conserved.



the (l) of i th particle about origin 0 is given by $\vec{L}_i = \vec{r}_i \times \vec{p}_i$ - (1)

$$\sum_{i=1}^N \vec{L}_i = \sum_{i=1}^N (\vec{r}_i \times \vec{p}_i)$$

$$\therefore \vec{L} = \sum_{i=1}^N (\vec{r}_i \times \vec{p}_i) - (2)$$

$$\frac{d\vec{L}}{dt} = \sum_{i=1}^N \left[\vec{r}_i \times \frac{d\vec{p}_i}{dt} \right] - (3)$$

$$\vec{F}_i(e) + \sum_{j=1}^N \vec{F}_{ij} = \frac{d\vec{p}_i}{dt} - (4)$$

$$\sum_{i=1}^N \vec{F}_i(e) + \sum_{i,j} \vec{F}_{ij} = \sum_{i=1}^N \frac{d\vec{p}_i}{dt} - (5)$$

$$\vec{L}(e) = \sum_{i=1}^N \left(\vec{r}_i \times \frac{d\vec{p}_i}{dt} \right) - (6)$$

Compare eqⁿ (3) and (6)

$$\frac{d\vec{L}}{dt} = \vec{L}(e)$$

Since $\vec{L}(e) = 0$

$$\frac{d\vec{L}}{dt} = 0$$

$\vec{L} = \text{constant}$

$\vec{L} = \text{conserved}$

Hence proved.



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NAAC - GRADUATE

Autonomous College Code: 15
Autonomous College No: 22-09-001
UPEU No: 22/04/15220

(Affiliated to Savitribai University, Kolhapur)

(JUNIOR/SENIOR)

EST: JUN 1970

Principal: Dr. R. B. Bansode
M.A., M.Phil., Ph.D.

Website: www.vnsma-shirala.org

09/10/2023

Notice

All the students from B.Sc-I hereby informed that UNIT TEST-II (Mechanics-II, Sem-I, Paper-II) will be held on 11/10/2023 from 11:00 am to 11:50 am.

All the students are instructed to remain present for the scheduled test.

Dept. of Physics
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Shirala, Dist. Sangli.



P. P. SWAMI VIVEKANAND SEVASHRAM SANSTHA SHIRALA'S

VISHWASRAO NAIK ARTS, COMMERCE & BABA NAIK
SCIENCE MAHAVIDYALAYA, SHIRALA- 415408

DEPARTMENT OF PHYSICS

UNIT TEST-II

Sub. Name: Mechanics-II (Sem-I, Paper-II)

Date: 11/10/2023

Time: 11:00 am to 11:50 am

Marks: 20

20

Q. Attempt the following.

- 1) Derive differential equation of SHM & its solution.
- 2) Explain Angle of contact & Wettability.
- 3) Explain determination of Young's modulus, Bulk modulus & Modulus of rigidity.
- 4) Explain molecular theory of surface tension.


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MAHAVIDYALAYA, SHIRALA, TALUKA SHIRALA DIST. SANGLI.

B.Sc. I (Sem-I, Paper-II)

2023-24

RESULT

Sr. No.	Name of Students	Marks
1	ATTAR AMAN AYAJU	17
2	BANSODE JYOTI VISHWAS	16
3	BHEDASE SWAPNIL KESHAV	Ab
4	DESAI HARSHWARDHAN SANJAY	16
5	DUBULE POOJA TANAJI	18
6	HAVALDAR OMKAR MAHADEV	15
7	JADHAV RUSHIKESH DILIP	17
8	JADHAV SHITAL DNYANDEV	15
9	KADAM PRANALI HANMANTRAO	20
10	KAVAR SAKSHI SHANKAR	15
11	KHOT SANGRAM KISAN	16
12	KINARE KARAN BALU	17
13	NAIK SANIKA BALIRAM	16
14	NALAWADE RUTUJA RAJARAM	18
15	PADALKAR AVIRAJ AJIT	18
16	PATIL RUTUJA SANDIP	18
17	PATIL SANGRAM SANDIP	18
18	PATIL SHIVAM RAMCHANDRA	16
19	PATIL VAISHNAVI NAMDEV	18
20	PAWALE SURAJ NAMDEV	19
21	PAWAR SWAPNIL SURESH	Ab
22	SURYAWANSHI RUSHIKESH RAJARAM	Ab


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Q1

Derive differential eqn of SHM and its solution

*

Differential eqn of SHM

We know that $F \propto -x$ i.e. $F = -kx$
Accn to Newton's 2nd law of motion

$$F = ma \quad (1)$$

on comparing eqn (1) & (2) we get

$$ma = -\frac{d^2x}{dt^2} \quad (2)$$

$$m \frac{d^2x}{dt^2} = -kx$$

$$\frac{d^2x}{dt^2} + \omega^2 x = 0 \quad (3)$$

soln of SHM

$$C \frac{d}{dt} \left(\frac{dx}{dt} \right)^2 + \omega^2 \frac{d}{dt} (x^2) = 0 \quad (4)$$

$$\left(\frac{dx}{dt} \right)^2 + \omega^2 x^2 = C \quad (5)$$

$$C \omega^2 a^2 = C \quad (6)$$

put eqn (6) in eqn (5)

$$\left(\frac{dx}{dt} \right)^2 = \omega^2 (a^2 - x^2)$$

By variable Separable
from

$$\frac{dx}{\sqrt{a^2 - x^2}}$$

on Integrating

$$\int \frac{dx}{\sqrt{a^2 - x^2}} = \int \omega \cdot dt$$

on integration

$$\frac{dx}{\sqrt{a^2 - x^2}} = \sin(x/a)$$

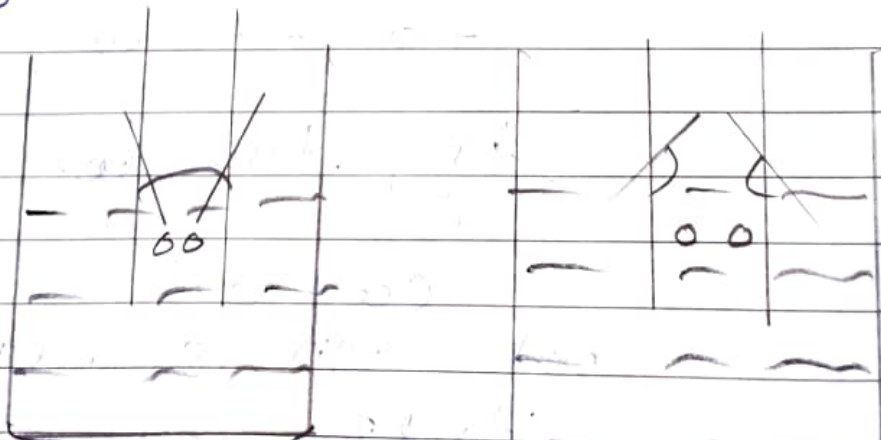
$$\sin^{-1} (x/a) = \omega t + \phi$$

$$x/a = \sin (\omega t + \phi)$$

$$x = a \sin (\omega t + \phi)$$

This required Soln of SHM

Q2 Explain Angle of contact
→ angle of contact



The angle of contact between a liquid and solid surface is defined as when tangent drawn to the free surface of the liquid and

- Q3 Explain the determination of
- a) Young's modulus (Y)
 - b) Bulk's modulus
 - c) Modulus of rigidity (n)

a) Young's modulus (Y) It is defined as the ratio of longitudinal stress to the

$$Y = \frac{\text{Longitudinal stress}}{\text{Longitudinal strain}}$$

Since longitudinal stress

b) Bulk's modulus - It is defined as the ratio of volume stress - (1)
Since vol^m stress P/A - (2)

Strain = change in vol^m

$$\text{vol^m strain} = \frac{-\Delta V}{V} \quad \text{--- (3)}$$



Vishwasrao Naik Arts, Commerce & Baba Naik Science Mahavidyalaya, Shirala
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NAME: _____

(Affiliated to Shivaji University, Kolhapur.)
(JUNIOR/SENIOR)

EST: JUN-1970

Page No. _____
Date: 13/12/2023

Principal: Dr. R. B. Bansode
M.A., M.Phil., Ph.D.

13/12/2023

Notice

All the students from B.Sc-I hereby informed that UNIT TEST-III (Electricity & Magnetism-I, Sem-II, Paper-III) will be held on 15/12/2023 from 01:00 pm to 1:50 pm.

All the students are instructed to remain present for the sheduled test.


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DEPARTMENT OF PHYSICS

UNIT TEST-III

Sub. Name: Electricity & Magnetism-I (Sem-II, Paper-III)

Date: 15/12/2023

Time: 1:10 pm to 1:50 pm

Marks: 20

Q.1) (a) Explain about electric dipole.

05

(b) Write a short note on polarization vector.

05

Q.2) Explain Gradient of scalar field, Divergence & Curl of a vector fields & also write their physical significance.

10



Dept. of Physics

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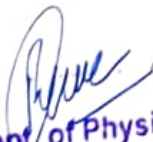
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MAHAVIDYALAYA, SHIRALA, TALUKA SHIRALA DIST. SANGLI.**

B.Sc-I (Sem-II, Paper-III)

2023-24

RESULT

Sr. No.	Name of Students	Marks
1	ATTAR AMAN AYAJU	14
2	BANSODE JYOTI VISHWAS	15
3	BHEDASE SWAPNIL KESHAV	16
4	DESAI HARSHWARDHAN SANJAY	14
5	DUBULE POOJA TANAJI	17
6	HAVALDAR OMKAR MAHADEV	18
7	JADHAV RUSHIKESH DILIP	18
8	JADHAV SHITAL DNYANDEV	Ab
9	KADAM PRANALI HANMANTRAO	20
10	KAVAR SAKSHI SHANKAR	16
11	KHOT SANGRAM KISAN	18
12	KINARE KARAN BALU	15
13	NAIK SANIKA BALIRAM	16
14	NALAWADE RUTUJA RAJARAM	Ab
15	PADALKAR AVIRAJ AJIT	14
16	PATIL RUTUJA SANDIP	16
17	PATIL SANGRAM SANDIP	16
18	PATIL SHIVAM RAMCHANDRA	16
19	PATIL VAISHNAVI NAMDEV	15
20	PAWALE SURAJ NAMDEV	16
21	PAWAR SWAPNIL SURESH	Ab
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VISHWASRAJ KAIK MANAVID MALAYALA

Name Aviraj Ajit Padalkar Page No.

Rm: V Tie No. Date 15/11/2023

Class BSC T Test No. III Subject Physics

16
20

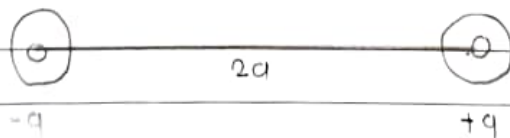
Q.4 a] Explain about electric dipole.

→ An electric dipole is defined as a couple of opposite charges $+q$ & $-q$ separated by a distance r . By default the direction of electric dipole's in space is always from negative charge $-q$ to positive charge $+q$.

• The midpoint of $+q$ and $-q$ is called centre of the dipole. The simplest example of electric dipole is a pair of electric charges of two opposite signs & equal magnitude separated by distance.

• Suppose there are two charges of equal magnitude $+q$ separated by a distance $2a$.

• Let the first charge be negative & second charge is positive. This combination can be called an electric dipole.



• An electric dipole is denoted by the symbol $'p'$

• We know that electric dipole is product of the magnitude of charges multiplied by the distance between them & this can be mathematically represented as follows

$$p = 2aq \quad \because q = \text{product of two charges}$$

• Electric dipole moment is a vector quantity

b] write a short note on polarization vector
→ The term electric polarization vector is related with the electromagnetism phenomenon of the physics. It means that the vector field that denotes the dipole moment of every single dielectric material with is using in the electromagnetic field or using simply as the electricity conductor.

The article later elucidates the concept further with tangible real-world examples demonstrating its implications in our daily lives and providing a critical analysis for better comprehension. Immerse yourself in this enlightening exploration of the polarization vector's role, function and impact in physics.

Q.2 Explain Gradient of scalar field divergence & Curl of a vector field also write their Physical significance

* → Gradient of scalar field

- In mathematics and physical the gradient and del the operator are fundamental concept used to describe the behavior of functions and fields in space.

- The gradient is mathematical operator that gives both magnitude and direction.

- Gradient = $\text{Grad } \phi = \nabla \phi$

$$\Delta \phi = \left(\frac{\partial}{\partial x} i + \frac{\partial}{\partial y} j + \frac{\partial}{\partial z} k \right) \phi$$

→ divergence of vector field

- The divergence of vector field is simply measures how much the flow is expanding at given point divergence = $\left[\frac{\partial}{\partial x} i + \frac{\partial}{\partial y} j + \frac{\partial}{\partial z} k \right] \cdot$

- divergence measure the tendency of fluid to collect or disperse at a point.

- The physical significance of divergence is the indication of spread of vector from a particular point. For e.g. the flow of water from the faucet.

* Curl of vector field.

- The Curl of vector field allows us to measure the rotation of vector field. The resulting value of vector curl can tell us whether the vector field represents the rotation at point.

The Curl of vector field captures the idea of how a fluid may rotate.

The curl of vector field is equal to zero when the vector field is irrotational or conservative.

- Curl is used to measure the rotational part of the field about a particular point.



VISHWASRAO NAIK ARTS, COMMERCE &
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(JUNIOR/SENIOR)

EST. JUN-1970

Principal: Dr. R. B. Bansode
M.A., M.Phil., Ph.D.

07/02/2024

Notice

All the students from B.Sc-I hereby informed that UNIT TEST-IV (Electricity & Magnetism-II, Sem-II, Paper-IV) will be held on 09/02/2024 from 01:00 pm to 1:50 pm.

All the students are instructed to remain present for the sheduled test.

Dept. of Physics
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Shirala, Dist. Sangli.



**VISHWASRAO NAIK ARTS, COMMERCE & BABA NAIK
SCIENCE MAHAVIDYALAYA, SHIRALA- 415408**

DEPARTMENT OF PHYSICS

UNIT TEST-IV

Sub. Name: Electricity & Magnetism-II (Sem-II, Paper-IV)

Date: 09/02/2024

Time: 1:10 pm to 1:50 pm

Marks: 20

Q.1) Select the correct alternatives from the following. 05

- 1) What is the net electrostatic field in the interior of a conductor?
a) Positive b) Negative c) Zero d) Depends on the nature of the conductor
2. What is the electric field in the cavity of a hollow charged conductor?
a) Positive b) Negative c) Zero d) Depends on the nature of the conductor
3. How is the electric field at the surface of a charged conductor related to the surface charge density?
a) Proportional to each other b) Indirectly proportional
c) Independent d) Exponential
4. How is the potential within and on the surface of a conductor?
a) Indirectly proportional b) Directly proportional
c) Zero d) Constant
5. What is the total work done on moving a test charge on an equipotential surface?
a) Maximum b) Minimum c) Constant d) Zero

Q. 2) Attempt the following questions. 15

- 1) State & Explain Biot-Savart's law.
- 2) Explain Faraday's laws of electromagnetic induction.
- 3) Explain resonance in series LCR circuits.




Dept. of Physics
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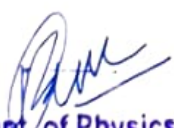
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VISHWASRAO NAIK ARTS, COMMERCE & BABA NAIK SCIENCE
MAHAVIDYALAYA, SHIRALA, TALUKA SHIRALA DIST. SANGLI.

B.Sc-I (Sem-II, Paper-IV)

2023-24

RESULT

Sr. No.	Name of Students	Marks
1	ATTAR AMAN AYAJI	13
2	BANSODE JYOTI VISHWAS	14
3	BHEDASE SWAPNIL KESHAV	16
4	DESAI HARSHWARDHAN SANJAY	18
5	DUBULE POOJA TANAJI	19
6	HAVALDAR OMKAR MAHADEV	Ab
7	JADHAV RUSHIKESH DILIP	16
8	JADHAV SHITAL DNYANDEV	14
9	KADAM PRANALI HANMANTRAO	19
10	KAVAR SAKSHI SHANKAR	17
11	KHOT SANGRAM KISAN	17
12	KINARE KARAN BALU	18
13	NAIK SNIKA BALIRAM	16
14	NALWADE RUTUJA RAJARAM	17
15	PADALKAR AVIRAJ AJIT	16
16	PATIL RUTUJA SANDIP	16
17	PATIL SANGRAM SANDIP	17
18	PATIL SHIVAM RAMCHANDRA	16
19	PATIL VAISHNAVI NAMDEV	16
20	PAWALE SURAJ NAMDEV	18
21	PAWAR SWAPNIL SURESH	Ab
22	SURYAWANSHI RUSHIKESH RAJARAM	Ab


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Shirala, Dist. Sangli.

Sub Name - Electricity and magnetism - II [Sem - II, paper IV]

Q.1. Select the correct alternatives from the following:

1. What is the net electrostatic field in the interior of a conductor?
→ c) Zero.
2. What is the electric field in the cavity of a hollow charged conductor?
→ c) Zero.
3. How is the electric field at the surface of a charged conductor related to the surface charge density?
→ a) Proportional to each other.
4. How is the potential within and on the surface of a conductor related?
→ d) constant.
5. What is the total work done on moving a test charge on an equipotential surface?
→ d) zero.

Q. 2. Attempt the following questions:

1. State and explain Biot-Savart's law.

→ Let $\vec{r}$ be position vector of point P from the current element Idl and θ be the angle between length element ' dl ' and ' $\vec{r}$ '. According to Biot Savart's law, the magnitude of magnetic field induction dB at point P due to small current element depends upon following factors.

i] $dB \propto I$

ii] $dB \propto dl$

iii] $dB \propto \frac{1}{r^2}$

iv] $dB \propto \sin\theta$.

Combining 1 to 4 we get

$$dB \propto \frac{Idl \sin\theta}{r^2}$$

$$dB = k \frac{Idl \sin\theta}{r^2} \quad \text{--- ①}$$

where k is constant of proportionality.

$$k = \frac{\mu_0}{4\pi} = 10^{-7} \text{ Tm/A or TmA}^{-1}$$

Then eqⁿ ① becomes.

$$dB = \frac{\mu_0}{4\pi} \frac{Idl \sin\theta}{r^2} \quad \text{--- ②}$$

where μ_0 = permeability of free space

$$dB = \frac{\mu_0 I}{4\pi} \frac{dl \sin\theta \times r}{r^2 \times r}$$

$$dB = \frac{\mu_0 I}{4\pi} \cdot \frac{dl \sin\theta}{r^3} \quad \text{--- ③}$$

In vector form

$$\vec{dB} = \frac{\mu_0 I}{4\pi} \frac{(d\vec{l} \times \vec{r})}{r^3} \hat{\gamma} \quad \text{--- ④}$$

2] Explain Faraday's law of electromagnetic induction.

→ Faraday's law of induction is a law of electromagnetism predicting how a magnetic field will interact with an electric circuit to produce an electromotive force (emf). This phenomenon known as electromagnetic induction, is fundamental operating principle of transformers, inductors, and many types of electric motors, generators and solenoids. Faraday's law had been discovered and one aspect of it was formulated as the Maxwell-Faraday equation later. The equation of Faraday's law can be derived by Maxwell's Faraday equation and the Lorentz Force.

1] Faraday's First law - The changing magnetic field linked with conductor induces an electromotive force in the conductor.

2] Faraday's Second law - The induced electromotive force is proportional to the rate of change of magnetic field linked with the conductor.

Q. 8 Explain resonance in series LCR circuits.

- • The circuit that allows the highest amount of current at specific frequency of the alternating current is known as a series resonance circuit or resonance LCR circuit.
- As the inductor, capacitor and the resistor are all connected in series, the same amount of current will flow through them.
 - Resistance can reduce alternating current (AC) as well as direct current (DC).
 - Inductance can reduce AC but not DC. Moreover, capacitance blocks DC but allows AC current to pass through.
 - Resonance occurs when the value of inductive and capacitive reactances have equal magnitude but a phase difference of 180° .
 - In this condition, they cancel each other. This is known as the resonance frequency of series LCR circuit. Thus the circuit is a resonance LCR circuit.
 - According to the definition of resonance in LCR circuit LCR circuit consists of an Inductor L , a capacitor and inductor are connected in series, this implies the same amount of current will flow through each of the components.
 - Moreover, capacitance blocks AC but not DC allow AC current to pass through.
- Furthermore, through resistance inductance, and capacitance AC is in phase with alternating voltage, lags it by phase angle of 90° and leads it by an phase angle of 90° degree respectively.



Vishwasrao Naik Arts, Commerce & Baba Naik Science Mahavidyalaya, Shirala
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EST: JUN-1970

Principal: Dr. R. B. Bansode
 M.A., M.Phil., Ph.D.

V.A.M. SHIRALA

Principal: Dr. R. B. Bansode
 M.A., M.Phil., Ph.D.

Website: www.vnschirala.org

28/07/2023

Notice

All the students from B.Sc-II hereby informed that UNIT TEST-I (Thermal Physics & Statistical Mechanics-I, Sem-III, Paper-V) will be held on 01/08/2023 from 11:00 am to 11:50 am.

All the students are instructed to remain present for the sheduled test.

Dept. of Physics
 Vishwasrao Naik Arts, Commerce
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**VISHWASRAO NAIK ARTS, COMMERCE & BABA NAIK
SCIENCE MAHAVIDYALAYA, SHIRALA- 415408**

DEPARTMENT OF PHYSICS

UNIT TEST-I

Sub. Name: Thermal Physics & Statistical Mechanics-I (Sem-III, Paper-V)

Date: 01/08/2023

Time: 11:00 am to 11:50 am

Marks: 20

Q. Attempt the following.

20

- 1) Explain about Platinum resistance thermometer.
- 2) Explain working & efficiency of Carnot's cycle.
- 3) Explain Mayer's relation.
- 4) State & prove first law of thermodynamics.



Dept. of Physics
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SHIRALA DIST. SANGLI.**

B.Sc. II (Sem-III, Paper-V)

2023-24

RESULT

Sr. No.	Name of Students	Marks
1	PATIL SANJANA BAJIRAO	17
2	KAMBLE ABHISHEK DADU	17
3	PATIL PRATIK BABASO	18
4	JADHAV PARAS SANJAY	16
5	JANWADKAR SANIKA RAMCHANDRA	15
6	KHOT SHRUTIKA SUNIL	18
7	LOHAR AVISHIKAR CHANDRAKANT	16
8	PATIL RITESH ABASO	17
9	PATIL RAHUL VISHNU	Ab
10	PATIL RENUKA SOPAN	Ab
11	PATIL SUMIT BAJIRAO	14
12	SATHE ARJUN HARIBA	15
13	SHIVJATAK NIRANJAN VISHVNAATH	16
14	KILANDEKAR PRANAV MANSING	17
15	PATIL RUTUJA	18


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Tal. Sangli, Dist. Sangli, Maharashtra - 415408



NAAC GRANT - B

(Affiliated to Shivaj University, Kolhapur)

EST: JUN-1970

Principal: Dr. R. B. Bansode
B.A., M.Phil., Ph.D.

(JUNIOR/SENIOR)

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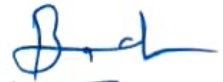
Notice

All the students from B.Sc-II hereby informed that UNIT TEST-II (Waves & Optics-I, Sem-III, Paper-VI) will be held on 11/10/2023 from 11:00 am to 11:50 am.

All the students are instructed to remain present for the sheduled test.



Dept. of Physics
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Shirala, Dist. Sangli.



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SCIENCE MAHAVIDYALAYA, SHIRALA- 415408

DEPARTMENT OF PHYSICS

UNIT TEST-II

Sub. Name: Waves & Optics-I (Sem-III, Paper-VI)

Date: 11/10/2023

Time: 1:10 pm to 1:50 pm

Marks: 20

20

Q. Attempt the following.

- 1) Explain superposition of two collinear harmonic oscillations for equal frequencies (Analytical method).
- 2) Explain about Lissajous figures.
- 3) Explain energy transfer in coupled oscillatory system.
- 4) Explain about Piezo-electric effect.

Dept. of Physics

Vishwasrao Naik Arts, Commerce
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SCIENCE MAHAVIDYALAYA, SHIRALA, TALUKA
SHIRALA DIST. SANGLI.**

B.Sc. II (Sem-III, Paper-VI)

2023-24

RESULT

Sr. No.	Name of Students	Marks
1	PATIL SANJANA BAJIRAO	15
2	KAMBLE ABHISHEK DADU	16
3	PATIL PRATIK BABASO	17
4	JADHAV PARAS SANJAY	Ab
5	JANWADKAR SANIKA RAMCHANDRA	Ab
6	KHOT SHRUTIKA SUNIL	14
7	LOHAR AVISHKAR CHANDRAKANT	16
8	PATIL RITESH ABASO	17
9	PATIL RAHUL VISHNU	18
10	PATIL RENUKA SOPAN	19
11	PATIL SUMIT BAJIRAO	16
12	SATHE ARJUN HARIBA	17
13	SHIVJATAK NIRANJAN VISHVYNATH	Ab
14	KHANDEKAR PRANAV MANSING	15
15	PATIL RUTUJA	Ab


Dept. of Physics
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Principal,
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Baba Naik Science Mahavidyalaya
Shirala, Dist. Sangli.





Vishwasrao Naik Arts, Commerce & Baba Naik Science Mahavidyalaya, Shirala's
**VISHWASRAO NAIK ARTS, COMMERCE &
BABA NAIK SCIENCE MAHAVIDYALAYA, SHIRALA**
Tal. Shirala, Dist. Sangli, Maharashtra - 415408



NAIK GRADE - II

Principal: Dr. R. B. Bansode
Page No. 22/09/2023
Date: 22/09/2023

(Affiliated to Shivaji University, Kolhapur)

(JUNIOR/SENIOR)

EST: JUN-1970

Principal: Dr. R. B. Bansode
M.A., M.Phil., Ph.D.

13/12/2023

13/12/2023

Notice

All the students from B.Sc-II hereby informed that UNIT TEST-III (Thermal Physics & Statistical Mechanics-II, Sem-IV, Paper-VII) will be held on 15/12/2023 from 01:00 pm to 1:50 pm.

All the students are instructed to remain present for the sheduled test.

Dept. of Physics
Vishwasrao Naik Arts, Commerce
& Baba Naik Science Mahavidyalaya Shirala

Principal,
Vishwasrao Naik Arts, Com. &
Baba Naik Science Mahavidyalaya
Shirala, Dist. Sangli.



P. P. SWAMI VIVEKANAND SEVASHRAM SANSTHA SHIRALA'S

**VISHWASRAO NAIK ARTS, COMMERCE & BABA NAIK
SCIENCE MAHAVIDYALAYA, SHIRALA- 415408**

DEPARTMENT OF PHYSICS

UNIT TEST-III

Sub. Name: Thermal Physics & Statistical Mechanics-II (Sem-IV, Paper-VII)

Date: 15/12/2023

Time: 1:00 pm to 1:50 pm

Marks: 15

Q. Attempt the following questions.

15

- 1) Explain Joule-Thomson effect.
- 2) Explain comparison between MB, BE & FD distribution law.
- 3) Explain distribution of molecular speed.

Dept. of Physics
Vishwasrao Naik Arts, Commerce
& Baba Naik Science Mahavidyalaya Shirala



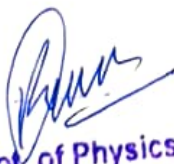
**P. P. Swami Vivekanand Shevashram sanstha's,
VISHWASRAO NAIK ARTS, COMMERCE & BABA NAIK
SCIENCE MAHAVIDYALAYA, SHIRALA, TALUKA
SHIRALA DIST. SANGLI.**

B.Sc. II (Sem-IV, Paper-VII)

2023-24

RESULT

Sr. No.	Name of Students	Marks
1	PATIL SANJANA BAJIRAO	12
2	KAMBLE ABHISHEK DADU	13
3	PATIL PRATIK BABASO	12
4	JADHAV PARAS SANJAY	14
5	JANWADKAR SANIKA RAMCHANDRA	Ab
6	KHOT SHRUTIKA SUNIL	Ab
7	LOHAR AVISHKAR CHANDRAKANT	13
8	PATIL RITESH ABASO	12
9	PATIL RAHUL VISHNU	14
10	PATIL RENUKA SOPAN	15
11	PATIL SUMIT BAJIRAO	13
12	SATHE ARJUN HARIBA	Ab
13	SHIVJATAK NIRANJAN VISHVNATH	13
14	KHANDEKAR PRANAV MANSING	14
15	PATIL RUTUJA	Ab


Dept. of Physics
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& Baba Naik Science Mahavidyalaya Shirala


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Baba Naik Science Mahavidyalaya
Shirala, Dist. Sangli.





Vishwasrao Naik Arts, Commerce & Baba Naik Science Mahavidyalaya, Shirala
Tal: Shirala, Dist: Sangli, Maharashtra - 415408



NAI-0000000000

EST: JUN-1970
Principal: Dr. R. B. Bansode
M.A., M.Phil., Ph.D.

(B.A. Honors to Shri. University, Kolhapur)
(JUNIOR/SENIOR)

EST: JUN-1970

Principal: Dr. R. B. Bansode
M.A., M.Phil., Ph.D.

07/02/2024

Notice

All the students from B.Sc-II hereby informed that UNIT TEST-IV (Waves & Optics-II, Sem-IV, Paper-VIII) will be held on 09/02/2024 from 01:00 pm to 1:50 pm.

All the students are instructed to remain present for the sheduled test.

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**VISHWASRAO NAIK ARTS, COMMERCE & BABA NAIK
SCIENCE MAHAVIDYALAYA, SHIRALA- 415408**

DEPARTMENT OF PHYSICS

UNIT TEST-IV

Sub. Name: Waves & Optics-II (Sem-IV, Paper-VIII)

Date: 09/02/2024

Time: 1:00 pm to 1:50 pm

Marks: 20

Q.1) (a) Explain frequencies of coupled oscillatory system.

05

(b) Explain viscosity of liquid by rotating cylinder method.

05

Q.2) Explain superposition of two perpendicular harmonic oscillations.

(10)

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NAIK SCIENCE MAHAVIDYALAYA, SHIRALA,
TALUKA SHIRALA DIST. SANGLI.**

B.Sc. II (Sem-IV, Paper-VIII)

2023-24

RESULT

Sr. No.	Name of Students	Marks
1	PATIL SANJANA BAJIRAO	12
2	KAMBLE ABHISHEK DADU	13
3	PATIL PRATIK BABASO	14
4	JADHAV PARAS SANJAY	12
5	JANWADKAR SANIKA RAMCHANDRA	Ab
6	KHOT SHRUTIKA SUNIL	12
7	LOHAR AVISHKAR CHANDRAKANT	13
8	PATIL RITESH ABASO	Ab
9	PATIL RAHUL VISHNU	13
10	PATIL RENUKA SOPAN	12
11	PATIL SUMIT BAJIRAO	13
12	SATHE ARJUN HARIBA	14
13	SHIVJATAK NIRANJAN VISHVNATH	12
14	KHANDEKAR PRANAV MANSING	Ab
15	PATIL RUTUJA	12


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Baba Naik Science Mahavidyalaya
Shirala, Dist. Sangli.





VISHWASRAO NAIK ARTS, COMMERCE &
BABA NAIK SCIENCE MAHAVIDYALAYA, SHIRALA
Shirala, Dist. Sangli, Maharashtra - 415408



SHIRALA - 11

(Affiliated to Savitribai Phule Sanshodhan Sanstha, Kolhapur)

EST: JUN-1970

Principal: Dr. R. B. Bansode

Principal: Dr. R. B. Bansode

M.A., M.Phil., Ph.D.

Phone No. 2225444

Mobile No. 94213220

1923/24

www.vishwasrao.com www.babanaikshirala.com

05/10/2023

Notice

All the students of B.Sc. I (Sem-I) are directed to collect question papers of Home Assignment & submit the answers scripts to the concerned teachers within a month.

It is mandatory to all, failing which the students will not be allowed to appear in final examination.

Dept. of Physics
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DEPARTMENT OF PHYSICS

HOME ASSIGNMENT

B.Sc-I (SEM-I) paper-I (DSC-A1)

Mechanics - I

(2023-24)

Marks: 10

Q.1) Attempt the following questions.

05

A) Explain first order homogeneous differential equation & Give its examples.

02

B) Explain second order homogeneous equation with constant coefficient.

03

Q.2) Explain conservation theorem for angular momentum of a single particle & system of particles.

05


Dept. of Physics

Vishwasrao Naik Arts, Commerce
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Physics

Home Assignment

TEJ
DATE / /

Name :- Pawale Suraj Namdev
Class :- B.Sc (I)

Paper - I (DSC - A1)

Mechanics - I

Q.1

A) Explain first order homogeneous differential eqⁿ and give its examples.

→ The first order differential eqⁿ is homogeneous which takes form $\frac{dy}{dx} = f\left(\frac{y}{x}\right)$

— (1)

where $f\left(\frac{y}{x}\right)$ is homogeneous funⁿ.

Homogeneous differential eqⁿ can be solve by substitution method.

$v = \frac{y}{x}$, where v is funⁿ of x

$$y = vx$$

Equation (1) becomes,

$$v + x \frac{dv}{dx} = f(v)$$

By variable separable

$$x \frac{dv}{dx} = f(v) - v$$

$$\frac{dv}{f(v) - v} = \frac{dx}{x}$$

By integrating, we get

$$\int \frac{dv}{f(v) - v} = \int \frac{dx}{x} + C$$

$$\frac{dy}{dx} = y^2 \quad \text{--- (2)}$$

$$\text{put } y/x = v$$

$$y = vx$$

Differentiating with x

$$\frac{dy}{dx} = v + x \frac{dv}{dx} \quad \text{--- (3)}$$

Eqⁿ (2) becomes

$$v + x \frac{dv}{dx} = \frac{(vx)^2}{x(vx) - x^2}$$

$$v + x \frac{dv}{dx} = \frac{v^2 x^2}{vx^2 - x^2}$$

$$v + x \frac{dv}{dx} = \frac{v^2 x^2}{x^2(v-1)}$$

$$v + x \frac{dv}{dx} = \frac{v^2}{(v-1)}$$

$$x \cdot \frac{dv}{dx} = \frac{v^2}{v-1} - v$$

$$x \cdot \frac{dv}{dx} = \frac{v^2 - v(v-1)}{(v-1)}$$

$$x \cdot \frac{dv}{dx} = \frac{v^2 - v^2 + v}{v-1}$$

$$x \cdot \frac{dv}{dx} = \frac{v}{v-1}$$

$$\frac{(v-1)}{v} \cdot dv = \frac{dx}{x}$$

$$\left(\frac{v}{v} - \frac{1}{v} \right) dv = \frac{dx}{x}$$

$$\left(1 + \frac{1}{v} \right) dv = \frac{dx}{x}$$

On Integrating,

$$\int \left(1 + \frac{1}{v} \right) dv = \int \frac{dx}{x}$$

$$\int \frac{1}{v} \cdot dv = \int \frac{dx}{x}$$

$$v - \log v = \log x + \log C$$

$$v - \log v = \log x + C$$

$$v = \log v + \log (x C)$$

$$v = \log (v x C)$$

$$\frac{y}{x} = \log \left(\frac{y}{x} x C \right)$$

$$\frac{y}{x} = \log (y C)$$

$$y = x \log (y C)$$

2.1 B) Explain second order homogeneous differential eqⁿ with constant coefficient

→ The general form of second order Differential Eqⁿs is $\frac{d^2 y}{dx^2} + P \frac{dy}{dx} + Q y = X$ — (1)

P, Q are constants

X is funⁿ of x

To make given differential eqⁿ homogeneous put $X = 0$; then

$$\therefore \frac{d^2 y}{dx^2} + P \frac{dy}{dx} + Q y = 0$$

The general solⁿ of Second order homogeneous differential eqⁿ is

$$y = C e^{mx} \text{ — (2)}$$

where C and m are constant.

Differentiating eqⁿ ② with respect to x

$$\frac{dy}{dx} = c e^{mx} \cdot m$$

$$= c m e^{mx} \quad \text{--- ③}$$

Again differentiating eqⁿ ③ we get,

$$\frac{d^2y}{dx^2} = c m e^{mx} \cdot m$$

$$= c m^2 \cdot e^{mx} \quad \text{--- ④}$$

put eqⁿ ②, ③ & ④ in eqⁿ ①

$$c m^2 e^{mx} + P c m e^{mx} + Q c e^{mx} = 0$$

$$c e^{mx} [m^2 + P m + Q] = 0$$

$$\therefore m^2 + P m + Q = 0$$

Roots of above eqⁿ

$$m = m_1 \text{ and } m_2$$

Case I :- If roots are real and distinct

$$[m_1 \text{ and } m_2]$$

$$y = c_1 e^{m_1 x} + c_2 e^{m_2 x}$$

where c_1 and c_2 are constant.

Case II :- If roots are real and same

$$[m_1 = m_2]$$

$$y = (c_1 + c_2 x) e^{mx}$$

Case III :-

If roots are complex $[a + ib]$

$$y = e^{ax} [c_1 \cos bx + c_2 \sin bx]$$

Example

of second order Homogeneous
D.E is $\frac{d^2y}{dx^2} + 3 \frac{dy}{dx} + 5y = \sin x$

Q.2 Explain conservation theorem for angular momentum of a single particle and system of particles.

→ a] conservation theorem for angular momentum of single particle.

statement - It states that if total torque ($\vec{\tau}$) acting on particle is zero then angular momentum ($\vec{L}$) of the given particle is conserved.

Let us consider a particle of mass m at point Q rotating about fixed pt. Let $\vec{r}$ be position vector of particle about point O .

Let $\vec{p}$ be the linear momentum of particle about point O . then Angular momentum $\vec{L}$ of particle is given by

$$\therefore \vec{L} = \vec{r} \times \vec{p} \quad \text{--- (1)}$$

Torque acting on particle is given by,

$$\vec{\tau} = \vec{r} \times \vec{F} \quad \text{--- (2)}$$

But $\vec{F} = \frac{d\vec{p}}{dt}$ [Accⁿ to Newton 2nd law]

Eqⁿ (2) becomes

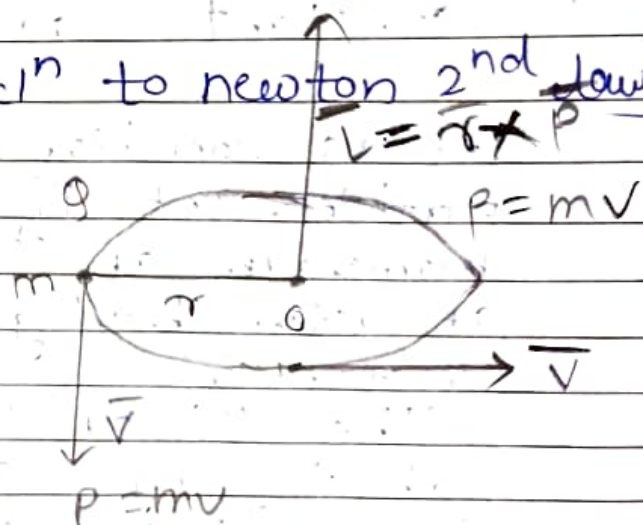
$$\vec{\tau} = \vec{r} \times \frac{d\vec{p}}{dt}$$

$$\vec{\tau} = \frac{d}{dt} (\vec{r} \times \vec{p})$$

$$\vec{\tau} = \vec{r} \times \frac{d\vec{p}}{dt} + \vec{p} \times \frac{d\vec{r}}{dt}$$

$$\left[\text{Since } \frac{d\vec{r}}{dt} = \vec{v}, \vec{p} = m\vec{v} \right]$$

$$\vec{\tau} = \vec{r} \times \frac{d\vec{p}}{dt} + m\vec{v} \times \vec{v}$$



$$\vec{L} = \frac{d\vec{p}}{dt} (\vec{r} \times \vec{p}) \quad [\because \vec{L} = \vec{r} \times \vec{p}]$$

$$\vec{L} = \frac{d\vec{L}}{dt} \quad \text{--- (3)}$$

Since $\vec{L}_i = 0$

$$0 = \frac{d\vec{L}}{dt}$$

$$\frac{d\vec{L}}{dt} = 0$$

$\vec{L} = \text{constant}$

$\vec{L} = \text{conserved}$

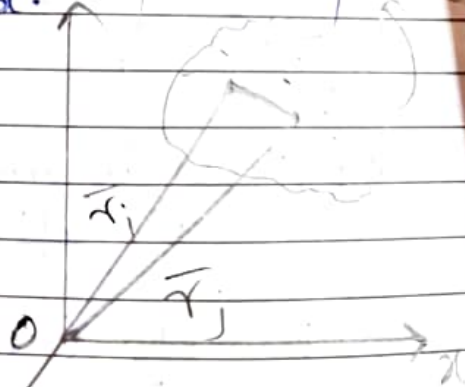
Hence proved.

b] conservation Theorem for angular momentum of system of particles:

statement:- It states that if total external Torque acting on system of particles is Zero, then total Angular momentum of the system is always constant or conserved.

Let us consider system of particles. Let $\vec{p}_i$ is linear momentum of i^{th} particle of system having position vector $\vec{r}_i$.

The (L) of i^{th} particle about origin O is given by $\vec{L}_i = \vec{r}_i \times \vec{p}_i$ --- (1)



Total ($\vec{L}$) of System of particle about origin O is obtained by taking Σ of eqⁿ (1)

$$\sum_{i=1}^N \vec{L}_i = \sum_{i=1}^N (\vec{r}_i \times \vec{p}_i)$$

$$\therefore \vec{L} = \sum_{i=1}^N (\vec{r}_i \times \vec{p}_i) \quad \text{--- (2)} \quad \left[\because \sum_{i=1}^N \vec{L}_i = \vec{L} \right]$$

Differentiating eqn (2) w.r.t. 't'

$$\frac{d\vec{L}}{dt} = \sum_{i=1}^N \frac{d}{dt} (\vec{r}_i \times \vec{p}_i)$$

$$\frac{d\vec{L}}{dt} = \sum_{i=1}^N \left[\vec{r}_i \cdot \frac{d\vec{p}_i}{dt} + \vec{p}_i \cdot \frac{d\vec{r}_i}{dt} \right]$$

$$\frac{d\vec{L}}{dt} = \sum_{i=1}^N \left[\vec{r}_i \cdot \frac{d\vec{p}_i}{dt} + \vec{p}_i \times \vec{v}_i \right]$$

$$\left[\because \vec{v}_i = \frac{d\vec{r}_i}{dt} \right]$$

$$= \sum_{i=1}^N \left[\vec{r}_i \times \frac{d\vec{p}_i}{dt} + m_i (\vec{v}_i \times \vec{v}_i) \right]$$

$$\frac{d\vec{L}}{dt} = \sum_{i=1}^N \left[\vec{r}_i \times \frac{d\vec{p}_i}{dt} \right] \quad \text{--- (3)}$$

The eqn of motion of i^{th} particle is given by

$$\vec{F}_i = \frac{d\vec{p}_i}{dt}$$

$$\vec{F}_i^{(e)} + \sum_{j=1}^N \vec{F}_{ij} = \frac{d\vec{p}_i}{dt} \quad \text{--- (4)}$$

The eqn of motion for the whole system can be obtained by taking $\sum$ on both sides of eqn (4)

$$\sum_{i=1}^N \vec{F}_i^{(e)} + \sum_{i=1}^N \sum_{j=1}^N \vec{F}_{ij} = \sum_{i=1}^N \frac{d\vec{p}_i}{dt}$$

$$\sum_{i=1}^N \vec{F}_i^{(e)} + \sum_{i,j=1}^N \vec{F}_{ij} = \sum_{i=1}^N \frac{d\vec{p}_i}{dt} \quad \text{--- (5)}$$

Taking cross product of each term of eqⁿ (5) by $\vec{r}_i$

$$\sum_{i=1}^N \vec{r}_i \times \vec{F}_i^{(e)} + \sum_{i,j=1}^N \vec{r}_i \times \vec{F}_{ij} = \sum_{i=1}^N \vec{r}_i \times \frac{d\vec{p}_i}{dt}$$

$$\sum_{i=1}^N \vec{L}_i^{(e)} + \sum_{i,j=1}^N \vec{r}_i \times \vec{F}_{ij} = \sum_{i=1}^N \vec{r}_i \times \frac{d\vec{p}_i}{dt}$$

$$\vec{L}^{(e)} + \sum_{i,j=1}^N (\vec{r}_i \times \vec{F}_{ij}) = \sum_{i=1}^N (\vec{r}_i \times \frac{d\vec{p}_i}{dt})$$

$$\vec{L}^{(e)} = \sum_{i=1}^N (\vec{r}_i \times \frac{d\vec{p}_i}{dt}) \quad \text{--- (6)}$$

Compare eqⁿ (3) & (6).
 $\frac{d\vec{L}}{dt} = \vec{L}^{(e)}$. Since $\vec{L}^{(e)} = 0$

$\frac{d\vec{L}}{dt} = 0$ $\vec{L} = \text{constant}$
 $\vec{L} = \text{conserved}$

Hence proved.

P. P. SWAMI VIVEKANAND SEVASHRAM SANSTHA SHIRALA'S
VISHWASRAO NAIK ARTS, COMMERCE & BABA NAIK
SCIENCE MAHAVIDYALAYA, SHIRALA- 415408

DEPARTMENT OF PHYSICS

HOME ASSIGNMENT

B.Sc.-I (SEM-I) paper-II (DSC-A2)

MECHANICS-II

Marks: 10

Q.1) Attempt the following questions. 10

a) Explain experimental determination of elastic constants (Young's Modulus, Bulk modulus & Modulus of rigidity) by Searle's method. 05

b) What is Angle of contact & explain Young equation. 05

Dept. of Physics
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P. P. SWAMI VIVEKANAND SEVASHRAM SANSTHA SHIRALA'S
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 SCIENCE MAHAVIDYALAYA, SHIRALA- 415408**

DEPARTMENT OF PHYSICS

B.Sc -I (Sem-I, Paper-I&II) (2023-24)

RESULT

Sr. No.	Name of Students	Marks	
		Paper-I	Paper-II
01	ATTAR AMAN AYAJI	8	8
02	BANSODE JYOTI VISHWAS	8	7
03	BHEDASE SWAPNIL KUSHAV	9	8
04	DESAI HARSH WARDHAN SANJAY	8	7
05	DUBULE POOJA TANAJI	7	8
06	HAVALDAR OMKAR MAHADEV	7	7
07	JADHAV RUSHIKESH DILIP	8	8
08	JADHAV SHITAL DNYANDEV	9	8
09	KADAM PRANALI HANMANTRAO	9	9
10	KAVAR SAKSHI SHANKAR	8	7
11	KHOT SANGRAM KISAN	8	8
12	KINARE KARAN BALU	9	8
13	NAIK SANIKA BALIRAM	7	7
14	NALAWADE RUTUJA RAJARAM	8	9
15	PADALKAR AVIRAJ AJIT	8	7
16	PATIL RUTUJA SANDIP	8	8
17	PATIL SANGRAM SANDIP	9	8
18	PATIL SHIVAM RAMCHANDRA	8	7
19	PATIL VAISHNAVI NAMDEV	8	8
20	PAWALE SURAJ NAMDEV	8	8
21	PAWAR SWAPNIL SURESH	Ab	Ab
22	SURYAWANSHI RUSHIKESH RAJARAM	Ab	Ab

Dept. of Physics

Vishwasrao Naik Arts, Commerce

& Baba Naik Science Mahavidyalaya Shirala



Principal,

Vishwasrao Naik Arts, Commerce
 & Baba Naik Science Mahavidyalaya
 Shirala, Dist. Sangli.

Name - Pawale Surraj Narinder
 Class - B.Sc - I

8/10

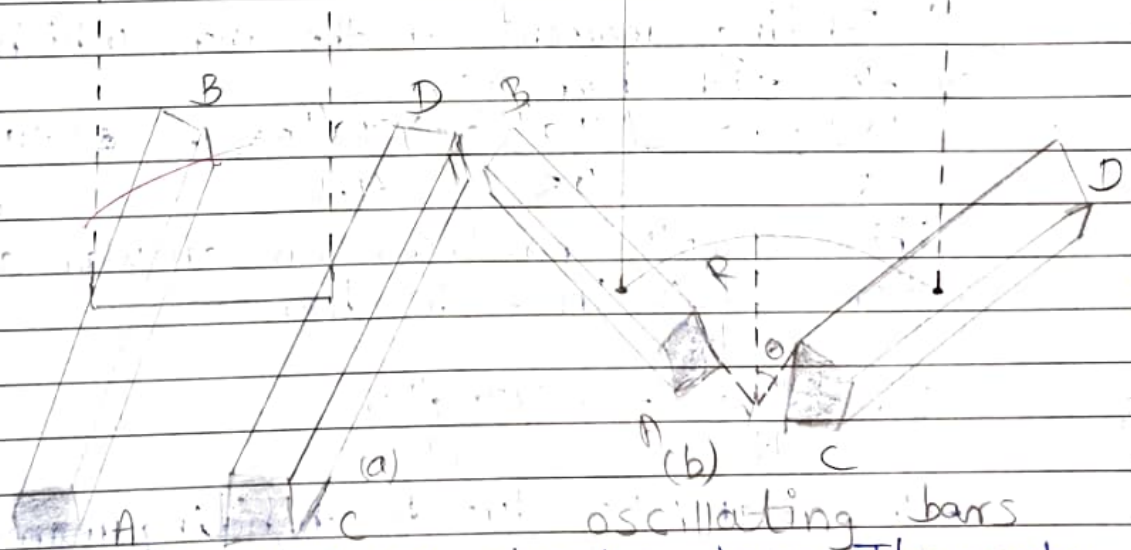
Paper - III C D S C - A2)

Mechanics - II.

Q.1 Explain experimental determination of elastic constants (Young's modulus, Bulk Modulus, Modulus of Rigidity) by Searle's method.

Determination of γ - Consider a wire of length l and radius a is fixed to the middle points of two similar and equal metal bars. The bars may be of circular or rectangular cross-section. The bars are suspended from rigid support by means of two vertical threads. Wire remains straight and bars remain parallel to each other.

Horizontal bars are at rest



oscillating bars
 Let AB and CD are two bars. The ends A and C of bars are slightly pulled together symmetrically through a small distance. The wire gets bent into a

Circular path circ. If the bars are released, they begin to oscillate in horizontal plane forming a circular arc. It is due to torque exerted the wire on the bars. The mid-point of bars remains almost at rest.

If θ is the angle of deflection of each other bar from its normal position, then the angle subtended by the wire at centre of curvature of circular arc into which it is bent, is 2θ is radius of the arc then,

$$l = R \cdot 2\theta$$

i.e. $R = l/2\theta$

We know the bending moment of the wire is $\frac{\gamma I_g}{R}$

Where I_g is the geometrical moment of inertia of the wire.

$$I_g = \frac{\pi a^4}{4}$$

$\therefore$ Bending moment of the wire which exerts couple each bar is,

$$\frac{\gamma I_g}{R} = \frac{\gamma \pi a^4}{4R} = \frac{\gamma \pi a^4 2\theta}{4l} = \frac{\gamma \pi a^4 \theta}{2l}$$

This couple produces an angular acceleration $\frac{d^2\theta}{dt^2}$ in each bar

$$I \cdot \frac{d^2\theta}{dt^2} = - \frac{\gamma \pi a^4 \theta}{2l}$$

-ve sign is due to bending moment acts as restoring couple.

$$\frac{d^2\theta}{dt^2} + \frac{\gamma \pi a^4 \theta}{2I l} = 0$$

Let,

$$\frac{Y \pi a^4}{2 I d} = \omega^2$$

We have $\frac{d^2 \theta}{dt^2} + \omega^2 \theta = 0$

$\therefore$ Time period of oscillation is,

$$T_1 = \frac{2 \pi}{\omega} = 2 \pi \sqrt{\frac{2 I d}{Y \pi a^4}}$$

Squaring both sides of eqⁿ

$$T_1^2 = 4 \pi^2 \times \frac{2 I d}{Y \pi a^4}$$

$$\therefore Y = \frac{8 \pi I d}{a^4 T_1^2}$$

Determination of η - To determine rigidity of material of wire, the suspension threads are removed. One of the bars is clamped horizontally, so that the other bar hangs vertically below it at other end of wire.

The suspended bar is turned about the wire in horizontal plane so as to twist the wire. When bar is released, it begins to oscillate torsionally.

$\frac{d^2 \theta}{dt^2}$ is angular accelⁿ of the bar, then τ

couple which produces angular accelⁿ is $I \frac{d^2 \theta}{dt^2}$

We know torsional couple, i.e. twisting couple set up in the wire is,

$$C = \frac{\pi \eta a^4}{2 l} \cdot \theta$$

∴ In equilibrium position

$$I \frac{d^2\theta}{dt^2} = - \frac{\pi h a^4}{2d} \cdot \theta$$

-ve sign is due to restoring couple

$$\therefore \frac{d^2\theta}{dt^2} + \frac{\pi h a^4}{2 I d} \cdot \theta = 0$$

$$\text{Let, } \omega^2 = \frac{\pi h a^4}{2 I d}$$

∴ period of oscillation of bar is

$$T_2 = \frac{2\pi}{\omega} = 2\pi \sqrt{\frac{2 I d}{\pi h a^4}}$$

Squaring both sides.

$$T_2^2 = 4\pi^2 \times \frac{2 I d}{\pi h a^4}$$

$$h = \frac{8\pi I d}{a^4 T_2^2}$$

Determination of G :-

$$\frac{Y}{h} = \frac{8\pi I d}{T_1^2 a^4} \times \frac{T_2^2 a^4}{8\pi I d}$$

$$\frac{Y}{h} = \frac{T_2^2}{T_1^2}$$

$$G = \frac{Y}{2h} - 1$$

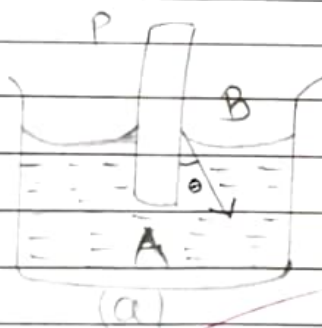
$$\therefore G = \frac{T_2^2}{2 T_1^2} - 1$$

$$\therefore G = \frac{T_2^2 - 2 T_1^2}{2 T_1^2}$$

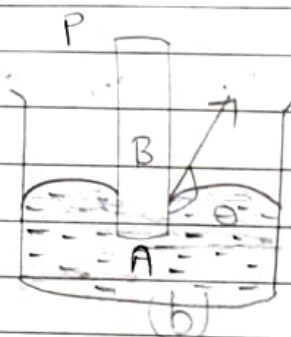
2. What is angle of contact and explain Young eqⁿ.

When a liquid meets a solid, its surface near the region of contact with the solid becomes curved. The angle betⁿ the tangent to the liquid surface at the point of contact and the surface of the solid inside the liquid is called angle of contact for that pair of solid and liquid.

The angle of contact may have any value betⁿ 0° and 180° . For most of liquids and glass it is less than 90° . For mercury and glass, it is about 140° . The angle of contact for pure water and clean glass is 0° .



an acute angle



an obtuse angle

In fig. $\angle ABC = \theta$ is the angle of contact. In case (a), it is acute and liquid rises up a little alongside the glass plate P, dipped in the liquid.

In case (b) the angle of contact is obtuse and liquid is depressed a little where it comes in contact with glass plate.

Young's eqⁿ :-

To Find the condition whether the angle of contact between a liquid and a solid is acute or obtuse, consider the case of solid, liquid and air in contact. Let θ be angle of contact of liquid with solid. Let us consider the three surface tensions, viz T_1 for air and liquid, T_2 for air and solid and T_3 for liquid and solid surfaces respectively.

For equilibrium, the sum of T_3 and $T_1 \cos \theta$, which is component of T_1 in the direction of T_3 must be balanced by T_2 .
i.e. $T_3 + T_1 \cos \theta = T_2$

This is Young's eqⁿ.

$$\therefore T_1 \cos \theta = T_2 - T_3$$

$$\text{or } \cos \theta = \frac{T_2 - T_3}{T_1}$$

Thus, if T_2 is greater than T_3 , then $\cos \theta$ will be positive and θ will be acute. Such liquids wet the solid surfaces in contact. If T_2 is less than T_3 then $\cos \theta$ will be negative and θ will be obtuse. Such liquids do not wet solid surfaces in contact. If however T_2 is greater than $(T_1 + T_3)$, then there will be no equilibrium and liquid will spread over the solid, as it happens when a water drop is placed over a perfectly clean plate of glass.



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B

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ESTD 1970

ESTD 1970

Principal: Dr. R. B. Bansode
M.A., M.Ph., Ph.D.

ESTD 1970
13220

26/02/2024

Notice

All the students of B.Sc-I (Sem-II) are directed to collect question papers of Home Assignment & submit the answers scripts to the concerned teachers within a month.

It is mandatory to all, failing which the students will not be allowed to appear in final examination.

Dept. of Physics

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DEPARTMENT OF PHYSICS

HOME ASSIGNMENT

B.Sc. -I (SEM-II) paper-III (DSC-B1)

ELECTRICITY & MAGNETISM – I

Marks: 10

(2023-24)

Q.1 Attempt the following questions.

a) Explain Gradient, Divergence & Curl & also write their physical significance.

b) Define the terms i) Line integral ii) Surface Integral
iii) Volume Integral.

Q.2 State & prove Gauss theorem of electrostatics.

Q.3 Explain about electric field due to uniformly charged spherical shell & solid sphere.




Dept. of Physics
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Home Assignment

Name - Pranali Hanmantrao Kadam

class - B.Sc-I [Sem-II] paper-III (DSC-B1)

* ELECTRICITY & MAGNETISM - I *

Q.1 Attempt the following questions.

a) Explain Gradient, Divergence & curl and also write their physical significance.

→ **Gradient**: In mathematics and physics the gradient and del operator are fundamental concepts used to describe the behaviour of functions and fields in space.

- The gradient is the mathematical operator that gives both the magnitude and direction.

- Mathematically gradient of scalar function (ϕ) is expressed as

$$\text{Gradient} = \text{Grad}(\phi) = \nabla \phi$$

$$\nabla \phi = \left(\frac{\partial}{\partial x} \hat{i} + \frac{\partial}{\partial y} \hat{j} + \frac{\partial}{\partial z} \hat{k} \right) \phi$$

* **Physical significance**: It operates on scalar function and results in vector function.

- It is normal to constant value surface. This property is used extensively to identify the direction of vector fields.

2) **Divergence**: The divergence of vector field simply measures how much the flow is expanding at a given point.

- It does not indicate in which direction the expansion is occurring. Hence the divergence is scalar.

$$[\text{Divergence} = \nabla \cdot \vec{v}]$$

$$\text{Divergence} = \left[\frac{\partial}{\partial x} \hat{i} + \frac{\partial}{\partial y} \hat{j} + \frac{\partial}{\partial z} \hat{k} \right] \cdot \vec{v}$$

* **Physical significance**: Divergence measures the tendency of the fluid to collect or disperse at a point.

- The physical significance of divergence is the indication of the spreading of a vector from a particular point.

- The positive divergence signifies that point is a source and negative divergence signifies that point is sink.

- The field vector whose divergence is zero is called solenoidal.

3] **Curl**: • The curl of vector field allows us to measure the rotation of vector field.

- The curl of vector allows us to measure spinning action present in a vector field.

- When $\nabla \times$ operates on vector function via cross product we give curl.

* **Physical significance**: • The curl of vector field represents the rotation at point.

- Curl tells you how much vector quantity is spinning around point.
- Curl is used to measure the rotational extent of the field about a particular point.

6] **Define the terms**:

1] **Line integral**: Consider a vector field $\vec{A} = A(x, y, z)$ and take two points a and b in it. Then the line integral of $\vec{A}$ over any path between a and b is defined as $\int_a^b \vec{A} \cdot d\vec{r}$.

2] **Surface integral**: Consider a surface S in this field then the surface integral of $\vec{A}$ along the surface S is given by $\iint_S \vec{A} \cdot d\vec{s} = \text{surface integral}$.

3] **Volume integral**: Consider closed surface S enclosing the volume V in a vector field $\vec{A}$ is given by

$$\iiint_V \vec{A} \, dv = \text{Volume integral}$$

Q.2 State & prove Gauss theorem of electrostatics.

→ **statement**: It states that the total electric flux through a closed surface is $\frac{1}{\epsilon_0}$ times the net charge enclosed within it.

surface.

Proof: Consider a single point charge $+q$ at point O within the closed surface S .

- Let P be a point on the closed surface S .
- Imagine small area ' ds ' around P . Let $OP = r$.
- magnitude of E is given by

$$E = k \frac{q}{r^2} = \frac{1}{4\pi\epsilon_0} \frac{q}{r^2} \quad \text{--- (1)}$$

- small electric flux through small area is

$$d\phi_E = E \cdot ds = E ds \cos \theta \quad \text{--- (2)}$$

- Total electric flux through closed surface S is

$$\phi_E = \oint_S d\phi_E = \oint_S E ds \cos \theta \quad \text{--- (3)}$$

Using eqⁿ (1) in eqⁿ (3) we get

$$\phi_E = \oint_S d\phi_E = \oint_S \frac{1}{4\pi\epsilon_0} \frac{q}{r^2} ds \cos \theta = \frac{1}{4\pi\epsilon_0} \oint_S \frac{1}{r^2} ds \cos \theta$$

$$\therefore \phi_E = \frac{q}{4\pi\epsilon_0} \oint_S \frac{ds \cos \theta}{r^2} \quad \text{--- (4)}$$

But $\frac{ds \cos \theta}{r^2} = d\omega$

So eqⁿ (4) becomes,

$$\phi_E = \frac{q}{4\pi\epsilon_0} \oint_S d\omega \quad \text{--- (5)}$$

But $\oint_S d\omega = 4\pi$

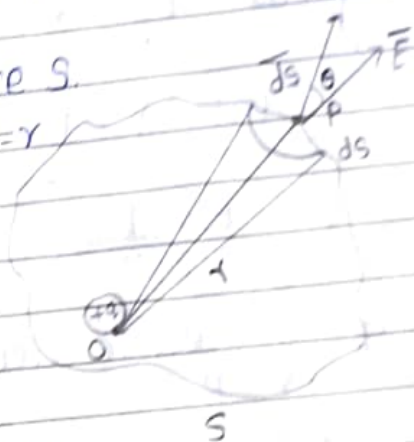
So eqⁿ (5) becomes,

$$\phi_E = \frac{q}{4\pi\epsilon_0} \cdot 4\pi$$

$$\phi_E = \frac{q}{\epsilon_0}$$

$$\phi_E = \oint_S \vec{E} \cdot d\vec{S} = \frac{q}{\epsilon_0}$$

Hence proved



Q.3. Explain about electric field due to uniformly charged spherical shell & solid sphere.

→ * Electric field intensity due to uniformly charged spherical shell:

Case i) Electric field intensity at point outside shell.

- According to Gauss law,

$$\oint_S \vec{E} \cdot d\vec{s} = \frac{q}{\epsilon_0} \rightarrow \oint_S E ds \cos \theta = \frac{q}{\epsilon_0} \rightarrow \oint_S E ds \cos 0 = \frac{q}{\epsilon_0}$$

$$\oint_S E ds = \frac{q}{\epsilon_0} \rightarrow E \oint_S ds = \frac{q}{\epsilon_0} \quad (\because \theta = 0)$$

$$\therefore E (4\pi r^2) = \frac{q}{\epsilon_0} \quad \left[\because \oint_S ds = 4\pi r^2 \right]$$

$$\therefore E = \frac{q}{4\pi\epsilon_0 r^2} \quad \text{--- (1)}$$

Case ii] Electric field intensity at point on surface of spherical shell.

$$r = R$$

$$\therefore E_p = \frac{\sigma R^2}{\epsilon_0 R^2} = \frac{\sigma}{\epsilon_0}$$

$$\therefore E_p = \frac{\sigma}{\epsilon_0}$$

Case iii] Electric field intensity at point inside the spherical shell:

According to Gauss law

$$\oint_S \vec{E} \cdot d\vec{s} = \frac{q}{\epsilon_0} \rightarrow \oint_S E ds \cos \theta = \frac{q}{\epsilon_0}$$

$$\text{Since } q = 0$$

$$\therefore \oint_S E ds \cos \theta = 0 \rightarrow E \oint_S ds \cos \theta = 0$$

$$\therefore E_{in} = 0$$

* Electric field intensity at a point outside the solid sphere:

Let 'q' be charge given to solid sphere & p be the volume charge density

$$P = \frac{\text{charge}}{\text{Volume}} \rightarrow P = \frac{q}{\frac{4}{3}\pi R^3} \quad \text{--- (1)}$$

$$\therefore q = P \frac{4}{3}\pi R^3 \quad \text{--- (2)}$$

Case i] Electric field intensity at a point outside solid sphere:

According to Gauss law,

$$\oint_S \vec{E} \cdot d\vec{s} = \frac{q}{\epsilon_0} \rightarrow \oint_S E ds \cos \theta = \frac{q}{\epsilon_0} \rightarrow \oint_S E ds \cos 0 = \frac{q}{\epsilon_0}$$

$$\oint_S E ds = \frac{q}{\epsilon_0} \rightarrow E \oint_S ds = \frac{q}{\epsilon_0} \rightarrow E (4\pi r^2) = \frac{p \frac{4}{3}\pi R^3}{\epsilon_0}$$

$$E_0 = \frac{P 4\pi R^3}{3\epsilon_0 4\pi R^2} \quad (\because q = P \frac{4}{3}\pi R^3)$$

$$\therefore E_0 = \frac{PR^3}{3\epsilon_0 R^2}$$

Case ii] Electric field intensity at a point on the surface of solid sphere:

$$E_p = \frac{PR^2}{3\epsilon_0 r^2} = \frac{PR^3}{3\epsilon_0 R^2} = \frac{PR}{3\epsilon_0}$$

$$\therefore E_p = \frac{PR}{3\epsilon_0}$$

Case iii] Electric field intensity at a point inside the solid sphere:

According to Gauss law,

$$\oint_S \vec{E} \cdot d\vec{s} = \frac{q'}{\epsilon_0} \quad \longrightarrow \quad \oint_S E ds \cos\theta = \frac{q'}{\epsilon_0}$$

$$\oint_S E ds \cos\theta = \frac{P \times \text{Volume of Gaussian surface}}{\epsilon_0}$$

$$E \oint_S ds = \frac{q}{\epsilon_0} \times \frac{4}{3}\pi r^3 \quad (\because P = \frac{q}{4\pi R^3})$$

$$\therefore E (4\pi r^2) = \frac{q r^3}{\epsilon_0 R^3}$$

$$\therefore E = \frac{q r^3}{\epsilon_0 R^3 4\pi r^2} = \frac{q r}{4\pi \epsilon_0 R^3}$$

$$\therefore E_{in} = \frac{q r}{4\pi \epsilon_0 R^3} \quad \text{--- (5)}$$

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DEPARTMENT OF PHYSICS

HOME ASSIGNMENT

B.Sc. -I (SEM-II) paper-IV (DSC-B2)

ELECTRICITY & MAGNETISM - II

Marks: 10

2023-24

Q.1) Attempt the following questions.

a) Explain Resonance in LCR circuit.

b) Define voltage & current source & also explain Ohm's law.

Q.2 Explain construction & working of Ballistic Galvanometer & Also derive an expression for charge flowing through Ballistic Galvanometer.

Q.3) State & prove Biot-Savart's law.

Q.4) State & prove Ampere's Circuital law.




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DEPARTMENT OF PHYSICS

B.Sc.-I (Semi-II, Paper-III&IV) (2023-24)

RESULT

Sr. No.	Name of Students	Marks	
		Paper-III	Paper-IV
01	ATTAR AMAN AYAJI	9	9
02	BANSODE JYOTI VISHWAS	10	10
03	BHEDASE SWAPNIL KESHAV	8	8
04	DESAI HARSIIWARDHAN SANJAY	10	9
05	DUBULE POOJA TANAJI	10	10
06	HAVALDAR ONKAR MAHADEV	8	7
07	JADHAV RUSHIKESH DILIP	7	8
08	JADHAV SHITAL DNYANDEV	8	7
09	KADAM PRANALI HANMANTRAO	10	10
10	KAVAR SAKSHI SHANKAR	7	8
11	KHOT SANGRAM KISAN	8	9
12	KINARE KARAN BALU	8	8
13	NAIK SANIKA BALIRAM	8	8
14	NALWADE RUTUJA RAJARAM	10	10
15	PADALKAR AVIRAJ AJIT	10	9
16	PATIL RUTUJA SANDIP	10	10
17	PATIL SANGRAM SANDIP	9	10
18	PATIL SHIVAM RAMCHANDRA	8	8
19	PATIL VAISHNAVI NAMDEV	10	10
20	PAWALE SURAJ NAMDEV	10	10
21	PAWAR SWAPNIL SURESH	Ab	Ab
22	SURYAWANSI RUSHIKESH RAJARAM	Ab	Ab



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$\frac{10}{10}$

150

$$\tau = NAB \int i dt \quad [\because \int i dt = q]$$

$$\tau = NABq \quad \text{--- (4)}$$

• Let moment of inertia of coil is I and Angular velocity be ω , then Angular momentum L is given $L = I\omega$ --- (5)

$\therefore$ From eqⁿ (4) & (5)

$$I\omega = NABq \quad \text{--- (6)}$$

Now Rotating k.E deflects the coil through an angle θ and this deflection is restored through the spring

$$\text{Restoring torque} = \frac{1}{2} c\theta^2$$

$$\text{K.E} = \frac{1}{2} I\omega^2$$

The restoring torque of coil is equal to their deflection

$$\frac{1}{2} c\theta^2 = \frac{1}{2} I\omega^2$$

$$c\theta^2 = I\omega^2 \quad \text{--- (7)}$$

$$\text{We have } T = 2\pi \sqrt{\frac{I}{c}}$$

Squaring on both sides

$$T^2 = 4\pi^2 \frac{I}{c} \quad I = \frac{cT^2}{4\pi^2} \quad \text{--- (8)}$$

$$c\theta^2 = I\omega^2 \quad \text{--- (7)}$$

Multiplying eqⁿ (7) by eqⁿ (8)

$$c\theta^2 \times \frac{cT^2}{4\pi^2} = I^2 \omega^2$$

$$\frac{c^2 \theta^2 T^2}{4\pi^2} = I^2 \omega^2$$

$$\left(\frac{c\theta T}{2\pi} \right)^2 = (I\omega)^2 \quad \frac{c\theta T}{2\pi} = I\omega \quad \text{--- (9)}$$

Put value of eqⁿ (6) in (9)

$$\frac{c\theta T}{2\pi} = NABq$$

$$q = \frac{c\theta T}{2\pi NAB}$$

$$q = \left(\frac{cT}{2\pi NAB} \right) \theta$$

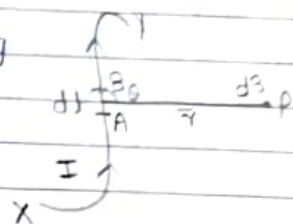
$$q = k\theta \quad \text{--- (10)} \quad [\because \frac{cT}{2\pi NAB} = k]$$

$$\text{i.e. } q \propto \theta$$

Q.2 State and prove Biot-Savart's law.

→ Let us consider a small element AB of length dl of conducting wire XY carrying current I .

• Let $\vec{r}$ be position vector of point P from current element Idl and θ be angle between length element ' dl ' and ' $\vec{r}$ '



• According to Biot Savart's law, the magnitude of magnetic field induction dB at point P due to small current element depends upon following factors:

- i] $dB \propto I$ ii] $dB \propto dl$ iii] $dB \propto \frac{1}{r^2}$ iv] $dB \propto \sin\theta$.

combining (i) to (iv) we get

$$dB \propto \frac{Idl \sin\theta}{r^2}$$

$$dB = k \frac{Idl \sin\theta}{r^2} \quad \text{--- (1)}$$

$$k = \frac{\mu_0}{4\pi} = 10^{-7} \text{ Tm/A or TmA}^{-1}$$

Then eqn (1) becomes

$$dB = \frac{\mu_0}{4\pi} \cdot \frac{Idl \sin\theta}{r^2} \quad \text{--- (2)}$$

$$dB = \frac{\mu_0 I}{4\pi} \cdot \frac{dl \sin\theta \times r}{r^2 \times r}$$

$$dB = \frac{\mu_0 I}{4\pi} \cdot \frac{dl \sin\theta}{r^3} \quad \text{--- (3)}$$

$$\text{In vector form } \vec{dB} = \frac{\mu_0 I}{4\pi} \frac{(d\vec{l} \times \vec{r})}{r^3} \hat{n} \quad \text{--- (4)}$$

Q.3. State and prove Ampere's circuital law.

→ **statement:** It states that the line integral of M.F around closed loop is equal to μ_0 times current passing through the loop

$$\text{i.e. } \oint \vec{B} \cdot d\vec{l} = \mu_0 I$$

Proof: According to Biot-Savart law, magnitude of M.F at any point P at perpendicular distance r is given by

$$B = \frac{\mu_0}{4\pi} \frac{2I}{r} \quad \text{--- (1)}$$

Now imagine circular curve of radius r with the centre of wire and passing through point P as shown in fig.

Let us consider a small element dl on

Ampereal loop then

$$\oint \vec{B} \cdot d\vec{l} = \oint B dl \cos \theta = \oint B dl \cos 0$$

$$= \oint B dl = B \oint dl \quad (\because \theta = 0)$$

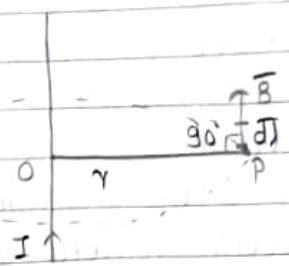
$$B = 2\pi r \quad \text{--- (2)} \quad (\because \oint dl = 2\pi r)$$

Using (1) in (2) we get

$$\oint \vec{B} \cdot d\vec{l} = \frac{\mu_0 2I}{4\pi} (2\pi r)$$

$$\oint \vec{B} \cdot d\vec{l} = \mu_0 I$$

Hence proved.



Q. 4] Attempt the following questions.

a] Explain Resonance in LCR circuit.

→ The resonance of a series LCR circuit occurs when the inductive and capacitive reactances are equal in magnitude but cancel each other because they are 180° apart in phase.

• In LCR circuit, the impedance is given by:

$$Z = \sqrt{R^2 + (X_L - X_C)^2}$$

where R is resistance, X_L is inductive resistance and X_C is capacitive resistance.

• At resonance in LCR circuit,

$$X_L = X_C$$

$$\omega L = \frac{1}{\omega C}$$

$$\therefore \omega = \frac{1}{\sqrt{LC}} \text{ which is known as resonance frequency.}$$

• Further, impedance is minimum at resonance, $Z_{\min} = R$ which means that the current becomes maximum, $I_{\max} = \frac{V_{\text{rms}}}{R}$.

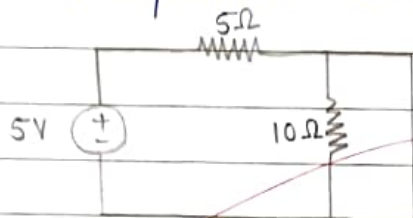
b] Define voltage & current source & also explain Ohm's law.

→ Sources are of two types:

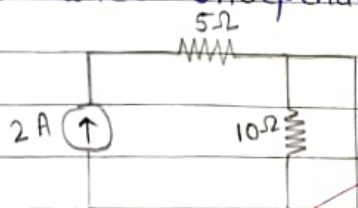
- i] Independent sources
- ii] Dependent sources.

i] Independent sources are of two types:

i] Independent voltage source - The source whose voltage value does not depend on any element present in the circuit is called Independent voltage source.

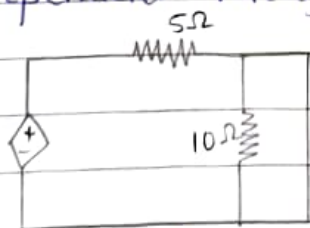


ii] Independent current source - The source whose current value does not depend on any element present in the circuit is called Independent current source.

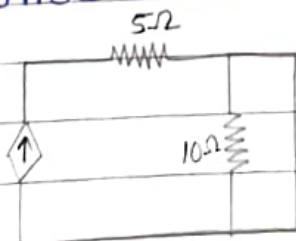


ii] Dependent sources are of two types:

i] Dependent voltage source - The source whose voltage value depends on any element present in the circuit is called Dependent voltage source.



ii] Dependent current source - The source whose current value depends on any element present in the circuit is called Dependent current source.





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NAAC GRADE - 'B'

Junior College Code: 15

Junior College No. J-22

UDISE No. 27340113220

(Affiliated to Shivaji University, Kolhapur)

JUNIOR/SENIOR

EST: JUN-1970

Principal: Dr. R. B. Bansode
M.A., M.Ph., Ph.D.

05/10/2023

Notice

All the students of B.Sc. II (Sem-III) are directed to collect question papers of Home Assignment & submit the answers scripts to the concerned teachers within a month.

It is mandatory to all, failing which the students will not be allowed to appear in final examination.

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DEPARTMENT OF PHYSICS

HOME ASSIGNMENT

B.Sc. -II (SEM-III) paper-V (DSC-C1)

THERMAL PHYSICS & STATISTICAL MECHANICS-I

Sub. Physics

Marks: 10

Q.1) Explain concept & significance of entropy.

05

Q.2) Explain coefficient of thermal conductivity of gas on
the basis of kinetic theory.

05


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SCIENCE MAHAVIDYALAYA, SHIRALA- 415408

DEPARTMENT OF PHYSICS

HOME ASSIGNMENT

B.Sc. -II (SEM-III) paper-VI (DSC-C2)

Waves & Optics-I

Sub: Physics

Marks: 10

Q.1) Explain Sabine's formula.

05

Q.2) Explain energy transfer in coupled oscillatory system.

05

Dept. of Physics

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DEPARTMENT OF PHYSICS

B.Sc.-II (Sem-III, Paper-V&VI) (2023-24)

RESULT

Sr. No.	Name of Students	Marks	
		Paper-V	Paper-VI
01	PATIL SANJANA BAJIRAO	8	8
02	KAMBLE ABHISHEK DADU	9	8
03	PATIL PRATIK BABASO	8	7
04	JADHAV PARAS SANJAY	7	7
05	JANWADKAR SANIKA RAMCHANDRA	8	7
06	KHOT SHRUTIKA SUNIL	9	9
07	LOHAR AVISHKAR CHANDRAKANT	9	8
08	PATIL RITESH ABASO	8	7
09	PATIL RAHUL VISHNU	8	8
10	PATIL RENUKA SOPAN	9	9
11	PATIL SUMIT BAJIRAO	8	9
12	SATHE ARJUN HARIBA	8	8
13	SHIVJATAK NIRANJAN VISHVNATH	7	7
14	KHANDEKAR PRANAV MANSING	8	7



Dept. of Physics
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Shirala, Dist. Sangli.

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Name : Shrutika Sunil Khat

Class : BSc. II

Subject : Physics

Paper : V

Wave optics - I.

Q. 1) Explain concept and significance of entropy.

Ans: Entropy is a thermodynamic state quantity that is a measure of the randomness or disorder of the molecule of the system.

Entropy is denoted by letter 'S'.

Change in entropy is denoted by ' ΔS '

The entropy of a system is a state function and depends only on the initial and final state of the system. The change in entropy is given by

$$\Delta S = S_{\text{final}} - S_{\text{initial}}$$

when, $S_{\text{final}} > S_{\text{initial}} \Rightarrow \Delta S = +ve$

$S_{\text{final}} < S_{\text{initial}} \Rightarrow \Delta S = -ve$ [Ideal]

The change in entropy is equal to heat energy absorbed or evolved divided by temperature.

i.e

$$\Delta S = \frac{Q}{T}$$

If heat is absorbed, then ΔS is positive and there will be increase in entropy.

If heat is evolved, then ΔS is negative and there will be decrease in entropy.

S.I unit of entropy

$$S = \frac{\text{Joule}}{\text{kelvin}} = J/K = JK^{-1}$$

C.G.S unit of entropy

$$S = \frac{\text{erg}}{\text{kelvin}} = \text{erg } K^{-1} \text{ or}$$

$$S = \text{cal } K^{-1}$$

• Physical Significance of Entropy.

- 1) Increase of entropy implies a transition from a more ordered to a less ordered state of affairs in a system.
- 2) Growth of entropy implies a transition from less probable to more probable state.
- 3) The entropy of the universe is tending towards maximum.
- 4) Entropy may also be regarded as a measure of unavailable energy of the universe to do useful work. As entropy of the universe increases, the unavailable energy increases, or the available energy of the universe for doing useful work decreases. This is principle of degradation of energy.

Q. 2) Explain coefficient of thermal conductivity of gas on the basis of kinetic theory.

Ans: Whenever there is temperature difference between different regions in a gas, heat or thermal energy flows from the region of higher temperature to that at lower temperature.

The arguments and method adopted to obtain expression for the thermal conductivity are the same as for viscosity.

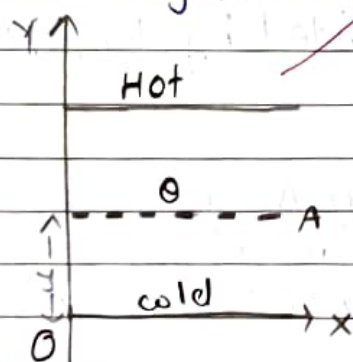


Fig: Thermal conductivity of gas.

Consider the situation as shown in fig. for a gas in steady state. A layer A of the gas is at a distance y from cold end OX; the temperature at A is Θ and temperature gradient is $\frac{d\Theta}{dy}$.

The temperature of the molecules crossing A from the hot end (in downward direction) is $(\Theta + \frac{d\Theta}{dy} \lambda)$

and that of the molecule crossing it from below is $(\theta - \frac{d\theta}{dy} \lambda)$; where λ is the mean free path of the gas.

If n is the molecule density and $\bar{c}$ is the average velocity and m is the mass of each of the molecules of the gas, taking the random motion into consideration.

The total heat carried ~~downward~~ downward per unit area per second $A = \frac{m \cdot n \bar{c}}{6} \cdot C_v (\theta + \frac{d\theta}{dy} \lambda)$ — (1)

And the total heat carried upwards per unit area per second $A = \frac{m n \bar{c}}{6} C_v (\theta - \frac{d\theta}{dy} \lambda)$ — (2)

Here, C_v is the specific heat of the gas at constant volume

Therefore, the net heat conducted per unit area per second at

$$A = \frac{m n \bar{c}}{6} \cdot C_v \left[(\theta + \frac{d\theta}{dy} \lambda) - (\theta - \frac{d\theta}{dy} \lambda) \right]$$

$$A = \frac{m n \bar{c} C_v}{3} \cdot \frac{d\theta}{dy} \lambda \quad \text{--- (3)}$$

If k is the thermal conductivity of the gas, then the heat conducted per unit area per second

$$= k \cdot \frac{d\theta}{dy} \quad \text{--- (4)}$$

$\therefore$ From eq^{ns} (3) and (4) we get

$$k \cdot \frac{d\theta}{dy} = \frac{m n \bar{c} C_v}{3} \cdot \frac{d\theta}{dy} \lambda$$

$$\therefore k = \frac{1}{3} m n \bar{c} \cdot C_v \cdot \lambda$$

Also $m n = \rho = \text{density of the gas}$

$$\therefore k = \frac{1}{3} \rho \bar{c} \cdot C_v \cdot \lambda \quad \text{--- (5)}$$

But η = coefficient of viscosity of the gas
 $\frac{\rho \bar{c} \lambda}{3}$

$$\therefore k = \eta \cdot C_v \quad \text{--- (6)}$$

Here it is assumed that all heat supplied is converted into ~~kin~~ kinetic energy of translation.

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Name : Shrutika Sunil Khot

Class : BSc II

Subject : Physics

paper : VI

Thermal Physics and Statistical Mechanics - I

Waves of Optics - I

Q. 1) Explain Sabine's formula.

⇒ Let $a_1, a_2, a_3 \dots$ be the absorption coefficients of the reflecting surface $S_1, S_2, S_3 \dots$ respectively in the ball

$$\therefore \text{Average absorption coefficient, } \bar{a} = \frac{a_1 S_1 + a_2 S_2 + a_3 S_3}{S_1 + S_2 + S_3} \\ = \frac{\sum a_i S_i}{S}$$

$$\therefore \sum a_i S_i = \bar{a} S$$

Jager showed by statistical methods, that the average distance traversed by sound waves betⁿ successive Reflection is

$\frac{4V}{S}$, where, V is volume of the enclosure (ball) and S = total area of absorbing

If v is velocity of sound, then number of reflections per second is equal to

$$n = \frac{v}{4V/S} = \frac{vS}{4V}$$

Now, if I is the average intensity in the ball at given instant time, then there will be fall in intensity by ΔI in short time interval Δt , due to absorption

$$\therefore \Delta I = \bar{a} n \Delta t \\ = \frac{\bar{a} v S I}{4V} \Delta t$$

If ϵ is rate of emission of sound energy per second is source present in ball. Then rate of growth of energy per unit volume of

$$\text{room is } \frac{dI}{dt} = \frac{E}{V} = \frac{\bar{a} v S I}{4V}$$

If source is cut off at $t=0$, Then $E=0$

$$\therefore \frac{dI}{dt} = -\frac{\bar{a} v S I}{4V}$$

$$\therefore \frac{dI}{I} = -\frac{\bar{a} v S}{4V} dt \quad \text{--- (1)}$$

If I_0 is the maximum value of intensity at $t=0$, then at any later time instant (t) the intensity reduces to I_t

$\therefore$ on integrating the above eqⁿ, we get

$$\int_{I_0}^{I_t} \frac{dI}{I} = - \int_0^t \frac{\bar{a} v S}{4V} dt$$

$$\therefore \log_e \left[\frac{I_t}{I_0} \right] = -\frac{\bar{a} v S t}{4V}$$

$$\therefore \frac{I_t}{I_0} = e^{-\frac{\bar{a} v S t}{4V}} \quad \text{--- (2)}$$

eqⁿ (2) indicates that the intensity decays exponentially.

To measure the reverberation time (T) Sabine took initial intensity to be 10^6 times the audibility limit of human ear, since, this intensity is the average intensity of a speaker in a small hall.

$I = 10^{-6}$ at $t = T$ reverberation time

$\therefore$ eqⁿ (2) becomes

$$10^{-6} = \frac{\bar{a} v S T}{4V} e^{-\frac{\bar{a} v S T}{4V}}$$

taking log we get

$$\log (10^{-6}) = -\frac{\bar{a} v S T}{4V}$$

$$\log_e (10^6) = \frac{\bar{a} v S T}{4V}$$

$$6 \times 2.303 = \frac{\bar{a} S v T}{4V}$$

Taking the velocity of sound approximately at room temperature as 350 m/s

$$\therefore T = \frac{6 \times 2.303 \times 4}{350} \times \frac{V}{85}$$

$$\therefore T = \frac{6.158 V}{85} \quad - (3)$$

The eqⁿ. is called submarine formula.

Q.2) Explain energy transfer in coupled oscillatory system

$\Rightarrow$ When two simple pendula are coupled together by using spring of spring constant (k). The coupled system oscillates with two normal modes of frequencies given by

$$\omega_1^2 = \frac{g}{l} \quad \text{and} \quad \omega_2^2 = \left[\frac{g}{l} + \frac{2k}{m} \right]$$

In terms of natural modes, the displacement x_A and x_B of the two pendula are obtained by the superposition of the two modes i.e.

$$x_A = x_1 + x_2 \quad \text{for pendulum A}$$

$$\text{and} \quad x_B = x_1 - x_2 \quad \text{for pendulum B}$$

$$\therefore x_A = A_1 \cos \omega_1 t + A_2 \cos \omega_2 t$$

$$\text{and} \quad x_B = A_1 \cos \omega_1 t - A_2 \cos \omega_2 t$$

As the two pendula are identical, the oscillation as for them will have almost equal amplitude

$$\therefore A_1 = A_2 = A$$

$\therefore$ Displacement for pendula A and B are given

$$x_A = A (\cos \omega_1 t + \cos \omega_2 t) \quad - (1)$$

$$x_B = A (\cos \omega_1 t - \cos \omega_2 t) \quad - (2)$$

Velocity of two pendula is given by

$$\frac{dx_A}{dt} = -A (\omega_1 \sin \omega_1 t - \sin \omega_2 t)$$

$\therefore$ At any instant of time $t=0$

$$x_A = 2A$$

$$x_B = 0$$

$$\frac{dx_A}{dt} = 0$$

$$\text{and } \frac{dx_B}{dt} = 0$$

This means that both pendula have zero velocity [at less] and the both A is given a displacement [2a] both B is at its mean position [zero displacement], when both the pendulum both are released at $t = 0$

It is observed that the amplitude of pendulum A decrease and at the same time amplitude of B increases. So that ultimately A comes to rest when B has maximum displacement i.e energy is transferred from A to B. Next this process is kept when energy transferred from B to A pendulum etc.

Thus, one round trip of energy therefor i.e from A to B & back from B to A is called as beat reciprocal of beat period is beat frequency.

Since, $\omega_2 > \omega_1$ we put

$$\frac{\omega_2 + \omega_1}{2} = \Omega \text{ and } \frac{\omega_2 - \omega_1}{2} = \epsilon$$

$$\text{Then } \omega_2 = \frac{\omega_2 + \omega_1}{2} + \frac{\omega_2 - \omega_1}{2} = \Omega + \epsilon$$

$$\text{and } \omega_1 = \frac{\omega_2 + \omega_1}{2} - \frac{\omega_2 - \omega_1}{2} = \Omega - \epsilon$$

$\therefore$ from eq ① and ② we get

$$\begin{aligned} x_A &= A [\cos(\Omega - \epsilon)t + \cos(\Omega + \epsilon)t] \\ &= A \cdot 2 [\cos(\Omega - \epsilon)t + \cos(\Omega + \epsilon)t] \\ &= [2A \cos \epsilon t] \cdot \cos \Omega t = A \epsilon \cos \Omega t \end{aligned}$$

$$\begin{aligned} \text{and } x_B &= A [\cos(\Omega - \epsilon)t - \cos(\Omega + \epsilon)t] \\ &= A \cdot 2 \sin \Omega t + \sin \epsilon t \end{aligned}$$

$$= [2A \sin \epsilon t] \cdot \sin \Omega t = B \sin \omega t$$

where $A \epsilon = 2A \cos \epsilon t$ and $B \epsilon = 2A \sin \epsilon t$ are amplitude eqn which show periodic variation.

A and B is

$$E = E_A + E_B$$

$$= 2MA^2\omega^2 (\cos^2 \omega t + \sin^2 \omega t)$$

$$= 2MA^2\omega^2 \quad \text{where } \omega = \frac{\omega_1 + \omega_2}{2}$$

= constant

Thus total energy is transferred back and forth betⁿ two pendula with beat frequency
($2\omega = \omega_2 - \omega_1$)



VISHWASRAO
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VISHWASRAO NAIK ARTS, COMMERCE &
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Shirala, Dist. Sangli, Maharashtra - 415408

Affiliated to Maharashtra University, Kolhapur

(JUNIOR/SENIOR)

EST: JUN-1970

Principal: Dr. R. B. Bansode
M.A. M.Phil. Ph.D.

NAAC GRADE - B

Junior College Grade - B
Junior College No. J. 22-15
UETCE No. 271-0710220

25/02/2024

Notice

All the students of B.Sc. II (Sem-IV) are directed to collect question papers of Home Assignment & submit the answers scripts to the concerned teachers within a month.

It is mandatory to all, failing which the students will not be allowed to appear in final examination.

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VISHWASRAO NAIK ARTS, COMMERCE & BABA NAIK
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DEPARTMENT OF PHYSICS

HOME ASSIGNMENT

HOME ASSIGNMENT

B.Sc-II (SEM-IV) paper-VII (DSC-D1)

Sub: Physics

THERMAL PHYSICS & STATISTICAL MECHANICS-II

Marks: 10

Q.1) Derive an expression for Stefan Boltzmann law & Wein's displacement law from Plank's law.

05

Q.2) Derive an expression for Maxwell Boltzmann law.

05


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P. P. SWAMI VIVEKANAND SEVASHRAM SANSTHA SHIRALA'S
**VISHWASRAO NAIK ARTS, COMMERCE & BABA NAIK
SCIENCE MAHAVIDYALAYA, SHIRALA- 415408**

DEPARTMENT OF PHYSICS

HOME ASSIGNMENT

B.Sc. -II (SEM-IV) paper-VIII (DSC-D2)

Sub: Physics

WAVES & OPTICS - II

Marks: 10

Q.1) Explain graphical construction of image using cardinal point. 05

Q. 2) Explain resolving power of prism & resolving power of plane diffraction grating. 05

Dept. of Physics
Vishwasrao Naik Arts, Commerce
& Baba Naik Science Mahavidyalaya Shirala



P. P. SWAMI VIVEKANAND SEVASHRAM SANSTHA SHIRALA'S
**VISHWASRAO NAIK ARTS, COMMERCE & BABA NAIK
 SCIENCE MAHAVIDYALAYA, SHIRALA- 415408**

DEPARTMENT OF PHYSICS

B.Sc.-II (Sem-IV, Paper-VII&VIII) (2023-24)

RESULT

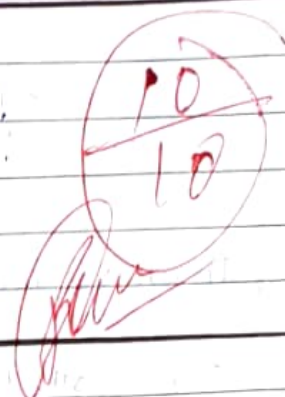
Sr. No.	Name of Students	Marks	
		Paper-VII	Paper-VIII
01	PATIL SANJANA BAJIRAO	10	10
02	KAMBLE ABHISHIK DADU	8	8
03	PATIL PRATIK BABASO	8	7
04	JADHAV PARAS SANJAY	8	8
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 Shirala, Dist. Sangli.

Name :- Janwadkar Sanika Ramchandra.
 Std :- Bsc-II
 Sub :- physics. paper - VIII



Q.1 Derive an expression for Stefan's Bolt's and Weins displacement law.

→ Stefan's law gives the total amount of heat energy radiated by a perfectly black body for all wavelengths per second per unit area. According to Planck's law the energy density inside an enclosure between wavelengths λ and $\lambda + d\lambda$ is given by.

$$\therefore E_{\lambda} d\lambda = \frac{8\pi hc}{\lambda^5} \frac{d\lambda}{(e^{hc/\lambda kT} - 1)}$$

In terms of frequency ν , Planck's law is given by.

$$E_{\nu} d\nu = \frac{8\pi h \nu^3}{c^3} \frac{d\nu}{(e^{h\nu/kT} - 1)}$$

The total radiation energy consisting of all wavelengths or all frequencies is.

$$E = \int_0^{\infty} E_{\nu} d\nu$$

$$\therefore E = \int_0^{\infty} \frac{8\pi h}{c^3} \frac{\nu^3 d\nu}{(e^{h\nu/kT} - 1)}$$

$$\text{Let } x = \frac{h\nu}{kT} \Rightarrow dx = \frac{h}{kT} d\nu \text{ or } d\nu = \frac{kT}{h} dx$$

$$\nu = \frac{kT}{h} x$$

$\therefore$ As $\nu \rightarrow 0$, $x \rightarrow 0$ and as $\nu \rightarrow \infty$, $x \rightarrow \infty$

$$\therefore E = \frac{8\pi h}{c^3} \int_0^{\infty} \frac{k^3 T^3}{h^3} \frac{x^3}{(e^x - 1)} \cdot \frac{kT}{h} dx$$

$$= \frac{8\pi k^4 T^4}{h^3 c^3} \int_0^{\infty} \frac{z^3}{e^z - 1} dz$$

It can be proved that $\int_0^{\infty} \frac{z^3}{e^z - 1} dz = \frac{\pi^4}{15}$

$$\therefore E = \frac{8\pi k^4 T^4}{h^3 c^3} \times \frac{\pi^4}{15}$$

$$E = \left[\frac{8\pi^5 k^4}{15 h^3 c^3} \right] T^4$$

$$\therefore E = AT^4$$

Where $A = \frac{8\pi^5 k^4}{15 h^3 c^3}$

'A' is constant known as total density radiation constant.

This shows that the energy density of radiation is proportional to T^4 .

The radiation coming out per unit area per second from the hole is proportional to the energy density within the enclosure. It is given by:

$$E = \frac{1}{4} cE = \frac{8\pi^5 k^4}{60 h^3 c^3} T^4$$

$$E' = \frac{2}{15} \frac{\pi^5 k^4}{h^3 c^3} T^4$$

$$E' = \sigma T^4$$

Where $\sigma = \frac{2\pi^5 k^4}{15 h^3 c^3}$ is Stefan's constant. It has value:

$$\sigma = 5.67 \times 10^{-8} \text{ (W/m}^2\text{) } \cdot \text{K}^{-4}$$

Thus, the energy radiated per second per unit area by a perfect black body at absolute temperature T is proportional to T^4 .

- Wien's displacement law states that the wavelength λ_m corresponding to maximum energy emission is a universal constant proportional to temperature (T) of the black body.

i.e $\lambda_m T = \text{constant}$

The planck's law of radiation is.

$$E_\lambda = \frac{8\pi hc}{\lambda^5} \cdot \frac{1}{(e^{hc/\lambda kT} - 1)}$$

Wien's displacement law giving the wavelength corresponding to the maximum energy emitted at temperature $T(^{\circ}\text{K})$

for maximum energy emission $\frac{dE_\lambda}{d\lambda} = 0$

$$\therefore \frac{d}{d\lambda} \left[8\pi hc \lambda^{-5} (e^{hc/\lambda kT} - 1)^{-1} \right] = 0$$

$$\therefore 8\pi hc \cdot \frac{d}{d\lambda} \left[\lambda^{-5} (e^{hc/\lambda kT} - 1)^{-1} \right] = 0$$

$$\text{i.e. } \frac{d}{d\lambda} \left[\lambda^{-5} (e^{hc/\lambda kT} - 1)^{-1} \right] = 0$$

$$(e^{hc/\lambda kT} - 1)^{-1} = \frac{(e^{hc/\lambda kT} - 1)^{-2} \cdot e^{hc/\lambda kT} \cdot hc}{5\lambda kT}$$

$$e^{hc/\lambda kT} - 1 = \frac{hc \cdot e^{hc/\lambda kT}}{5\lambda kT}$$

$$e^{hc/\lambda kT} \left[1 - \frac{hc}{5\lambda kT} \right] = 1$$

$$\text{Let } x = \frac{hc}{\lambda kT}$$

$$\therefore e^x \left[1 - \frac{x}{5} \right] = 1$$

$$\Rightarrow \frac{x}{5} = 1 - \frac{1}{e^x}$$

$$\text{i.e. } \Rightarrow x = 5 - \frac{5}{e^x}$$

$$\text{or } x = 4.965$$

But $x = \frac{hc}{\lambda kT}$ is finite quantity and not equal to zero

$$\therefore x = \frac{hc}{\lambda kT} = 4.965$$

$$\therefore \lambda = \frac{hc}{kT} = 4.965$$

$$\text{or } \lambda T = \frac{hc}{k \times 4.965} = \text{constant}$$

$$= 2.898 \times 10^{-3} \text{ m}^\circ\text{K} = b$$

$$| \lambda T = \text{constant } b |$$

This is wien's displacement law correspond to maximum energy emission.

Name :- Patil Rahul vishnu

Std :- B.Sc. II VIII

Sub :- Physics

08
10

Q. 1 Explain Graphical construction of Image using cardinal points.

→ Even without the knowledge of actual refracting surfaces of the optical system, we can construct graphically the position of image of a given object, if we know the cardinal points of the optical system. The point of intersection of any two refracted rays starting from a point object, give the position of image of the point object.

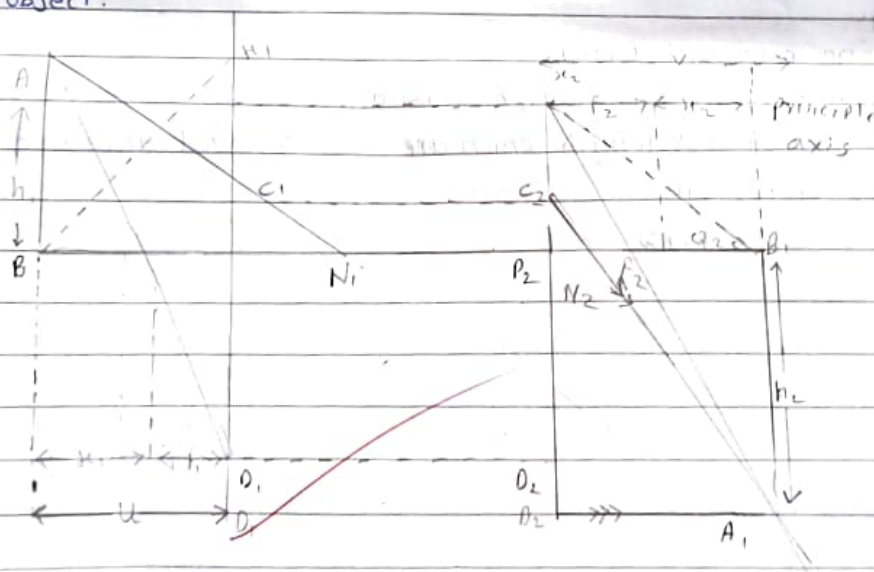


Fig :- Graphical construction of image A_1B_1 of object AB

Let us graphically find the position of image A_1B_1 of an object AB due to an optical system whose focal points are f_1 and f_2 , the principal points are P_1 and P_2 and the nodal points are N_1 and N_2 .

① A ray AX_1 parallel to the principal axis intersects with the first principal plane at X_1 , $\therefore$ the emergent ray will start from a point X_2 on the second principal plane such that $P_1X_1 = P_2X_2$. This ray passes through

f_2 i.e. along H_2F_2 .

2) A ray Ac , directed towards the first nodal point N_1 intersects the first principle plane at c_1 . $\therefore$ the corresponding emergent ray starts from c_2 on second principle plane such that $P_1c_1 = P_2c_2$.

$P_1c_1 = P_2c_2$ & c_2N_2 will be the corresponding emergent ray which is parallel to Ac .

3) A ray like AF_1 passing through first focal point intersects with the first principle plane at D_1 . $\therefore$ the emergent ray start from D_2 on the second Principal plane such that $P_1D_1 = P_2D_2$, finally the emergent ray travel along D_2A_2 parallel to the principle axis.

Q.2 Explain Resolving Power of Prism and Resolving Power Plain diffraction Grating.

→ • Resolving power of a prism :-

Spectral resolving power of prism is given by $\frac{\lambda}{d\lambda}$ where λ and $\lambda + d\lambda$ are two nearby wavelength which are just resolved according to Rayleigh's criterion.

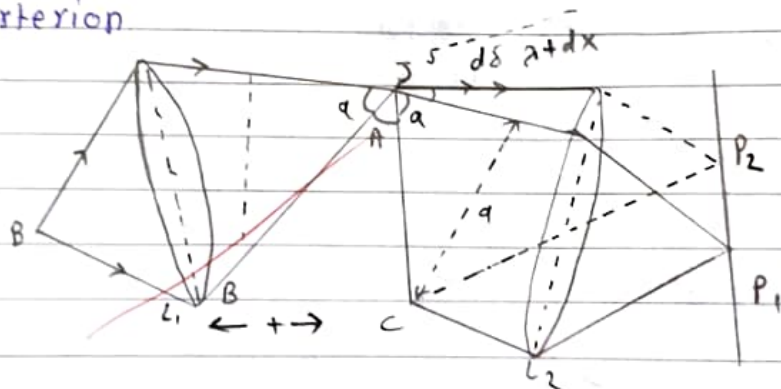


Fig 8- Spectral resolution due to prism

A collimated beam of light having wave length λ and $\lambda + d\lambda$ are incident on the prism. The refracted beam gets dispersed and after passing through telescope lens (L_2), from the spectral images P_1, P_2 in the focal plane of L_2 , the refracting face of the prism limits the beam to a (v) of rectangular section. Rayleigh's criterion

patterns are formed due to rectangular aperture. The spectral images at P_1 and P_2 are just resolved when P_2 is at the first minimum of P_1 corresponding to wave length (λ) which undergoes a deviation (s) and wave length $(\lambda + d\lambda)$ deviates through $(s + ds)$ when the prism is adjusted for minimum deviation position for both λ and $\lambda + d\lambda$ as $d\lambda$ is very small.

Thus when Rayleigh's condition for resolution is satisfied we have

$$a \cdot ds = \lambda$$

From the Fig 2.6 $\alpha + A + \alpha + s = \pi$

$$\therefore \alpha = \frac{\pi}{2} - \left(\frac{A+s}{2} \right)$$

$$\therefore \sin \alpha = \sin \left[\frac{\pi}{2} - \left(\frac{A+s}{2} \right) \right] = \cos \left(\frac{A+s}{2} \right)$$

For minimum deviation position the prism formula is

$$\mu = \sin \frac{A}{2} = \sin \left(\frac{A+s}{2} \right)$$

where μ and s are function of λ .

$\therefore$ Differentiating above eqn w.r.t. λ we get,

$$\frac{d\mu}{d\lambda} = \sin \frac{A}{2} = \cos \left(\frac{A+s}{2} \right) \frac{ds}{d\lambda} = \frac{1}{2}$$

$$\therefore \frac{d\mu}{d\lambda} \cdot \frac{t}{2\lambda} = \frac{a}{2\lambda} \cdot \frac{ds}{d\lambda}$$

$$= \frac{a}{2\lambda} \cdot \frac{\lambda}{a} \cdot \frac{1}{d\lambda}$$

$$\therefore \text{spectral resolving power of prism} = \frac{\lambda}{d\lambda} = t \frac{d\mu}{d\lambda}$$

Thus, the resolving power of prism is proportional to (i) base length (t) of the prism and (ii) change of refractive index of the material of the prism wavel length i.e. $\frac{d\mu}{d\lambda}$

Vishwasrao Naik Arts Commerce and Baba Naik Science
Mahavidyalaya, Shirala.

Department of Marathi
B.A. - III - 2023-24

Paper Name - साहित्यविचार Paper No - ०७

Sr.No	Student Name	Seminar Name	Signature
1	Dange Viswajeet Prabhakar	साहित्यनिर्मितीचे स्वरूप	<u>Dange</u>
2	Gaikwad Mayur Mahadev	प्रयोजन म्हणजे काय	<u>M.M.Gaikwad</u>
3	Jagatap Varsha Vishnu	साहित्य निर्मितीची कारणे	<u>V.V.Jagatap</u>
4	Kasar Abhijeet Shivaji	साहित्यनिर्मितीचे स्वरूप	<u>A.Kasar</u>
5	Khot Reshma Tanaji	साहित्याच्या व्याख्या	<u>R.T.khot</u>
6	Khot Tushar Chandrakan	साहित्य निर्मितीची कारणे	<u>T.C.Khot</u>
7	Mahajan Priyanka Mahendra	साहित्याची प्रयोजने	<u>P.M.Mahajan</u>
8	Mane Suraj Sunil	साहित्यनिर्मितीचे स्वरूप	<u>M.S.Sunil</u>
9	Mirajkar vaishnavi Santosh	साहित्याची निर्मिती	<u>V.M.</u>
10	Patil Ganesh Jagannath	साहित्याच्या व्याख्या	<u>G.Patil</u>
11	Patil Saurabh Chandrakant	साहित्याची प्रयोजने	<u>Patil.S.C. P.S.C.</u>
12	Pawar Ankita Vijaykumar	प्रयोजन म्हणजे काय	<u>A.V.Pawar</u>
13	Pwar Omkar Vijaykumae	साहित्य निर्मितीचीकारणे	<u>O.V.Pawar</u>
14	Sawant Ajay Yuvraj	साहित्याच्या व्याख्या	<u>A.Sawant</u>
15	Sawant Vikas Sambhaji	साहित्यनिर्मितीचे स्वरूप	<u>S.Sawant</u>
16	Talagavkar Vikas Kashinath	प्रतिभेचे अलौकिकत्व	<u>V.K.Talagavkar</u>
17	Thakur Ramu Gopal	साहित्याची प्रयोजने	<u>Thakur</u>

उपप्राचार्य

मराठी विभाग प्रमुख
विश्वासराव नाईक कला, वाणिज्य आणि
बाबा नाईक विज्ञान महाविद्यालय
शिराळा, जि. सांगली

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**Vishwasrao Naik Arts Commerce and Baba Naik
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Department of Marathi
B.A. - III - 2023-24**

Paper Name – मराठी भाषा व भाषाविज्ञान

Paper No – ०८

Sr.No	Student Name	Seminar Name	Signature
1	Dange Viswajeet Prabhakar	भाषा म्हणजे काय?	<u>Dange</u>
2	Gaikwad Mayur Mahadev	वाक्यविचार	<u>M.M.Gaikwad</u>
3	Jagatap Varsha Vishnu	भाषेचा उत्पत्ती सिद्धांत	<u>V. Jagtap</u>
4	Kasar Abhijeet Shivaji	भाषेचा उत्पत्ती सिद्धांत	<u>A. Kasar</u>
5	Khot Reshma Tanaji	भाषा म्हणजे काय?	<u>R.T. Khot</u>
6	Khot Tushar Chandrakant	वाक्यविचार	<u>T.C. Khot</u>
7	Mahajan Priyanka Mahendra	सी.एफ. हॅकेट यांनी सांगितलेली भाषेची सात वैशिष्ट्ये	<u>P.M. Mahajan</u>
8	Mane Suraj Sunil	भाषेचा उत्पत्ती सिद्धांत	<u>M.S. Mane</u>
9	Mirajkar vaishnavi Santosh	भाषा म्हणजे काय?	<u>VM</u>
10	Patil Ganesh Jagannath	भाषा म्हणजे काय?	<u>G. Patil</u>
11	Patil Saurabh Chandrakant	भाषेचा उत्पत्ती सिद्धांत	<u>Patil S.C</u>
12	Pawar Ankita Vijaykumar	सी.एफ. हॅकेट यांनी सांगितलेली भाषेची सात वैशिष्ट्ये	<u>A.V. Pawar</u>
13	Pwar Omkar Vijaykumae	सी.एफ. हॅकेट यांनी सांगितलेली भाषेची सात वैशिष्ट्ये	<u>O.V. Pwar</u>
14	Sawant Ajay Yuvraj	भाषेचा उत्पत्ती सिद्धांत	<u>A. Sawant</u>
15	Sawant Vikas Sambhaji	वाक्यविचार	<u>S. Sawant</u>
16	Talagavkar Vikas Kashinath	भाषेचा उत्पत्ती सिद्धांत	<u>V.K. Talagavkar</u>
17	Thakur Ramu Gopal	वाक्यविचार	<u>R. Thakur</u>


मराठी विभाग प्रमुख

विश्वासराव नाईक कला, वाणिज्य आणि
बाबा नाईक विज्ञान महाविद्यालय
शिराळा, जि. सांगली


उप प्राचार्य,

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Department of Marathi
B.A. - III - 2023-24**

Paper Name – मराठी वाङ्मयाचा इतिहास

Paper No – ०९

Sr.No	Student Name	Seminar Name	Signature
1	Dange Viswajeet Prabhakar	साथीग्रंथ	<u>Dange</u>
2	Gaikwad Mayur Mahadev	आद्यकवी मुकुंदराज	<u>M.M. Gaikwad</u>
3	Jagatap Varsha Vishnu	साथीग्रंथ	<u>V. Jagatap</u>
4	Kasar Abhijeet Shivaji	आद्यकवी मुकुंदराज	<u>Asar</u>
5	Khot Reshma Tanaji	साथीग्रंथ	<u>R.T. Khot</u>
6	Khot Tushar Chandrakant	आद्यकवी मुकुंदराज	<u>T.C. Khot</u>
7	Mahajan Priyanka Mahendra	आद्यकवी मुकुंदराज	<u>P.M. Mahajan</u>
8	Mane Suraj Sunil	आद्यकवी मुकुंदराज	<u>M.S. Sunil</u>
9	Mirajkar vaishnavi Santosh	रुक्मिणी स्वयंवर या ग्रंथाचा परिचय	<u>VSM</u>
10	Patil Ganesh Jagannath	आद्यकवी मुकुंदराज	<u>Gat</u>
11	Patil Saurabh Chandrakant	दृष्टांत पाठाचे महत्त्व	<u>Patil. S.C</u>
12	Pawar Ankita Vijaykumar	दृष्टांत पाठाचे महत्त्व	<u>A.V. Pawar</u>
13	Pwar Omkar Vijaykumae	साथीग्रंथ	<u>O.V. Pawar</u>
14	Sawant Ajay Yuvraj	दृष्टांत पाठाचे महत्त्व	<u>Sawant</u>
15	Sawant Vikas Sambhaji	साथीग्रंथ	<u>Sawant</u>
16	Talagavkar Vikas Kashinath	आद्यकवी मुकुंदराज	<u>V.K. Talagavkar</u>
17	Thakur Ramu Gopal	साथीग्रंथ	<u>Thakur</u>


मराठी विभाग प्रमुख
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शिराळा, जि. सांगली

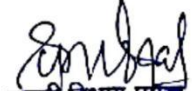

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**Vishwasrao Naik Arts Commerce and Baba Naik
Science Mahavidyalaya, Shirala.
Department of Marathi
B.A. - III - 2023-24**

Paper Name – मराठी भाषा व अर्थार्जनाच्या संधी

Paper No – १०

Sr.No	Student Name	Seminar Name	Signature
1	Dange Viswajeet Prabhakar	कथा संकल्पना व स्वरूप	<u>V.Dange</u>
2	Gaikwad Mayur Mahadev	कथेचे मुख्य घटक	<u>M.M.Gaikwad</u>
3	Jagatap Varsha Vishnu	कथा संकल्पना व स्वरूप	<u>V.V.Jagatap</u>
4	Kasar Abhijeet Shivaji	कथा संकल्पना व स्वरूप	<u>A.Kasar</u>
5	Khot Reshma Tanaji	कथेचे मुख्य घटक	<u>R.T.khot</u>
6	Khot Tushar Chandrakant	कथा संकल्पना व स्वरूप	<u>T.C.Khot</u>
7	Mahajan Priyanka Mahendra	अर्थार्जनाच्या संधी	<u>P.M.mahajan</u>
8	Mane Suraj Sunil	कथा संकल्पना व स्वरूप	<u>M.S.Sunil</u>
9	Mirajkar vaishnavi Santosh	कथेचे मुख्य घटक	<u>VM</u>
10	Patil Ganesh Jagannath	कथेचे मुख्य घटक	<u>Gadit</u>
11	Patil Saurabh Chandrakant	अर्थार्जनाच्या संधी	<u>Patil.S.C</u>
12	Pawar Ankita Vijaykumar	कथेचे मुख्य घटक	<u>A.V.Pawar</u>
13	Pwar Omkar Vijaykumae	अर्थार्जनाच्या संधी	<u>O.V.Pwar</u>
14	Sawant Ajay Yuvraj	कथा संकल्पना व स्वरूप	<u>A.Sawant</u>
15	Sawant Vikas Sambhaji	कथा संकल्पना व स्वरूप	<u>S.Sawant</u>
16	Talagavkar Vikas Kashinath	कथेचे मुख्य घटक	<u>V.R.Talagavkar</u>
17	Thakur Ramu Gopal	कथा संकल्पना व स्वरूप	<u>R.G.Thakur</u>


मराठी विभाग प्रमुख
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बाबा नाईक विज्ञान महाविद्यालय
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अस. प्राचार्य
विश्वासराव नाईक कला, वाणिज्य शाखा
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शिराला, जि. सांगली

**Vishwasrao Naik Arts Commerce and Baba Naik
Science Mahavidyalaya, Shirala.
Student List**

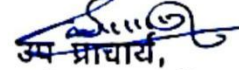
Department of Marathi २०२२ - २३

Paper Name – वाङ्मय प्रवाहाचे अध्ययन

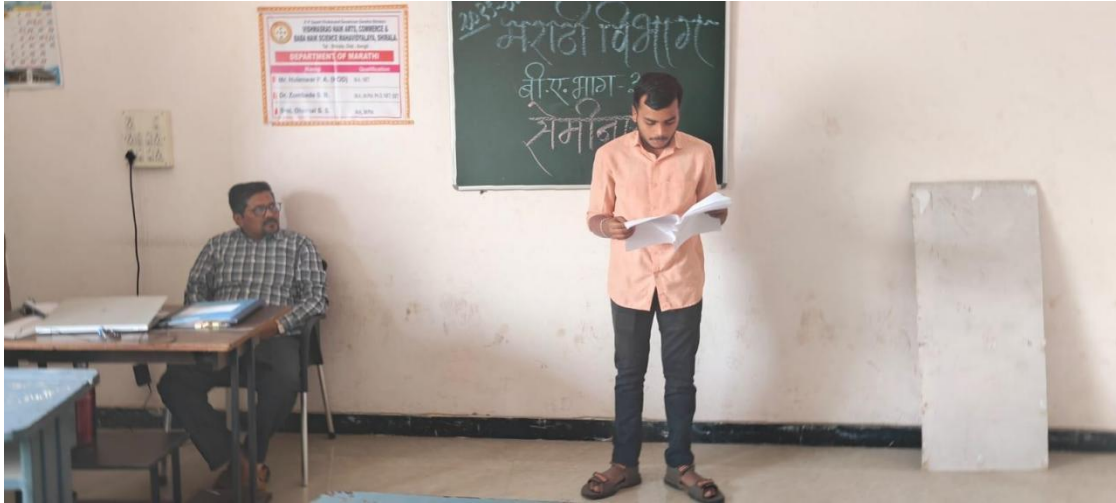
Paper No – ११

Sr.No	Student Name	Seminar Name	Signature
1	Dange Viswajeet Prabhakar	ललित गद्य संकल्पना आणि स्वरूप	<u>V. Dange</u>
2	Gaikwad Mayur Mahadev	ललित गद्य संकल्पना	<u>M. Gaikwad</u>
3	Jagatap Varsha Vishnu	व्यक्तीचित्रे वैशिष्ट्ये आणि वाटचाल	<u>V. Jagtap</u>
4	Kasar Abhijeet Shivaji	व्यक्तीचित्रे लेखनासाठी आवश्यक गुण	<u>A. Kasar</u>
5	Khot Reshma Tanaji	ललित गद्य संकल्पना	<u>R. T. Khot</u>
6	Khot Tushar Chandrakant	व्यक्तीचित्रे वैशिष्ट्ये आणि वाटचाल	<u>T. C. Khot</u>
7	Mahajan Priyanka Mahendra	लिंगायत संप्रदायाचे वेगळेपण	<u>P. M. Mahajan</u>
8	Mane Suraj Sunil	लेखनासाठी आवश्यक गुण	<u>M. S. Mane</u>
9	Mirajkar vaishnavi Santosh	सामाजिक व धार्मिक वातावरण	<u>V. M.</u>
10	Patil Ganesh Jagannath	ललितगद्य संकल्पना	<u>G. Patil</u>
11	Patil Saurabh Chandrakant	ललितगद्य संकल्पना	<u>Patil. S. C.</u>
12	Pawar Ankita Vijaykumar	व्यक्तीचित्रे लेखनासाठी आवश्यक गुण	<u>A. V. Pawar</u>
13	Pwar Omkar Vijaykumae	व्यक्तीचित्रे लेखनासाठी आवश्यक गुण	<u>O. V. Pwar</u>
14	Sawant Ajay Yuvraj	ललितगद्य संकल्पना	<u>A. Sawant</u>
15	Sawant Vikas Sambhaji	व्यक्तीचित्रे लेखनासाठी आवश्यक गुण	<u>S. Sawant</u>
16	Talagavkar Vikas Kashinath	व्यक्तीचित्रे वैशिष्ट्ये आणि वाटचाल	<u>V. K. Talagavkar</u>
17	Thakur Ramu Gopal	ललितगद्य संकल्पना	<u>T. Thakur</u>


मराठी विभाग प्रमुख
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अध्यक्ष,
विश्वासराव नाईक कला, वाणिज्य आणि
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सेमिनार २०२३ -२४



Students Seminar

2023-24



P.P. Swami Vivekanand Sevashram Sanstha, Shirala's
**VISHWASRAO NAIK ARTS, COMMERCE &
BABA NAIK SCIENCE MAHAVIDYALAYA, SHIRALA**
Tal.: Shirala, Dist.: Sangli, Maharashtra - 415408



NAAC GRADE - 'B'

Junior College Code : 15
Junior College No. J-22-09-001
UDISE No.: 27350713220

(Affiliated to Shivaji University, Kolhapur.)
(JUNIOR/SENIOR)

EST : JUN-1970

Principal : **Dr. R. B. Bansode**
M.A., M.Phil., Ph.D.

(02345) 272107 ✉ vishwasraonaik@rediffmail.com 🌐 www.vnbnmshirala.org

Out Ward No. V.N.M. / /

Date : / / 20

Date: 20/10/2023

Department of Botany

Notice

All the students of the B.Sc. II (Botany) are informed that Department of Botany has organized Seminar Competition on 27th and 28th October 11.30 a.m. at Science Lecture Hall.




Principal,
**Vishwasrao Naik Arts, Com. &
Baba Naik Science Mahavidyalaya**
Shirala, Dist. Sangli,



Vishwasrao Naik Arts, Commerce & Baba Naik Science Mahavidyalaya, Shirala

DEPARTMENT OF BOTANY

Seminar Competition

Year- 2023-2024

Class – B.Sc.-II

Result

Sr. No	Name of the Students	Marks out of 10
1.	Badade Shital Sampat	06
2.	Bhanuse Sakshi Balaso	06
3.	Khot Prachi Sanjay	08- 3rd Rank
4.	Pawar Supriya Yashwant	04
5.	Gavali Aparna Mahendra	05
6.	Patil Prajakta Dadaso	06
7.	Patil Sanjana Bajirao	07
8.	Khandekar Pranav Mansing	07
9.	Sawant Ekata Sambhaji	09 – 2nd Rank
10.	Pawar Payal Vasant	05
11.	Patil Sumed Sunil	06
12.	Patil Dipak Bhimrao	07
13.	Teli Vaishnavi Dhondiram	05
14.	Wagh Savita Ananda	04
15.	Jadhav Supriya Arjun	07
16.	Shevale Ruturaj Bharat	05
17.	Pirjade Ruksar Jainolabddin	06
18.	Naikawadi Irfan Ismail	08- 3rd Rank

19.	Parit Mayuri Maruti	04
20.	Mamlekar Prachi Sanjay	07





NAAC GRADE - 'B'

Junior College Code : 15
Junior College No. J-22-09-001
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P.P. Swami Vivekanand Sevashram Sanstha, Shirala's
**VISHWASRAO NAIK ARTS, COMMERCE &
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STUDENTS SEMINAR NOTICE

This is informed to all **B.Sc.-III (Sem. VI)** students that the Department of Chemistry has organized student's seminar in between **20/02/2024-23/02/2024** at 8.30 a.m. at Seminar Hall. All the students are requested to deliver their seminars on scheduled date.

Topics for Seminar (Any one)

1. Nuclear chemistry
2. Name reactions
3. Thermodynamics
4. Sugar industry

HEAD
Deptt. of Chemistry
Vishwasrao Naik Arts, Commerce &
Baba Naik Science Mahavidyalaya, Shirala

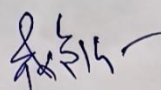
Table- List of the Students with Topics of Seminar

Sr. No.	Name of the students (Seminar given)	Topic of Seminar
1	Pawar Arati Bhimrao	Types of Nuclear reactions
2	Undalkar Vivek Ashok	Applications of radio isotopes
3	Wagh Sayali Yuvraj	Use of Th, U, and Pu in atomic energy
4	Zade Sonu Yashwant	Energetics of nuclear reactions
5	Patil Srushti Shashikant	Diels-Alder reaction
6	Patil Rajshri Babaso	Hoffman rearrangement
7	Patil Sanika Maruti	Baeyer- Villiger oxidation
8	Nalawade Rutvik Rajaram	Wagner- Meerwein rearrangement
9	Naikawadi Jayvanta Maruti	Gibbs- Helmholtz equation
10	Mane Karan Madhukar	Phase equilibrium
11	Mahadik Sunny Satish	Fugacity and activity
12	Kalantre Mayuri Shamkar	Gibbs- Duhem equation
13	Jadhav Avinash Hanamant	Manufacture of cane sugar
14	Harchirkar Nazaneen Abdula	Byproducts of sugar industry
15	Chavan Padmaja Pandurang	Manufacture of Ethanol from molasses


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Table- List of the Students with Topics of Seminar and Sign.

Sr. No.	Name of the students (Seminar given)	Topic of Seminar	Sign.
1	Pawar Arati Bhimrao	Types of Nuclear reactions	<i>[Signature]</i>
2	Undalkar Vivek Ashok	Applications of radio isotopes	<i>[Signature]</i>
3	Wagh Sayali Yuvraj	Use of Th, U, and Pu in atomic energy	<i>[Signature]</i>
4	Zade Sonu Yashwant	Energetics of nuclear reactions	<i>[Signature]</i>
5	Patil Srushti Shashikant	Diels-Alder reaction	<i>[Signature]</i>
6	Patil Rajshri Babaso	Hoffman rearrangement	<i>R.B. Patil</i>
7	Patil Sanika Maruti	Baeyer- Villiger oxidation	<i>[Signature]</i>
8	Nalawade Rutvik Rajaram	Wagner- Meerwein rearrangement	<i>[Signature]</i>
9	Naikawadi Jayvanta Maruti	Gibbs- Helmholtz equation	<i>[Signature]</i>
10	Mane Karan Madhukar	Phase equilibrium	<i>Mane K.M.</i>
11	Mahadik Sunny Satish	Fugacity and activity	<i>[Signature]</i>
12	Kalantre Mayuri Shamkar	Gibbs- Duhem equation	<i>[Signature]</i>
13	Jadhav Avinash Hanamant	Manufacture of cane sugar	<i>[Signature]</i>
14	Harchirkar Nazaneen Abdula	Byproducts of sugar industry	<i>[Signature]</i>
15	Chavan Padmaja Pandurang	Manufacture of Ethanol from molasses	<i>[Signature]</i>


HEAD
 Deptt. of Chemistry
 Vishwasrao Naik Arts, Commerce &
 Baba Naik Science Mahavidyalaya, Shirala

Students seminar attendance 20/02/2024-23/02/2024		
Sr. No.	Name of Students	Signature
①	Mayuri Shankar Kulantre	<u>Mkulantre</u>
②	Arati Bhimrao Pawar	<u>Arati</u>
③	Sanika Manuti Patil	<u>SPatil</u>
④	Srushti Shashikant Patil	<u>SPatil</u>
⑤	Vivek Ashok Underkar	<u>VU</u>
⑥	Harshal Ganapati Vibhute	<u>Hvibhute</u>
⑦	Sony Yashwantrao Zade	<u>SZade</u>
⑧	Dilip Vasant Patil	<u>DPatil</u>
⑨	Shrineth Ganesh Gavane	<u>SGavane</u>
⑩	Aditya Sanjivkumar Tadhar	<u>ATadhar</u>
⑪	Shubham Ashok Tadhar	<u>STadhar</u>
⑫	Prathamesh Sambhaji Patil	<u>SPatil</u>
⑬	Pratik Prakash Kachare	<u>PKachare</u>
⑭	Avinash Hanamant Tadhar	<u>ATadhar</u>
⑮	Karan Madhekar Mane	<u>KMane</u>
⑯	Patil Omkar Pindachao	<u>OPatil</u>
⑰	Kadam Prathamesh Rangrao	<u>PRangrao</u>
⑱	Nikhil Vilas Chougale	<u>NChougale</u>
⑲	Jayvanta Manudi Naikawadi	<u>JNaikawadi</u>
⑳	Rushikesh Jalindar Mahind	<u>RJMahind</u>
㉑	Vaishnavi Suresh Mane	<u>VMane</u>
㉒	Sayali Yuvraj Wagh	<u>SWagh</u>
㉓	Swagun BalKrushna Patil	<u>SPatil</u>
㉔	Rutvik Rajaram Nalawade	<u>RNalawade</u>
㉕	Chaitanya Bhaat Patil	<u>CBPatil</u>
㉖	Najeeb Badroddin Pirjade	<u>NBP</u>
㉗	Vishakha Baburao Patil	<u>VPatil</u>

VISHWASRAO NAIK ARTS, COMMERCE & BABA NAIK SCIENCE MAHAVIDYALAYA, SHIRALA.

23-24

✓28	Nazneen Abdulla Harchirkar	Abdulla
✓29	Komal machindra Patil	(Kimpoti)
✓30	ABHISHEK AJAY NIKAM	Sanikar
✓31	Sarika Ashok Kamble	Skamble
✓32	Nilesh Mahadev Tadha	Nidha
✓33	Anuja Musaji Pawar	Anawar
✓34	Sanika Basmahandra Patil	Patil
✓35	Vinay Jaywant Khandekar	Khandekar
✓36	Kajal laxman Shinde	K.L. Shinde
*37	Pankaj Sanjay Mulik	Pankaj
✓38	Suresh Shankar Kule	S.
✓39	Suraj Sanjay Patil	Suraj
✓40	Anyandeep Arjun Kachare	Ankore
✓41	Vishvajit Dipak Gaikwad	Gaikwad
✓42	Komal Nandeep Desai	Desai
✓43	Kalyani Suresh Dhadam	Dhadam
✓44	Poiti Nandeep Chougale	Chougale
✓45	Patil Vinayak Shivaji	Patil
✓46	Padamja Pandurang Chavan	Chavan
✓47	Sunny Satish Mahadik	Mahadik
✓48	Sanket Popat Bhalekar	Bhalekar
✓49	Omkar Namdev Patil	Patil
✓50	Milind Kisan Bhise	Bhise
✓51	Pooja Renuk Sajiwar	Sajiwar
✓52	Rajashri Babasaheb Patil	R.B. Patil
✓53	Aftab Kasam Mullu	Mullu
✓54	Omkar Tanaji Khot	Khot
✓55	Naikawadi Sufiya Jemali	Naikawadi
✓56	Shrawan Aniket Bhagwan	Shrawan

SHWASRAO NAIK ARTS, COMMERCE & BABA NAIK SCIENCE MAHAVIDYALAYA, SHIRALA.





NAAC Grade - B

P. P. Swami Vivekanand Sevashram Sanstha, Shirala's

VISHWASRAO NAIK ARTS, COMMERCE & BABA NAIK SCIENCE MAHAVIDYALAYA, SHIRALA

(Affiliated to Shivaji University, Kolhapur)



EST : JUN-1970

Junior College Code : 15
Junior College No. J-22-09-001
UDISE No. : 27350713220

Tal. : Shirala, Dist. Sangli, Maharashtra-415408

Principal : **Dr. R. B. BANSODE**

M.A., M.Phil., Ph.D.

Member of Senate

Shivaji University, Kolhapur

(JUNIOR / SENIOR)

Website : www.vnbnmshirala.org ■ Email : vishwasraonaik@rediffmail.com ■ Phone : (02345) 272107

Out Ward No. V.N.M. / /

Date : / / 20

Department of Commerce

Notice

Date: - 18/12/2023

All the B.Com-III students of the department of Commerce are hereby informed that department has arranged presentation of seminar on 26th Dec 2023, at 11.30 am at department of Commerce. All students are instructed to attend the same.

Mr.B.R.Dashwant

Vice-Principal & HOD



Photo Gallery



B.W.M III

Date : - 26-12-23

Seminar - 2022-23

- 1) Sueve Nameata Kisan BKaul
- 2) Chavan ~~Bajirao~~ Jayshei Bajirao Chavan
- 3) Kumbhar Nilam Subhosh Nilam
- 4) Patil Ruchita Dhulgonda Patil
- 5) Kirti Manik Khabale KK
- 6) Rutuja Vilas Khot RKhot
- 7) Punam Sakharam Patil Patil
- 8) Dipika Suresh Patil Patil
- 9) Gouri Hanamant Chitambar Gurambar
- 10) Anushri Vishwas Yadav Anushri
- 11) Ashwini Mohan Patil Ashwini
- 12) Sanjivani Babaso Hande Hande
- 13) Sujata Dipak Sawant Sawant
- 14) Pooja Dinkar Patil Patil
- 15) Dipali Shivaji Patil Patil
- 16) Sonali Shivaji Jadhav SSJadhav
- 17) Komal Nanasa Kumbhar KKumbhar
- 18) Rupali Dipak Ghode R
- 19) Poonam Maruti Salunkhe Salunkhe
- 20) Swapnali Tukaram Malik SMalik
- 21) Dipali Suresh Mahind. SMahind.
- 22) Minal Shankar Mahind. SMahind
- 23) Mugdha Baban Nangare GNangare
- 24) Sulake Ankita Jaysing Sulake
- 25) Jyoti Ramnath Patil Patil
- 26) Anjali Suresh Paralekar Paralekar





P. P. Swami Vivekanand Sevashram Sanstha, Shirala's

VISHWASRAO NAIK ARTS, COMMERCE & BABA NAIK SCIENCE MAHAVIDYALAYA, SHIRALA



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14/02/2024

STUDENTS SEMINAR NOTICE

This is informed to all **B.Sc.-I & II** students that the Department of Physics has organized student's seminar in between **17/02/2024-18/02/2024** at 9.00 a.m. at Physics Lab. All the students are requested to deliver their seminars on scheduled date.

Topics for Seminar (Any one)

Sr. No.	Seminar Topics	
	B.Sc-I	B.Sc-II
	Gravitation	Thermodynamics
	Elasticity	Waves & Optics
	Electrostatics	Thermometry
	Vector Calculus	Sound & Acoustics

Table- List of the Students with Topics of Seminar

B.Sc-I

Sr. No.	Name of the students (Seminar given)	Topic of Seminar
1	ATTAR AMAN AYAJU	Newton's law of Gravitation
2	BANSODE JYOTI VISHWAS	Kepler's laws
3	BHEDASE SWAPNIL KESHAV	Basic idea of GPS
4	DESAI HARSHWARDHAN SANJAY	Hooke's law
5	DUBULE POOJA TANAJI	Definitions of Elastic constants
6	HAVALDAR OMKAR MAHADEV	Torsional oscillations
7	JADHAV RUSHIKESH DILIP	Motion of particle in a central force field
8	JADHAV SHITAL DNYANDEV	Weightlessness
9	KADAM PRANALI HANMANTRAO	Gradient, Divergence & Curl
10	KAVAR SAKSHI SHANKAR	Scalar field & its physical significance
11	KHOT SANGRAM KISAN	Line integral
12	KINARE KARAN BALU	Gauss theorem of electrostatics
13	NAIK SANIKA BALIRAM	Electric potential
14	NALAWADE RUTUJA RAJARAM	Spherical & Cylindrical condenser
15	PADALKAR AVIRAJ AJIT	Gauss theorem in Dielectrics
16	PATIL RUTUJA SANDIP	Parallel plate Capacitor
17	PATIL SANGRAM SANDIP	Scalar & Vectors
18	PATIL SHIVAM RAMCHANDRA	Scalar Triple Product
19	PATIL VAISHNAVI NAMDEV	Electric Dipole

20	PAWALE SURAJ NAMDEV	Isolated Spherical Conductor
21	PAWAR SWAPNIL SURESH	Gauss Divergence theorem
22	SURYAWANSHI RUSHIKESH RAJARAM	Vector triple product

Table- List of the Students with Topics of Seminar
B.Sc-II

Sr. No.	Name of the students (Seminar given)	Topic of Seminar
1	PATIL SANJANA BAJIRAO	Thermodynamic Functions
2	KAMBLE ABHISHEK DADU	Entropy
3	PATIL PRATIK BABASO	Cardinal Points
4	JADHAV PARAS SANJAY	Zeroth law & First law of thermodynamics
5	JANWADKAR SANIKA RAMCHANDRA	Wave motion
6	KHOT SHRUTIKA SUNIL	Experimental determination of coefficient of viscosity by Poiseuille's method
7	LOHAR AVISHKAR CHANDRAKANT	Searle's Viscometer
8	PATIL RITESH ABASO	Sabine's formula for reverberation time
9	PATIL RAHUL VISHNU	Group & Phase velocity
10	PATIL RENUKA SOPAN	Piezo-electric effect
11	PATIL SUMIT BAJIRAO	Frequency of coupled oscillatory system
12	SATHE ARJUN HARIBA	Principle of Thermometry
13	SHIVJATAK NIRANJAN VISHVNATH	Mean free path
14	KHANDEKAR PRANAV MANSING	Clausius & Maxwell's Equation
15	PATIL RUTUJA CHANDRAKANT	Types of thermometers

