

People's Education Society's (Mumbai)
MILIND COLLEGE OF SCIENCE, AURANGABAD
Nagsenvana Aurangabad- 431002

B. Sc- I Year (I & II Sem.) Students for Academic year 2020-2021(Fishery Group)

FAST LEARNERS STUDENTS

| Roll No. | Name of the Student | MARKS | MARKS |
|-----------------|----------------------------|--------------|--------------|
| 65 | GHATE NEHA AJAY | 18 | Eighteen |
| 66 | INGLE AISHWARYA SANTOSH | 20 | Twenty |
| 67 | LOKHANDE ROHINI BABAN | 16 | Sixteen |
| 68 | PATHARE SAKSHI KIRAN | 18 | Eighteen |
| 69 | SALVE MANJUSHA ANIL | 20 | Twenty |
| 71 | TADAVI MUSKAN RAMJAN | 20 | Twenty |
| 75 | SALVE SHUBHANGI GAUTAM | 20 | Twenty |

REMARKS:-

For the fast learner students we have provided forign author books to refer for their studies and also we have provide PPT on particular topics, send links of animation videos on their whatsapp group which available on internet.

Discussion session also was taken on online platform on Google meeting/ Zoom meting.

SLOW LEARNERS STUDENTS

| Roll No. | Name of the Student | MARKS | MARKS |
|-----------------|-----------------------------|--------------|--------------|
| 64 | CHAVAN VIJAY MADHUKAR | 12 | Twelve |
| 70 | SARODE SANGHPRIYA DATTATRAY | 14 | Fourteen |
| 72 | THORVE RAHUL KHANDU | 10 | Tenth |
| 73 | GORE NITIN ASHOK | 12 | Twelve |
| 74 | PANDIT SANJANA UDDHAV | 14 | Fourteen |

REMARKS:-

For slow learners students we have taken extra classes, essay notes (Own written) were provided, plus we have also provided the Indian author books according their syllabus. We also have kept doubt session to personally interaction of each student for clear his/her doubts on hard topic and suggestion were given as well.

You're sincerely

Dr. D.C. Wagh

Assistant Professor (CHB)
Department of Zoology
& Fishery Science
Milind College of Science,
Aurangabad (MS) India

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MILIND COLLEGE OF SCIENCE, AURANGABAD
 Nagsenvana Aurangabad- 431002
B. Sc- I Year (I & II Sem) Students for Academic year 2020-2021
(Zoology- Group)

FAST LEARNER STUDENTS

| Roll No. | NAME OF THE STUDENT | Marks | Remarks |
|-----------------|------------------------------|--------------|----------------|
| 2 | AMBADE RAKSHIT UTTAM | 16 | Sixteen |
| 3 | ASWALE RAHUL RAVINDRA | 18 | Eighteen |
| 4 | ATHAWALE MAHIMA ANAND | 20 | Twenty |
| 5 | BABHULKAR PUNAM GOVARDHAN | 18 | Eighteen |
| 6 | BANKAR SACHINN PUNDLIK | 16 | Sixteen |
| 7 | BANSODE ROHIT PRAKASH | 16 | Sixteen |
| 10 | BHILANGE RUSHIKESH KAMALAKAR | 18 | Eighteen |
| 11 | BORDE GAYATRI GORAKHNATH | 20 | Twenty |
| 12 | CHARATE GANESH DEVANAND | 16 | Sixteen |
| 13 | DAMODAR ALISHA SHRIPAT | 20 | Twenty |
| 14 | DHOKANE SACHIN DADARAO | 18 | Eighteen |
| 15 | GADEKAR SIDDHANT BHIMRAO | 16 | Sixteen |
| 16 | GAIKWAD RUTUJA VIJAY | 20 | Twenty |
| 17 | GAWAI SACHIN DATTATRAYA | 18 | Twenty |
| 18 | GHODKE SUCHITA DILIP | 20 | Twenty |
| 19 | GHORPADE SURAJ PRAKASH | 18 | Eighteen |
| 20 | HIWALE NEHA PRABHAKAR | 20 | Twenty |
| 21 | INGALE ANANDA NINA | 20 | Twenty |
| 22 | JADHAV ALOK KISHOR | 16 | Sixteen |
| 23 | JADHAV AVANTIKA RAHUL | 18 | Eighteen |
| 24 | JADHAV SNEHA SANTOSHKUMAR | 20 | Twenty |

| | | | |
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| 25 | JALNAWALA FATEMA ZAKEER HUSSAIN | 16 | Sixteen |
| 26 | JOGDAND VISHAKHA SHANKAR | 20 | Twenty |
| 27 | KAMBLE MINAKSHI SUNIL | 18 | Eighteen |
| 28 | KAMBLE PRATAP VASANT | 18 | Eighteen |
| 31 | LAHARE URVESHU UMESH | 20 | Twenty |
| 32 | MHASKE VAIBHAV SUDHAKAR | 18 | Eighteen |
| 33 | MUGDAL VIKAS NANA | 20 | Twenty |
| 34 | NALAWADE KISHOR NARHARI | 16 | Sixteen |
| 35 | NIRMALE PRADNYA MADHUKAR | 18 | Eighteen |
| 42 | SABLE JYOTI DHONDIRAM | 18 | Eighteen |
| 43 | SALVE AJAY VILAS | 18 | Eighteen |
| 46 | SATPUTE AJAY MADHUKAR | 18 | Eighteen |
| 48 | SHAIKH SOHEL JAFAR | 20 | Twenty |
| 49 | SHEJWAL HRUTUJA VASANT | 18 | Eighteen |
| 50 | SHINDE AISHWARYA SHIVAJI | 20 | Twenty |
| 51 | SONARE SWAPNIL AJABSING | 20 | Twenty |
| 52 | SONAWANE KADAMBARI MANOJKUMAR | 20 | Twenty |
| 53 | SURYAWANSHI ARYAN SATISH | 18 | Eighteen |
| 54 | SUTAR POOJA VIJAY | 20 | Twenty |
| 55 | TAYADE VIKAS GOKUL | 18 | Eighteen |
| 56 | TAYADE ROHIT ARJUN | 16 | Sixteen |
| 57 | TAYADE VIKAS GAUTAM | 16 | Sixteen |
| 58 | TURUKMANE ROHIT KISAN | 18 | Eighteen |
| 59 | WADHAVE MAHESH PANDITRAO | 16 | Sixteen |
| 60 | WAGH BALIRAM VITTHAL | 18 | Eighteen |
| 61 | WAGHMARE JAYESH VISHAL | 18 | Eighteen |
| 62 | WANKHEDE RUTUJA GAUTAM | 20 | Twenty |
| 63 | WANKHEDE VIKAS DEVIDAS | 20 | Twenty |

| | | | |
|----|-------------------------------|----|----------|
| 65 | GHATE NEHA AJAY | 18 | Eighteen |
| 66 | INGLE AISHWARYA SANTOSH | 20 | Twenty |
| 67 | LOKHANDE ROHINI BABAN | 16 | Sixteen |
| 68 | PATHARE SAKSHI KIRAN | 18 | Eighteen |
| 69 | SALVE MANJUSHA ANIL | 20 | Twenty |
| 71 | TADAVI MUSKAN RAMJAN | 20 | Twenty |
| 75 | SALVE SHUBHANGI GAUTAM | 20 | Twenty |
| 77 | GANGAWANE ROHIT RAJU | 18 | Eighteen |
| 78 | KAWALE BHUSHAN DNYANDEV | 16 | Sixteen |
| 79 | KHARAT BHAVNA SIDDHARATH | 18 | Eighteen |
| 80 | KHILLARE PRIYANKA GAUTAM | 16 | Sixteen |
| 81 | PATHARE YASH DEEPAK | 18 | Eighteen |
| 82 | SAWALE DIPAK BHIMARAO | 16 | Sixteen |
| 83 | SONKAMBLE SAHEBRAO BHASKAR | 18 | Eighteen |
| 84 | BANSODE TUSHAR RAHUL | 20 | Twenty |
| 85 | BANSODE VIRENDRA RAJENDRA | 20 | Twenty |
| 86 | INGALE NAYAN SUNIL | 20 | Twenty |
| 87 | JADHAV SANDESH VASANT | 18 | Eighteen |
| 88 | PATHAN FAHAD KHAN ARSHAD KHAN | 18 | Eighteen |

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SLOW LEARN STUDENTS

| Roll No. | NAME OF THE STUDENT | Marks | Remarks |
|-----------------|-------------------------------|--------------|----------------|
| 1 | ACHALKHAMB YOGESH BHIMRAO | 12 | Twelve |
| 8 | BATTISE SHRADHA LALEETKUMAR | 10 | Tenth |
| 9 | BHAGURE VINOD BALASAHEB | 12 | Twelve |
| 29 | KHANDARE DHAMMAPAL MAHADEO | 14 | Fourteen |
| 30 | KHETRE KUNAL JAGANNATH | 10 | Tenth |
| 36 | PATEKAR BABASAHEB ANIL | 12 | Twelve |
| 37 | PATTEKAR PUSHKAR SANTOSH | 12 | Twelve |
| 38 | PAWAR DIPALI PRAKASH | 12 | Twelve |
| 39 | PAWAR SHUBHAM SOMINATH | 12 | Twelve |
| 40 | PAWAR SUNIL PARMESHWAR | 10 | Tenth |
| 41 | PRADHAN ABHISHEK CHANDRAVIJAY | 10 | Tenth |
| 44 | SARDAR PREM SUBHASH | 12 | Twelve |
| 45 | SARDAR SWAPNIL KISAN | 12 | Twelve |
| 47 | SHAH SANA BASHIR | 12 | Twelve |
| 64 | CHAVAN VIJAY MADHUKAR | 12 | Twelve |
| 70 | SARODE SANGHPRIYA DATTATRAY | 14 | Fourteen |
| 72 | THORVE RAHUL KHANDU | 10 | Tenth |
| 73 | GORE NITIN ASHOK | 12 | Twelve |
| 74 | PANDIT SANJANA UDDHAV | 14 | Fourteen |
| 79 | KHARAT BHAVNA SIDDHARATH | 12 | Twelve |

REMARKS:-

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MILIND COLLEGE OF SCIENCE, AURANGABAD
Nagsenvana, Aurangabad- 431002

B.Sc -II Year Students for Academic year 2020-2021 (Fishery Group)

FAST LEARNER STUDNETS

| Roll No. | Name of the student | Marks | Remarks |
|-----------------|-----------------------------|--------------|----------------|
| 86 | Gawai Vikas Shripat | 18 | Eighteen |
| 88 | Pakhare Pooja Ram | 20 | Twenty |
| 93 | Aswale Pragati Ravindra | 20 | Twenty |
| 94 | Bhujbal Ashwin Anil | 18 | Eighteen |
| 95 | Kharat Tejaswini Rahul | 18 | Eighteen |
| 96 | Mote Vivek Pralhad | 18 | Eighteen |
| 97 | Pahurkar Nisha Rajesh | 20 | Twenty |
| 98 | Raut Anjali Vijay | 16 | Sixteen |
| 99 | Sabhadinde Akshata Niranjan | 18 | Eighteen |
| 100 | Salve Siddharth Uttam | 16 | Sixteen |
| 103 | Sonawane Sneha Sanjay | 16 | Sixteen |
| 104 | Wani Kushal Vishnu | 18 | Eighteen |

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Discussion session also was taken on online platform on Google meeting/ Zoom meeting.

SLOW LEARNER STUDNETS

| Roll No. | Name of the student | Marks | Remarks |
|-----------------|-----------------------------|--------------|----------------|
| 84 | Bhujang Pradnya Ashok | 12 | Twelve |
| 85 | Dhakre Shashikala Baliram | 10 | Tenth |
| 87 | Paikrao Vijay Chandrakant | 12 | Twelve |
| 89 | Phule Sagar Thamaji | 10 | Tenth |
| 90 | Sirsat Suraj Nandkishor | 12 | Twelve |
| 91 | Tarpe Champat Madhavrao | 10 | Tenth |
| 92 | Apturkar Vaishnavi Dnyandev | 12 | Twelve |
| 101 | Sarpate Aniket Laxman | 10 | Tenth |

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MILIND COLLEGE OF SCIENCE, AURANGABAD
Nagsenvana Aurangabad- 431002

B. Sc-II (III & IV Sem) Year Students for Academic year 2020-2021 (Zoology- Group)

FAST LEARNER STUDENTS

| Roll No. | Name of the student | Marks | Remarks |
|-----------------|----------------------------|--------------|----------------|
| 1 | Arak Pranli Mahendra | 18 | Eighteen |
| 2 | Bamborde Divya Vijay | 16 | Sixteen |
| 3 | Bankar Prashant Suresh | 16 | Sixteen |
| 4 | Bansode Pramod Sambharao | 18 | Eighteen |
| 5 | Bhalerao Vaibhav Pandurag | 18 | Eighteen |
| 6 | Bhandari Chaya Sadanand | 18 | Eighteen |
| 7 | Bhojane Nikhil Yashwant | 20 | Twenty |
| 8 | Borkar Manisha Mahadev | 20 | Twenty |
| 9 | Chavan Akash Bhausahab | 18 | Eighteen |
| 10 | Chikte Ajay Uttam | 16 | Sixteen |
| 13 | Dhanedhar Ankita Ashok | 18 | Eighteen |
| 14 | Gadekar Sagar Bhaginath | 16 | Sixteen |
| 15 | Gaikwad Trupati Kailas | 18 | Eighteen |
| 16 | Gangawane Suraj Dadarao | 16 | Sixteen |
| 18 | Gawai Anupama Prabhakar | 18 | Eighteen |
| 19 | Gawai Chhaitali Anil | 20 | Twenty |
| 20 | Gawai Divya Janrao | 20 | Twenty |
| 21 | Ghuge Prathamesh Uttam | 18 | Eighteen |
| 22 | Gikwad Rohan Ankush | 18 | Eighteen |
| 23 | Gore Nitin Ashok | 16 | Sixteen |
| 24 | Haral Dattarao Dnyaneshwar | 16 | Sixteen |

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| 25 | Ingle Ravi Arvind | 18 | Eighteen |
| 26 | Ingle Yash Rajkumar | 18 | Eighteen |
| 27 | Ingole Satish Datta | 16 | Sixteen |
| 28 | Jadhav Arpita Balu | 16 | Sixteen |
| 29 | Jadhav Pankaj Ramesh | 20 | Twenty |
| 30 | Jumde Pavan Datta | 18 | Eighteen |
| 31 | Kamble Jaya Gorakh | 18 | Eighteen |
| 32 | Kanise Akanksha Balsing | 20 | Twenty |
| 33 | Kasbe Rahul Baban | 18 | Eighteen |
| 34 | Katkar Ganesh Punjaram | 16 | Sixteen |
| 35 | Khajekar Harish Ramesh | 16 | Sixteen |
| 36 | Kharat Roshani Sanjay | 20 | Twenty |
| 37 | Khillare Devanand Ananda | 16 | Sixteen |
| 38 | Khillare Trupti Vinayak | 18 | Eighteen |
| 39 | Khillare Pradip Dilip | 18 | Eighteen |
| 40 | Kirtishahi Atul Laxman | 16 | Sixteen |
| 41 | Kolambikar Manmeet Milindra | 16 | Sixteen |
| 42 | Kutur Dhruv Shailendra | 20 | Twenty |
| 43 | More Vikas Suresh | 20 | Twenty |
| 44 | Nikalje Manisha Subhash | 20 | Twenty |
| 45 | Nirmale Suraj Nagorao | 18 | Eighteen |
| 46 | Oimbe Mayuri Santosh | 18 | Eighteen |
| 47 | Padghan Umesh Kundlik | 16 | Sixteen |
| 48 | Pawar Saurabh Siddharth | 16 | Sixteen |
| 49 | Pawar Nikhil Vinayak | 16 | Sixteen |
| 50 | Poharkar Vaishali Pralhad | 20 | Twenty |
| 51 | Rankhamba Vidya Machchindra | 18 | Eighteen |
| 52 | Rasal Krushna Rangnath | 16 | Sixteen |

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|----|------------------------------|----|----------|
| 53 | Rasal Mahendra Ashok | 18 | Eighteen |
| 54 | Sahastrahuddhe Swaraj Vijay | 20 | Twenty |
| 56 | Salve Dishika Ramesh | 20 | Twenty |
| 57 | Salve Sagar Ananda | 18 | Eighteen |
| 58 | Salve Divya Deepak | 16 | Sixteen |
| 61 | Sathe Sakshi Sunil | 20 | Twenty |
| 62 | Sawale Atish Ragho | 18 | Eighteen |
| 63 | Sawdekar Ankit Gajnan | 16 | Sixteen |
| 64 | Shejwal Kulbhushan Jagannath | 16 | Sixteen |
| 65 | Shelke Rupali Suresh | 20 | Twenty |
| 66 | Shinde Ashwini Manohar | 20 | Twenty |
| 67 | Shingare Vishakha Jalindar | 20 | Twenty |
| 68 | Shirsath Hement Sunil | 18 | Eighteen |
| 69 | Sutar Ravi Rajabhau | 18 | Eighteen |
| 70 | Talware Abhinay Ramakant | 18 | Eighteen |
| 71 | Tapre Sachin Subhash | 18 | Eighteen |
| 72 | Tayde Ajay Keshav | 16 | Sixteen |
| 73 | Varke Anurag Ashok | 18 | Eighteen |
| 74 | Waghmare Vishwapal Nitin | 20 | Twenty |
| 75 | Wahurwagh Seema Sanjay | 20 | Twenty |
| 76 | Wakle Arun Nivruti | 18 | Eighteen |
| 77 | Wakle Ravindra Baban | 16 | Sixteen |
| 78 | Wankhade Tushar Arun | 20 | Twenty |
| 79 | WarhadeTejaswini Ramesh | 20 | Twenty |
| 80 | Wathore Vishal Ramesh | 18 | Eighteen |
| 81 | Wature Vishal Tukaram | 16 | Sixteen |
| 86 | Gawai Vikas Shripat | 18 | Eighteen |
| 88 | Pakhare Pooja Ram | 20 | Twenty |

| | | | |
|-----|------------------------------|----|----------|
| 93 | Aswale Pragati Ravindra | 20 | Twenty |
| 94 | Bhujbal Ashwin Anil | 18 | Eighteen |
| 95 | Kharat Tejaswini Rahul | 18 | Eighteen |
| 96 | Mote Vivek Pralhad | 18 | Eighteen |
| 97 | Pahurkar Nisha Rajesh | 20 | Twenty |
| 98 | Raut Anjali Vijay | 16 | Sixteen |
| 99 | Sabhadinde Akshata Niranjana | 18 | Eighteen |
| 100 | Salve Siddharth Uttam | 16 | Sixteen |
| 103 | Sonawane Sneha Sanjay | 16 | Sixteen |
| 104 | Wani Kushal Vishnu | 18 | Eighteen |
| 107 | Chavan Vaishanvi Subhash | 18 | Eighteen |
| 108 | Ghorpade Karishma Pandurang | 16 | Sixteen |
| 110 | Ingole Sneha Suvichar | 18 | Eighteen |
| 118 | Pradhan Diksha Chandravijay | 20 | Twenty |
| 119 | Salve Abhishek Baburao | 20 | Twenty |
| 120 | Shaikh Aman Shaikh Asgar | 18 | Eighteen |
| 128 | Mokale Sakshi Shrvan | 20 | Twenty |
| 129 | Pakhare Alok Ram | 18 | Eighteen |
| 130 | Wagh Pooja Prakash | 18 | Eighteen |
| 131 | Meshram Gaurav Bhaurao | 16 | Sixteen |
| 132 | More Rushali Lakshman | 18 | Eighteen |
| 138 | Telgote Priyanka Sanjay | 18 | Eighteen |

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Zoom meeting.**

SLOW LEARNER STUDENTS

| Roll No. | Name of the student | Marks | Remarks |
|-----------------|--------------------------------|--------------|----------------|
| 11 | Devgire Dadarao Saylu | 12 | Twelve |
| 12 | Dhakne Pravin Raghunath | 10 | Tenth |
| 17 | Garole Parvati Sheshrao | 08 | Eight |
| 82 | Wavhal Amol Eknath | 12 | Twelve |
| 83 | Wavhale Sandip Laxman | 10 | Tenth |
| 84 | Bhujang Pradnya Ashok | 12 | Twelve |
| 85 | Dhakre Shashikala Baliram | 10 | Tenth |
| 87 | Paikrao Vijay Chandrakant | 12 | Twelve |
| 89 | Phule Sagar Thamaji | 10 | Tenth |
| 90 | Sirsat Suraj Nandkishor | 12 | Twelve |
| 91 | Tarpe Champat Madhavrao | 10 | Tenth |
| 92 | Apturkar Vaishnavi Dnyandev | 12 | Twelve |
| 101 | Sarpate Aniket Laxman | 10 | Tenth |
| 105 | Ambhore Vaibhav Vijay | 08 | Eight |
| 106 | Borde Pankaj Suresh | 12 | Twelve |
| 109 | Ingole Nilesh Fakira | 10 | Tenth |
| 111 | Jadhav Manisha Gajanan | 14 | Fourteen |
| 112 | Kale Abhijeet Babasaheb | 10 | Tenth |
| 113 | Kamble Amit Sanjeet | 12 | Twelve |
| 114 | Khillare Ajay Babanrao | 14 | Fourteen |
| 115 | Khillare Vishal Chandrashekhar | 10 | Tenth |

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|-----|------------------------|----|----------|
| 116 | More Priya Sunil | 10 | Tenth |
| 117 | Pandit Rohit Babasaheb | 14 | Fourteen |
| 121 | Zine Shital Bhausaheb | 12 | Twelve |
| 122 | Adhav Aniket Lahurao | 08 | Eight |
| 123 | Ghagre Mahendra Sanjay | 12 | Twelve |
| 124 | Ingole Shubham Satish | 14 | Fourteen |
| 125 | Kalve Amit Rajendra | 12 | Twelve |
| 126 | Kamble Susanna Sushil | 10 | Tenth |
| 127 | Kharat Jeevak Ramesh | 08 | Eight |
| 133 | Pundge Nilesh Ashok | 12 | Twelve |
| 134 | Gore Kishor Rajkumar | 10 | Tenth |
| 136 | Jadhao Pankaj Madhukar | 10 | Tenth |

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Nagsenvana Aurangabad- 431002

B.Sc- III Year (Vth & VIth Sem) Students for Academic year 2020-2021
(Fishery- Group)

FAST LEARNER STUDENTS

| Roll No. | NAME OF THE STUDENT | Marks | Remarks |
|-----------------|------------------------------|--------------|----------------|
| 50 | LANDGE ASHISH VISHWANATH | 20 | Twenty |
| 51 | SHINDE VISHNU DATTA | 20 | Twenty |
| 53 | DONGARDIVE RAJSHREE SAMADHAN | 18 | Eighteen |
| 56 | KHANDARE KARAN SANTOSH | 20 | Twenty |
| 57 | MORELLU RUCHITA VINOD | 20 | Twenty |
| 58 | SATDIVE PALLAVI NANASAHEB | 20 | Twenty |
| 59 | VARKE PRACHI ASHOK | 18 | Eighteen |

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SLOW LEARNER STUDNETS

| Roll No. | NAME OF THE STUDENT | Marks | Remarks |
|-----------------|----------------------------|--------------|----------------|
| 48 | BAMNE MILIND VISHNU | 10 | Tenth |
| 49 | BHUIGAL POURNIMA SURESH | 12 | Twelve |
| 52 | BHANDARE VISHAL KISANRAO | ABSENT | ABSENT |
| 54 | HIWRALE DHAMMASAGAR KALYAN | 10 | Tenth |
| 55 | JAMDADE SIDHANT DILIP | 12 | Twelve |
| 73 | HIWALE PRATHAMESH SIDHARTH | 12 | Twelve |

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Nagsenvana Aurangabad- 431002

B. Sc-III Year (V & VI Sem) Students for Academic year 2020-2021 (Zoology- Group)

FAST LEARNER STUDENTS

| Roll No. | Name of the student | Marks | Remarks |
|-----------------|----------------------------|--------------|----------------|
| 1 | BAGUL YOGESH RAJU | 16 | Sixteen |
| 2 | BHAGAT MAYURI SANJAY | 18 | Eighteen |
| 3 | BHAGAT DIVYA SUNDAR | 18 | Eighteen |
| 4 | BHANDARI POOJA PRAKASH | 16 | Sixteen |
| 5 | BORKAR KIRAN SANJAY | 18 | Eighteen |
| 6 | DABHADE VISHAL HARIBHAU | 18 | Eighteen |
| 7 | DAMEDHAR SONALI MILIND | 20 | Twenty |
| 8 | DAMODHAR MEGHA BHAGWAN | 20 | Twenty |
| 9 | DANDGE PAYAL RAMESH | 18 | Eighteen |
| 10 | DEBAJE KAJAL MAROTI | 20 | Twenty |
| 11 | DHATE YOGESH SHRIHARI | 20 | Twenty |
| 12 | DIWASE MAYURI RAJENDRA | 18 | Eighteen |
| 13 | GADEKAR AARTI SHIVAJI | 20 | Twenty |
| 14 | GAWAI SANTOSH NARAYAN | 18 | Eighteen |
| 18 | INGLE RUSHIKESH ASHOK | 18 | Eighteen |
| 20 | JADHAV AAKANKSHA DHARMPAL | 18 | Eighteen |
| 21 | JADHAV DIPAK GAJANAN | 16 | Sixteen |
| 22 | JADHAV PANKAJ RAJENDRA | 16 | Sixteen |
| 24 | JAWARE PRIYANKA SATISH | 18 | Eighteen |
| 28 | LONKAR AJAY RAMESHWAR | 18 | Eighteen |
| 29 | MAGRE AKASH BABAN | 18 | Eighteen |

| | | | |
|----|-------------------------------|----|----------|
| 30 | MAKASARE KRANTI PRAKASH | 20 | Twenty |
| 31 | MANWAR ROSHANI RAJESH | 20 | Twenty |
| 32 | PASTAPURE ABHIJIT SUBHASH | 18 | Eighteen |
| 33 | PAWAR NITIN RAJU | 18 | Eighteen |
| 35 | RAUT ANSHUMAN SHIVAJI | 20 | Twenty |
| 37 | SONWALE SAVITA RAJEBHAU | 20 | Twenty |
| 38 | SURADKAR VIKAS DEVIDAS | 18 | Eighteen |
| 39 | SURWASE MEENA VISHWANATH | 20 | Twenty |
| 40 | THORAT SNEHAL ANAND | 20 | Twenty |
| 41 | TUPE SHRUTIKA KANCHAN | 18 | Eighteen |
| 42 | TUPSAMUNDRE RUPALI VITTHALRAO | 18 | Eighteen |
| 43 | VYAWAHARE SURAJ SANJAY | 20 | Twenty |
| 45 | WAGHMARE REEBEKA SUSHIL | 20 | Twenty |
| 46 | WANKHADE ASMITA MAHADEV | 20 | Twenty |
| 47 | WANKHADE KUNAL CHARANDAS | 20 | Twenty |
| 50 | LANDGE ASHISH VISHWANATH | 20 | Twenty |
| 51 | SHINDE VISHNU DATTA | 20 | Twenty |
| 53 | DONGARDIVE RAJSHREE SAMADHAN | 18 | Eighteen |
| 56 | KHANDARE KARAN SANTOSH | 20 | Twenty |
| 57 | MORELLU RUCHITA VINOD | 20 | Twenty |
| 58 | SATDIVE PALLAVI NANASAHEB | 20 | Twenty |
| 59 | VARKE PRACHI ASHOK | 18 | Eighteen |
| 60 | DONGARDIVE PRIYANKA HIRALAL | 20 | Twenty |
| 61 | GAIKWAD TEJAS VIJAY | 18 | Eighteen |
| 62 | JADHAV SANTOSH SAHEBRAO | 20 | Twenty |
| 63 | KAMBLE AKASH RAJU | 20 | Twenty |
| 65 | LAHARE SUMESH MUKESH | 18 | Eighteen |
| 66 | MORE SURAJ DATTA | 20 | Twenty |

| | | | |
|----|-----------------------------|----|----------|
| 67 | SONAWANE SURAJKUMAR KRUSHNA | 18 | Eighteen |
| 68 | SONKAMBLE SAMADHAN BHIMRAO | 20 | Twenty |
| 69 | AWACHAR POURNIMA JALINDAR | 18 | Eighteen |
| 71 | BORDE MEGHAVI DEVIDAS | 18 | Eighteen |
| 74 | MESHARAM ARCHANA RAJPUT | 20 | Twenty |
| 75 | GAIKWAD SUKESHNI ANANDRAO | 18 | Eighteen |

REMARKS:-

For the fast learner students we have provided foreign author books to refer for their studies and also we have provide PPT on particular topics, send links of animation videos on their whatsapp group which available on internet.

**Discussion session also was taken on online platform on Google meeting/
Zoom meeting.**

SLOW LEARNER STUDENTS

| Roll No. | Name of the student | Marks | Remarks |
|-----------------|---------------------------------|---------------|----------------|
| 15 | HELODE JAIKUMAR SURESH | 10 | Tenth |
| 16 | HIWALE AKSHAY SANJAY | 12 | Twelve |
| 17 | HIWARALE MAHAVIR PANDURANG | 14 | Fourteen |
| 19 | ISAYE KARTIK BABURAO | 10 | Tenth |
| 23 | JAWANJAL PRASHIK RAM | 12 | Twelve |
| 25 | JUMBADE JYOTI SHEKURAO | 14 | Fourteen |
| 26 | KHOBRADE KETAN NANDKISHOR | 12 | Twelve |
| 27 | LEMLE PRATIK GORAKH | 08 | Eighth |
| 34 | RANVEER SAMBHAJI BHASKAR | 10 | Tenth |
| 36 | SHEJWAL AJAY RAHUL | 12 | Twelve |
| 44 | WADHAVE SOURAV UTTAM | 10 | Tenth |
| 52 | BHANDARE VISHAL KISANRAO | ABSENT | ABSENT |
| 54 | HIWRALE DHAMMASAGAR KALYAN | 10 | Tenth |
| 55 | JAMDADE SIDHANT DILIP | 12 | Twelve |
| 64 | KAUR GURPREET SIMARJIT | 14 | Fourteen |
| 70 | BHALERAO DEVANAND GAJANAN | 12 | Twelve |
| 72 | PAWAR SADANAND HIMMATRAO | 10 | Tenth |
| 73 | HIWALE PRATHAMESH SIDHARTH | 12 | Twelve |

REMARKS:-

For slow learner students we have taken extra classes, essay notes (Own written) were provided, plus we have also provided the Indian author books according their syllabus. We also have kept doubt session to personally interaction of each student for clear his/her doubts on hard topic and suggestion were given as well.

You're sincerely

Dr. D.C. Wagh

Assistant Professor (CHB)
Department of Zoology
& Fishery Science
Milind College of Science,
Aurangabad (MS) India

**DR. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY, AURANGABAD (MS)
INDIA-431004**

Faculty of Science & Technology
Department of Fishery Science at Milind College of Science,
B.Sc. Vth Semester Class Test -2020-21
Paper No. XV (Fish Economics)

Time 30 Minutes

Marks 20

Q. Multiple Choice question (All questions attempt compulsory).

1. Who is the Father of Economics? 2m
i) Adam Smith ii) Homi J. Bhabha
iii) A. P. J. Abdul Kalam iv) Alfred Marshall
2. Professor Lionel Robbins provided economics definition. According to him 2m
(i) Man has unlimited wants or ends,
(ii) The means or resources to satisfy them are limited,
(iii) The resources are not specific and have alternative uses and
(iv) Hence, there is an urgent need to choose between wants
3. The terms Micro- economics and Macro-economic were first used by ? 2m
i) Ragnar Friesch ii) Adam Smith
iii) Prof Marshall iv) Robbins
4. _____ is/are not the concerns of microeconomics. 2m
i) Rate of inflation ii) Population growth
iii) Rate of unemployment iv) All of the above
5. The term microeconomics was coined by _____. 2m
i) Prof A Samuleson ii) Giffen
iii) Eagle iv) Ragnar Friesch
6. Many factors influence demand. These are called determinates of demand, 2m
Four important determinants of demand are:
a) Price of the good b) Price of the substitute goods,
c) Income of the consumer and d) Tastes and preferences of the consumer.
i) only a, ii) only b, iii) a, b c iv) All of the above.

7. How many types of elasticity demand? 2m
i) one ii) two, iii) Three iv) four
8. The supply curve of a commodity is determined by many factors some of which are listed below? 2m
a) Price of the good which is to be supplied b) Price of other goods
c) Prices of factors of production d) Number of producers or sellers
i) only a ii) only b iii) a, b, c iv) All of the above
9. What is great significance of economics? 2m
a) Production and supply of goods and services b) Good Income
c) Money savings d) Employment opportunity.
i) a, b ii) a, b, c, d, iii) a, b, d iv) All of the above
10. Demand is defined as ? 2m
i) A desire for a commodity ii) Service supported with necessary purchasing
iii) Power and willingness iv) All of the above

Answers :-

1-i, 2-iii, 3-i, 4-iv, 5-iv, 6-iv, 7-iii, 8-iv, 9-iv, 10-iv

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(MS) INDIA-431004**

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B.Sc. Vth Semester Class Test 2020-21

Paper No. XV (Fish Economics)

Time 30 Minutes

Marks 20

Q. Multiple Choice question (All questions attempt compulsory).

1. What is mean by Market economy? 2m
 - ii) Consumer is king ii) Consumer decided value of product
 - iii) Consumer offering relative product **iv) All of the above**

2. What are the strategies of fish marketing?
 - a) Market opportunity b) Marketing control
 - c) Market implementation d) Marketing plans
 - i) a, b ii) a, b, c, d iii) a, d, c **iv) All of the above**

3. What are types of elasticity of demands?
 - i) Income elasticity of demand ii) Price elasticity demand
 - iii) Cross elasticity demand **iv) All of the above**

4. What is the Aquaculture economics ?
 - a) Deals with rearing of desirable b) Organism under control or semi control
 - c) Condition for economic or social benefits d) Food production, restored of endangered species population
 - i) a, b ii) a, b, c, d iii) b, c **iv) All of the above**

5. Demand Schedule?
 - i) Amount of fishes take from market **ii) Willingness to purches goods and services**
 - iii) Salable and consumer is having preferences iv) Imperfection and specification of existing demand.

6. What is the Price flexibility?
 - i) **Flexibility is usually treated as the universe of price elasticity** ii) Is the small changes in price
 - iii) Price should not be changes iv) All of the above

7. Concept of modern fish marketing?
 - i) Overcomes the problems which faces in traditional fish marketing
 - ii) As the fresh fish cannot be kept for a long time to preserved by proper means fro changing low temperature
 - iii) Change the brand the brand name of fish than it will have great demand in market.
 - iv) All of the above**

8. What is the Zero Income Elasticity ?
 - i)It means with the change in income the demand for fish commodity remains constant**
 - ii)It means that proportionate change in income
 - iii)It means that the amount of quantity demanded is more tan increased in income
 - iv) It means that the increased in the quantity demanded, less than increased in income

9. Concept of High Income Elasticity?
 - i)It means with the change in income the demand for fish commodity remains constant
 - ii)It means that proportionate change in income
 - iii)It means that the amount of quantity demanded is more tan increased in income**
 - iv) It means that the increased in the quantity demanded, less than increased in income

10. Concept of Low Income Elasticity?
 - i)It means with the change in income the demand for fish commodity remains constant
 - ii)It means that proportionate change in income
 - iii)It means that the amount of quantity demanded is more tan increased in income
 - iv) It means that the increased in the quantity demanded, less than increased in income**

Answers :-

1-iv, 2-iv, 3-iv, 4-iv, 5-ii, 6-I, 7-iv, 8-i, 9-iii, 10- iv

**DR. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY, AURANGABAD (MS)
INDIA-431004**

Faculty of Science & Technology
Department of Fishery Science at Milind College of Science,
B.Sc. Vth Semester Class Test 2020-21
Paper No. XVI (Fish Economics)
Topic:-All Units

Time 30 Minutes

Marks 20

Q. Multiple Choice question (All question attempt compulsory)

1. The terms 'micro' and 'macro' economics were first used by _____.
i) **Ragnar Friesch** ii) Adam Smith
iii) Prof Marshall iv) Robbins
2. The term microeconomics was coined by _____.
i) Prof A Samuleson ii) Giffen
iii) Egel **iv) Ragnar Friesch**
3. The supply of curve a commodity is determined by many factors some of which are listed below?
a) Entry of new firms b) Technology
c) Government policy d) Discovery of new raw materials
i) a, b ii) only a iii) a, b, c, d **iv) All of the above**
4. What is mean by Traditional Fish Marketing?
i) **Scientific producers are too allowed in main the quality**
ii) At the landing centre in the first instances the first fish is assembled.
iii) As the fresh fish cannot be kept for a long time to preserved by proper means for changing low temperature
iv) All of the above
5. It consist of attempting to have increased sale for its commodities in these market through more aggressive marketing effect.
i) Market development ii) Product development
iii) **Market penetration** iv) Horizontal diversification
6. ----- Means adding new product that will bring same appeal to be the present costumer for fish fillets may be supply along with child fish.
i) **Horizontal diversification** ii) Concentric diversification
iii) Conglomerate diversification iv) Non of the above

7. The net addition made to the total revenue by selling and extra unit of fish commodity
i) Average revenue ii) **Marginal revenue** iii) Total revenue iv) Revenue
8. Supply schedules are of two types?
i) **Individual supply and markets supply** ii) Market supply and curve supply
iii) Individual supply and group supply iv) All of the above
9. One of the type of intensive growth ?
i) Concentric diversification ii) Diversification of growth
iii) Horizontal diversification iv) **Market development**
10. The fish are particularly catch by the fisherman group leaders known as.....in
kerala state.
i) **Pohendher** ii) Bohonias iii) Tendels iv) Non of the above

Answers

1-i, 2-iv, 3-iv, 4-i, 5-iii, 6-ii, 7-i, 8-i, 9-iv, 10- i

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INDIA-431004**

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B.Sc. Vth Semester Class Test 2020-21

Paper No. XVI (Modern Trends in Fishery Science -I)

Topic:-

Time 30 Minutes

Marks 20

Q. Multiple Choice question (All question attempt compulsory)

1. National Bureau of fish genetics Resources is located-----?

i) Bengluru ii) **Allahabad** iii) Mumbai iv) Trivandrum

2. Arrange the following chromosome by their centromeric position.

| Type | Centromeric position |
|-------------------|----------------------|
| 1. Metacentric | a. Terminal |
| 2. Submetacentric | b. Subterminal |
| 3. Acrocentric | c. Submedian |
| 4. Telocentric | d. Nearly median |

i) **1-d, 2-c, 3-b, 4-a** ii) 1-c, 2-d,3-a, 4-b

iii) 1- b, 2-a, 3-d,4-c iv) 1-a, 2-b,3-c,4-d.

3. This basic sex is known as thewhich is further classified into two groups, gonochorism and hermaphroditism.

i) **Gonadal sex** ii) Physiological sex

iii) Primary sex iv) Sex determination

4.is the possession of both ovarian and testicular tissues in the same individual fish which functions both as male and female during its life history.

i) Gonochorism ii) **Hermaphroditism**

iii) Gonochorists iv) None of the above

5. Which one the following is hybrid fish?

- i) Labeo rohita ii) Catla-catla
- iii) **Rohu-Catla** iv) Labeo calbasu

6. Give one example of commercially produced triploids ?

- i) **Tilapia** ii) Wallago attu
- iii) Ray fishes iv) Anguilla

7. Which hormone is used to treat sex reverse in fishes?

- i) Progesterone ii) Gonadotropin
- iii) Epinephrine iv) **Methyl-testosterone**

8. By which device the number of fish sperm is counted

- i) Colorimeter ii) Haemocytometer
- iii) Spectrophotometry iv) **Haemocytometer & Spectrophotometry**

9. Chromosomes consist of specific proteins called as

- i) **Histones** ii) Myosin iii) Albumin iv) Hemoglobin

10. As a result of intra-specific hybridization the increasing productivity of fish species of about -
-----% can be expected

- i) 15 to 30% ii) 10 to 15 %
- iii) **15 to 25%** iv) 30 to 40%

Answers

1-ii, 2- i, 3- i , 4- i, 5-ii, 6-i, 7-iv, 8-iv, 9-i, 10-iii

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INDIA-431004**

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Paper No. XVI (Modern Trends in Fishery Science -I)
Topic:-

Time 30 Minutes

Marks 20

Q. Multiple Choice question (All questions attempt compulsory)

1. The study of heredity and variations in living organism called as?

- i) **Genetics** ii) Life Science
iii) Biotechnology iv) Biology

2. Which two patterns of inheritance fishes exhibits ?

- i) **Mendelian & Non-Mendelian** ii) Darwinism & Non-Darwinism
iii) Lamarckism & Non-Lamarckism iv) All of the above

3. Fish chromosomes ?

- i) Giant ii) Very small & numerous
iii) **Thick & Bigger** iv) Lampbrush

4. In 1991 revised the chromosomes information on 173 Indian fish species by ?

- i) **Lackra & Rishi** ii) Darwin & Alfred Wallace
iii) Greger Mendel & Hugo Mariede iv) Walter & Bateson

5. Chose the correct option the chromosomes which stains darkly in example of ?

- i) Euchromatin ii) Heterochromatin
iii) **Both i & ii** iv) None of the above

6. The centromere is located approximately at the centre of the chromosomes, their arms are equal (Chose incorrect options).

- i) Metacentric
- ii) **Sub-Metacentric**
- iii) Chromosomes
- iv) Option i & ii

7. Retziat (1890) and Katschenko (1890) worked on -----?

- i) **Fish chromosomes**
- ii) Bird chromosomes
- iii) Human chromosomes
- iv) Molluscan chromosomes

8. Pairing of chromosomes accordingly their size morphology is known as ?

- i) Gene sequencing
- ii) **Karyotyping**
- iii) Cytology
- iv) Electrophoresis

9. Cryopreservation gametes are correctly described as follows? (Chose incorrect options)

- i) Conserving the depleting species germplasm
- ii) Manipulating or regulating progenies of fish with desired treads
- iii) Enhancing the percentage of hatching by way of egg fertilization with cryopreservation milt.
- iv) **Experimentally by high energy radiations translocation of chromosomal segmentation**

10. Males may be injected with spawning agents to ensure higher milt values, this is the best example of methods of ?

- i) **Handling of spermatozoa prior to freezing**
- ii) Cryoprotectant
- iii) Dilution ratio
- iv) Storage containers

Answers

1-i, 2-i, 3-iii, 4-i, 5-iii, 6-ii, 7-i, 8- ii, 9- iv, 10- i.

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Paper No. XVI (Modern Trends in Fishery Science -I)

Topic:-

Time 30 Minutes

Marks 20

Q. Multiple Choice question (All questions attempt compulsory)

1. The SPZ: diluant ratio varies between&.....depending upon species?
i) **1:1 & 1:10** ii) 1:2 & 1:20
iii) 1:3 & 1: 30 iv) 1:4 & 1:40
2. Male can be converted female functionally & female can also be converted male its
phenomena observed in fishes known as ?
i) **Sex reversal** ii) Monosex culture
iii) Only i iv) Both i & ii
3. According to which scientist experiments he obtained mature sex reversal male & the
successfully grown 8000-10000 presume monosex fish ?
i) **Shelton (1977-1982)** ii) Pandian & Kiran (2003)
iii) Yamamoto (1969) iv) None of the above
4. What formed through the biochemical process of ontogenesis under the control of
genetic sex?
i) Sex determination ii) Gonadal Index
iii) Gonochormison iv) **Physiological sex**
5. Which formed plaid are always sterile, they do not undergo gonadal developments ?
i) Euploidy ii) **Triploide**
iii) Diploide iv) Hyploide

6. Hybridization means?

- i) **Results of fertile cross between individuals of different species**
- ii) Do not undergo gonadal developments
- iii) Undergo "Partial or altered "puberty.
- iv) Produced all female Triploid stocks

7. The advantages of Triploids ?

- i) **High effective (98%)** ii) Effective at (100%)
- iii) In expensive iv) Simple and rapid

8. Disadvantages of Hybridization?

- i) In expensive ii) 2% of fish are not sterile
- iii) **Not effective or possible for all species** iv) Labour intensive

9. Which hormone is used to treat sex reverse in fishes?

- i) Progesterone ii) Gonadotropin
- iii) Epinephrine iv) **Methyl-testosterone**

10. Fish chromosomes ?

- i) Giant ii) Very small & numerous
- iii) **Thick & Bigger** iv) Lampbrush

Answers

1-i, 2- i, 3-i, 4- iv, 5- ii, 6-i, 7- i, 8- iii, 9- iv, 10- iii.

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Paper No. XIX (Fish Statistics, Management and Extension)

Topic:-

Time 30 Minutes

Marks 20

Q. Multiple Choice question (All questions attempt compulsory)

1. What is the Median?

- i) Difference between higher half and lower half of the data set
- ii) Mean of the highest and lowest number in a data sample
- iii) **Value separating higher half from the lower half of a data sample**
- iv) Difference between the highest and lowest number.

2. What is the Median of the following data sample?

2, 7, 4, 8, 9, 10, 6, 12, 13

- i) **8**
- ii) 11
- iii) 9
- iv) 10

3. What is the Median of the following data sample?

3, 7, 4, 8, 9, 6, 10, 12, 13, 15

- i) 7.5
- ii) 9
- iii) **8.5**
- iv) 10

4. Number which occurs most frequently in a set of numbers is

- i) Mean
- ii) Median
- iii) **Mode**
- iv) None of above

5. The objectives of fisheries managements are ?

- i) MSY
- ii) MEY
- iii) Maintainace of minimum spawning stock
- iv) **All of the above**

6. Use of ----- saves time and cost?
- i) **Secondary data** ii) Primarily data
 iii) Data iv) Information.
- 7.....is the methods of gathering information on from individuals.
- i) Collection ii) **Survey**
 ii) Analysis iv) Inspection
8.Question are easy to use same and codify for analysis because all respondent can chose from the given option
- i) Multiple choice ii) Open –ended
 iii) **Closed –ended** iv) True/false
9. In spatial classification data are classified with references to?
- i) **Geographical location** ii) Time series
 iii) Chronological classification iv) Quantitative classification
- 10.-----is a compressive way to classify raw data of quantitative variables ?
- i) **Frequency distribution** ii) Distribution
 iii) Information iv) Analysis

Answers

1- iii, 2-i, 3-iii, 4-iii, 5-iv, 6-i, 7-ii, 8- iii, 9- i, 10- i

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Paper No. XIX (Fish Statistics, Management and Extension)

Topic:-

Time 30 Minutes

Marks 20

Q. Multiple Choice question (All questions attempt compulsory)

1.is drawn only for a continues variables?
 - i) Pie-charts
 - ii) Bar- diagram
 - iii) **Histogram**
 - iv) Frequency-curve
2. The frequency curve obtained by drawing?
 - i) Line with scale
 - ii) Straight line
 - iii) **Smooth free hand curve**
 - iv) Circle
- 3.Bar diagram is a?
 - i) **One-Dimensional diagram**
 - ii) Two-Dimensional diagram
 - iii) Diagram with no dimensional
 - iv) None of the above
- 4.The purpose of the collection data is to show.....for reaching sound and clear solution to a problem?
 - i) Design
 - ii) Figure
 - iii) Movement
 - iv) **Evidence**
5.is a tool which helps in understanding problems by providing information?
 - i) Excel
 - ii) Documents
 - iii) **Data**
 - iv) Experiments
6. Basic way of collection data are ?
 - i) Personal interview
 - ii) Mailing survey
 - iii) Telephonic interview
 - iv) **All of the above**
- 7.Cumulative frequency distribution fro a graphical is called ?
 - i) Pie diagram
 - ii) Frequency Polygram

iii) **Ogive** iv) Frequency curve

8. The data represented through a histogram can help in finding graphically the.....?

i) Mean ii) **Mode** iii) Median iv) All of the above

9. For determination of mode and median graphically one consider ?

i) Bar diagram and Ogive ii) Bar diagram and line diagram

iii) Histogram and line diagram iv) **Histogram and Ogive**

10. For making frequency distribution, the number of classes used depending upon?

i) Size of responses ii) Experiment conditions

iii) **Size of class** iv) Number of observation.

Answers

1-iii, 2- iii, 3- i, 4- iv, 5- iii, 6- iv, 7-iii, 8- ii, 9-iv, 10-iii

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INDIA-431004**

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Paper No. XIX (Fish Statistics, Management and Extension)

Topic:-

Time 30 Minutes

Marks 20

Q. Multiple Choice question (All questions attempt compulsory)

- The frequency distribution according to individual variable values is called ?
 - Discrete frequency distribution**
 - Cumulative frequency distribution
 - Percentage frequency distribution
 - Continues frequency distribution
- The systematic (Methodological) arrangement of the statistical data in columns or rows is called as?
 - Nature of data
 - Tabulation of the data**
 - Classification of the data
 - Categorization of the data
- Which of the following is not type of data classification?
 - Qualitative classification
 - Chronological classification
 - Geographical classification
 - Mathematical classification**
- The variations among the observation of each specific class are known as?
 - Total number of classes
 - Variability between classes
 - Random classes
 - Variability with classes**
- Statistics is not applicable toobservation?
 - Classified
 - Group
 - Individual**
 - Monotonic
- If the class size are unequal in a frequency distribution then the frequency densities are computed to draw?
 - Frequency polygon
 - Histogram**
 - Ogive
 - None of the above
- The skewness of a distribution is indicated by ?

- i) Histogram ii) Ogive
- iii) **Frequency polygon** iv) Cumulative frequency curve

8. Fish fisheries extension unit in India was started at

- i) CMFRI ii) **CIFRI** iii) CIFE iv) CIFA

9. Head quarters of world fishery control (ICLARM) is located at

- i) Malaysia ii) **Indonesia** iii) Germany iv) USA

10. Which one of the following corrected meaning for the terms biostatics?

- i) Calculation ii) Biology iii) **Biochemistry** iv) Analysis

Answers

1-i, 2- ii, 3-iv, 4- iv, 5-iii, 6-ii, 7-iii, 8- ii, 9- ii, 10- iii

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Paper No. XIX (Fish Statistics, Management and Extension)
Topic:-

Time 30 Minutes

Marks 20

Q. Multiple Choice question (All questions attempt compulsory)

1. Inventory of potential resources is ?

- i) **Estimation of total water area available for experimentation**
- ii) Encompasses fish production through aquaculture
- iii) Growth of fish population
- iv) Constitute meristic characteristics of fish

2. Designing experiments for quantitative inferences ?

- i) **Is the type of scope of fisheries statistics**
- ii) Is the definition of fishery statistics
- iii) It is the source of fisheries data
- iv) It is the computer and fishery statistics

3. FAO year boards of fishery statistics published annually by ?

- i) Fish and aquaculture organization
- ii) **Food and aquaculture organization**
- iii) Fishing agency of organization
- iv) None of the above

4. Name of the new stock assessment software package which is developed by merging FAO & ICLARM in nineties ?

- i) LFSA ii) ELEFAN iii) CLIMPROD iv) **FISAT**

5. Statistics of marine products exports published by the marine products exports development authority Kochi it contains?

- i) Region -wise exports ii) Information on country -wise export
- iii) Average unit value iv) **All of the above**

6. It deals with the overall development of the people associated with fisheries through the process of education for improving methods and techniques of production is the size standard of living of true people as well ?

- i) Management science
- ii) **Fisheries extension**
- iii) Fish development
- iv) Fishery managements

7. Why traditional managements?

- i) **The quest for effective fisheries resources undertaken so far have proved in advocate and unsuccessful.**
- ii) A services co-operative is another type of associations which provides services rather than good or fish sale facilities.
- iii) An entirely different approach is to establish a community fishery centre best on an appropriate module.
- iv) It may involved control over its own auctions markets

8. Fishery extension is mainly concern with the issues related to?

- i) Maximum landing centers
- ii) Fish stocks
- iii) **Depletion of fish stocks**
- iv) Lack of man power

9. In advocate welfare measures against the missing fisherman by the extension system was expressed by.....% of the despondence?

- i) 20
- ii) 14
- iii) 40
- iv) **36**

10. Fish fisheries extension unit in India was started at

- i) CMFRI
- ii) **CIFRI**
- iii) CIFE
- iv) CIFA

Answers

1-i, 2-i, 3- ii, 4- iv, 5-iv, 6- ii, 7- i, 8- iii, 9-iii, 10- ii

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Paper No. XVI (Modern Trends in Fishery Science -II)

Topic:-

Time 30 Minutes

Marks 20

Q. Multiple Choice question (All questions attempt compulsory)

1. It is the study of micro-organism like bacteria viruses, algae ,fungi and protozoa in fresh estuarine and marine water called as?
i) Microbiology ii) **Aquatic microbiology**
iii) Hydrobiology iv) Marine biology
2. One of these are the soil bacteria is ?
i) **Azatobactor** ii) Ascomyetus
iii) Phycomeutes iv) Pseudomonas
- 3.Red seed convolution caused by ?
i) Pseudomonas ii) **Cynobacteria**
iii)Deutoromyetes iv) Myxomyactes
4. Waste water contain.....water and nearest is suspended solids?
i)80% ii) 70% iii)60% iv) **99.9%**
- 5.....indicates that the water contains potentially dangerous pollutant ?
i) Cynobacteria ii) Pseudomonas
iii) **Coli forms** iv) Diatoms
6. Those who convert radiant energy to chemical oxygen and support the entire population of fishes i.e ?
i)Diatoms ii) Cynobacteria
iii)Dinoflagellates iv)**All of the above**
7. These convert soluble forms of iron to insoluble forms of iron ?
i) Streptococcus ii) Coli forms
iii)**Gallionella** iv)Thiobaccillus

8.....is the primary producer?

i) **Phytoplankton** ii) Zooplanktons

iii) Aquatic fishes iv) Bacteria

9. It is a type of distribution depends on pressure, temperature, biotic factor and sedimentation of organic matter?

i) Horizontal ii) **Vertical** iii) Lentic iv) Lotic

10. In spring there is massive growth of algae called as?

i) Beds ii) Population iii) Abundance iv) **Bloom**

Answers

1- ii, 2-i, 3- ii, 4- iv, 5- iii, 6- iv, 7- iii, 8- i, 9- ii, 10- iv

**DR. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY, AURANGABAD (MS)
INDIA-431004**

Faculty of Science & Technology
Department of Fishery Science at Milind College of Science,
B.Sc. Vth Semester Class Test 2020-21

Paper No. XVI (Modern Trends in Fishery Science -II)

Topic:-

Time 30 Minutes

Marks 20

Q. Multiple Choice question (All questions attempt compulsory)

1.....is the study of the immune system and its responses is invading pathogen?

- i)Biology ii)Life Science iii)**Immunology** iv)Hematology

2.What is the environment are blocked by physical barriers like swim, mucus etc from being enter into the host?

- i)Air ii) CO₂ iii)Non living things iv)**Micro-organism**

3.The provides the initial defense against infection ?

- i)Mechanism of antibiotics ii)Acquired immunity
iii)**Innate immunity** iv) Mechanism of Antigen

4.In fishes which is the fundamental defense mechanisms in ?

- i) Specific immunity ii)Lymphocytes
iii) **Non-specific immunity** iv) Lymphocytes against

5.Humoral immunity is mediated by ?

- i) **Cytokines** ii)NK cells iii)Granular cells iv)Macrophages

6.All mediated immunity is mediated by?

- i)**NK cells** ii)Cytokines iii)Antimicrobial peptides iv)Cellular substratum

7.It is slowly even more effective against pathogens?

- i) **Adaptive immunity** ii) Innate immunity

iii)Antibodies iv)Lymphocytes

8.Immunoglobulins are produced by plasma cells differentiated by from?

i)A Cell ii) **B Cell** iii) T Cell iv) NK Cell

9.Following are the main features of adaptive immune system in jawless vertebrates ?

i)Lymphocytes lack MHC molecules ii) Lack of T-Cells receptors

iii)Lack of B Cells receptor iv) **All of the above**

10.In all gnathostomates this gene is present but absent in jawless fish ?

i)**RAG** ii) Species family genes iii)Immunity genes iv)None of the above

Answers

1-iii, 2-iv, 3- iii, 4- iii, 5-i, 6-i, 7- i, 8- ii, 9-iv, 10- i

People's Education Society (Mumbai)

MILIND COLLEGE OF SCIENCE

Nagsenvanu Ayranghad-431002

Department of chemistry

Internal Examination-1st 2019

Class—B. Sc. SEMESTER III

Attendance Report

Subject - Inorganic Chemistry

Date: - 18/09/2019

Time- 12:30pm to 1:30pm

| Roll No. | Name of the students | Sign |
|----------|---------------------------------|------|
| 1 | Balsal Rukht Romdas | |
| 2 | BAGAL KETAN VIJAY. | |
| 3 | Bankes Ramelhas Bhimrao | |
| 4 | Bhagat Poyanka Prakash | |
| 5 | Bhalekar Nilesh Bhimrao | |
| 6 | Bhalerao Vikas Chandrabhan | |
| 7 | Sheetal .Shantaram . borde | |
| 8 | Ketan Prakash Borde | |
| 9 | Sachin Nandu Chabukswar | |
| 10 | Ghantewad Rohini Sambhadrinarao | |
| 11 | Bhimrao .M.Hiswale | |
| 12 | | |
| 13 | | |
| 14 | | |
| 15 | | |
| 16 | | |
| 17 | Morse Mangesh Tsyambuk | |
| 18 | | |
| 19 | | |
| 20 | Sonal Rujput | |
| 21 | | |
| 22 | WANKHADE KARAN SANTAY | |
| 23 | Sonawane Ganesha Laxman. | |
| 24 | Sonawane Krishna Sudhakar | |
| 25 | Thakare Nalankumar Gokul | |
| 26 | Sachin R. Tidke | |
| 27 | | |

28

29 Washimbe Anil Bhagwan.

30 Chandruprakash Panshi Purnade

22 Sachin Pralhad Sonalkar

31 Saurabh Pralhad Patil

People's Education Society (Mumbai)
 MILIND COLLEGE OF SCIENCE
 Nagsenvana Aurangabad-431002

Department of chemistry
 Internal Examination-1st 2019

Attendance Report

Class—M.Sc. SEMESTER III-A

Date: - 15/09/2019

Subject: Bio-organic chemistry 315
 10:00am to 11:00am
 Time: 44000000000000000000

| Roll No. | Name of the students | Sign |
|----------|----------------------------------|----------|
| 1 | Borde Swati Sahebrao | Swati |
| 2 | Hirale Swapnali Ramesh | Swapnali |
| 3 | Priyanka K. Jadhav | Priyanka |
| 4 | Sudita W. Jadhav | Sudita |
| 5 | Mamjulkar Ravindraji Dnyaneshwar | Ravindra |
| 6 | Suraj R. Rajut | Suraj |
| 7 | Sumit Y. Sakhare | Sumit |
| 8 | Pooja M. Sare | Pooja |
| 9 | Sarkate Vilas Sahebrao | Vilas |
| 10 | Shete Vilay Uttamshwar | Shete |
| 11 | Pallavi B. Nerhat | Pallavi |
| 12 | Bidve Sumanrao Chaitanav | Bidve |
| 13 | Jadhav Ravindra Mandkishor | Ravindra |
| 14 | | |
| 15 | Kamble Nilima Mangadhar | Nilima |
| 16 | More Sachin Bharat | Sachin |
| 17 | Meharaj Akram Shaikh | Meharaj |
| 18 | Karim Ramdas Theobhart | Karim |
| 19 | Sawane Manisha Gobul | Manisha |
| 20 | Rajput Jyoti Harising | Jyoti |
| 21 | Galde Bharat Prabhakar | Bharat |
| 22 | Anil Umaji Narwade | Anil |
| 23 | Ingle Rohit Ravikant | Rohit |
| 24 | Anil Dattabhai Chargo | Anil |
| | | |
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| | | |

People's Education Society (Mumbai)
 MILIND COLLEGE OF SCIENCE
 Nagsenvana Aurangabad-431002
 Department of Chemistry
 Internal Examination-IInd 2019

Class—M. Sc. SEMESTER 3rd

Attendance Report

Sub:- Physical Reaction (CHE-316)

Date - 19/02/2019

| Roll No | Name of the students | Sign |
|---------|-------------------------------------------|------|
| 16 | Mose Sachin Bhagat | |
| 17 | Meheraj Anan Jhalek | |
| 18 | Karan Ramdas Thambur | |
| 13 | Ravindra Nandkishore Jadhav | |
| 07 | Sumit Y. Sakhare | |
| 19 | sonwane Manisha Gotul | |
| 08 | pooja M. solve | |
| 03 | Priyanka K. Jadhav | |
| 11 | pallavi Bhimrao Newhal Sukeshini Kadam | |
| 21 | Pramod Prabhakar Gode | |
| 12 | Bidya Sandeep Gajanan | |
| 23 | Jayle Rohit Ravikant | |
| 02 | Hilakale Swapnali Ramesh | |
| 04 | Jadhav surita Anand | |
| 01 | Borde swati Sahebrao | |
| 6 | Sural R. Raut | |
| 02 | Anwar Amir Hembaji | |
| 20 | Rajput Jyoti Hatisingh | |
| 15 | Kamble Nilima Mangadkar | |
| 9 | Sarkate Vilas Sahebrao | |
| 24 | Anel Pashalkar Dhangar | |
| 05 | Mamjulkar, Ravindra Dnyaneshwar | |
| 10 | shete vidya Gattawat | |
| | | |
| | | |
| | | |

People's Education Society, (Mumbai)

MILIND COLLEGE OF SCIENCE

Nagsewadi, Aarengwadi-431002

Department of chemistry

Internal Examination-1st 2019

Attendance Report

Class - M. Sc. SEMESTER IInd

Subject - Organic Synthesis 316

Date - 15/09/2019

Time - 12:30pm to 1:30pm

| Roll No. | Name of the students | Sign |
|----------|--------------------------------|-----------------|
| 1 | Borde Sunita Suresh | <u>Sunita</u> |
| 2 | Misrale Sunil Ramesh | <u>Sunil</u> |
| 3 | Tungare K. Jadhav | <u>K</u> |
| 4 | Jadhav Sunita Wamanrao | <u>Sunita</u> |
| 5 | Mangulkar Ravinder Dnyaneshwar | <u>Ravinder</u> |
| 6 | Saxal R. Raut | <u>R</u> |
| 7 | Gurjit Yashwant Jadhav | <u>Gurjit</u> |
| 8 | Pooja M. Solve | <u>Pooja</u> |
| 9 | Garkate Nilas Suresh | <u>Nilas</u> |
| 10 | Shete vidya Uttarakshwar | <u>Vidya</u> |
| 11 | Wadhwal Pallavi Bhimrao | <u>Pallavi</u> |
| 12 | Bidve Sandeep Mangaram | <u>Sandeep</u> |
| 13 | Jadhav Ravindra Nandkishor | <u>Ravindra</u> |
| 14 | | |
| 15 | Kamble Nilima Mangeshkar | <u>Nilima</u> |
| 16 | More Sachin Bharat | <u>Sachin</u> |
| 17 | Meharaj Abhinav Shivaji | <u>Abhinav</u> |
| 18 | Karan Ramdas Thambare | <u>Karan</u> |
| 19 | Sonwane Manisha Gokul | <u>Manisha</u> |
| 20 | Jyoti Hrishikesh Rajput | <u>Jyoti</u> |
| 21 | Golde Prasad Prabhakar | <u>Prasad</u> |
| 22 | Amil Limbaji Narwade | <u>Amil</u> |
| 23 | Jogle Rohit Rakesh | <u>Rohit</u> |
| 24 | Amal Dhanraj Chavhan | <u>Amal</u> |

| Roll No. | Name of the students | Sign |
|----------|---------------------------------|------|
| 1 | Borde Swati Sahasrao | |
| 2 | Hivrale Supruti Kamlesh | |
| 3 | Tayyarkar K. Tejash | |
| 4 | Jadhav Sunita Madhavrao | |
| 5 | Mamulkar Ravindra Dnyaneshwarao | |
| 6 | Saxat R. Praful | |
| 7 | Gumfi Yashwant Sahasrao | |
| 8 | Patil M. Balraj | |
| 9 | Sarkate Nilas Sahasrao | |
| 10 | Shete Vidyut Ujjayeshwar | |
| 11 | Jadhav Pallavi Dnyanrao | |
| 12 | Bhade Sandeeo Mangarao | |
| 13 | Jadhav Ravindra Nandkishore | |
| 14 | Kamble Nilima Ganpatikar | |
| 15 | More Sachin Bhadraj | |
| 17 | Mehraji Abhinav Abhinav | |
| 18 | Karan Karanlal Thambur | |
| 19 | Somnare Manoj Ganpat | |
| 20 | Jyoti Harsing Rajput | |
| 21 | Patil Prasad Prabhakar | |
| 22 | Patil Limbaji Narasrao | |
| 23 | Patil Rohit Rajkanta | |
| 24 | Patil Dhanashree Dhanraj | |

| Roll No. | Name of the students | Sign |
|----------|---------------------------------|------------|
| 1 | Swati Sahasra Borde | Swati |
| 2 | Sudhmall Kamlesh Hirvale | Sudhmall |
| 3 | Ramprakash K. Jadhav | Ramprakash |
| 4 | Jadhav Sunita Madhanshu | Jadhav |
| 5 | Mangulkar Karandhar Anandashant | Mangulkar |
| 6 | Suresh R. Kulkarni | Suresh |
| 7 | Sumit Yashwant Gokhale | Sumit |
| 8 | poorva M. Sawale | Poorva |
| 9 | Sarkate Vilas Sahasrao | Sarkate |
| 10 | Shruti Vidya Uttaraeshwar | Shruti |
| 11 | Mishra Pallavi Bhimrao | Mishra |
| 12 | Sandeep Anantman Bhave | Sandeep |
| 13 | Ravindra Nandkishore Jadhav | Ravindra |
| 14 | | |
| 15 | Kamble Nilima Vinaykumar | Nilima |
| 16 | More Sachin Bharat | More |
| 17 | Meharaj Anam Shaikh | Meharaj |
| 18 | Karan Kamaldis Thambare | Karan |
| 19 | Somnare Manisha Gokul | Somnare |
| 20 | Tyoti Hatising Rajput | Tyoti |
| 21 | Tride Esmad Prabhakar | Tride |
| 22 | Trilok Limbaji Nagwade | Trilok |
| 23 | Rohit Ravishant Ingle | Rohit |
| 24 | Anat Dinkar Dhangar | Anat |

| Roll No. | Name of the students | Sign |
|----------|--------------------------------|------|
| 16 | More Sachin Bhaoo | |
| 17 | Mehrez Akram Shaikh | |
| 07 | Bajit Bakhare | |
| 19 | Somwase Manisha Gokul | |
| 08 | Satve Poja.M | |
| 03 | Panjavika Jadhav | |
| 01 | Sureshni Kodam | |
| 01 | Ghansad Prabhakar Golde | |
| 12 | Bidve Somnagar Gajanan | |
| 23 | Gayle Rishi Ravi Kant | |
| 02 | Hirapale Swapnil Ramesh | |
| 04 | Jadhav Sunita Manasa | |
| 6 | Sund R. Rauf | |
| 20 | Rajput Ayoh Hatisingh | |
| 01 | Borde Sachi Sahabhai | |
| 11 | Pallavi Bhimrao Kerkhar | |
| 15 | Kamlik Nilima Nandkumar | |
| 9 | Sarkate Vilas Sahabhai | |
| 22 | Narwade Anil Limbol | |
| 18 | Karand Karanday Jhadkar | |
| 13 | Ravindra Kandrishore Jadhav | |
| 04 | Ayod Daxkesh Ganesh | |
| 05 | Mangulkar Ravindra Dnyaneshwar | |
| 10 | Shete Vijay Uttareeswar | |

| Roll No. | Name of the students | Sign |
|----------|-------------------------------|----------------------|
| 1 | Rudra Patil Ramesh | Rudra Patil |
| 2 | BAGAL KETAN VISHU | Ketan Bagal |
| 3 | Omprakash Shrinant Bagal | Omprakash Bagal |
| 4 | Priyanka Prakash Bhugat | Priyanka Bhugat |
| 5 | Nitesh Bhimeno Bhakre | Nitesh Bhakre |
| 6 | Bhaskar Vikal Chavanbhan | Bhaskar Chavan |
| 7 | Sheetal Shridharan Borde | Sheetal Borde |
| 8 | Ketan Prakash Borde | Ketan Borde |
| 9 | Sachin Nandji Chavanbhan | Sachin Chavan |
| 10 | Chandrakant Rohini Chavanbhan | Chandrakant Chavan |
| 11 | Chinmay Pr. Harwarde | Chinmay Harwarde |
| 12 | | |
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| 20 | Sonal Eshu Rajput | Sonal Rajput |
| 21 | | |
| 22 | Sachin Prakash Sonale | Sachin Sonale |
| 23 | Somnath Ganesh Laxman | Somnath Laxman |
| 24 | Somnath Laxman S | Somnath Laxman |
| 25 | Thakare Nandji Gajal | Thakare Nandji Gajal |
| 26 | Sachin Ravindra Gidra | Sachin Gidra |
| 27 | | |

28

KRISHNA SANJAY JANKAR

K.S.J.

29

WASHIM AMOL BHAGAT

30

Chandrabhaskar Pankaj Patil

31

Saikat Malabika Pagar

Prashant Patil
Prashant Patil

Roll No.

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| Roll No. | Name of the students | Sign |
|----------|----------------------------|------|
| 01 | Basol Patal Bantars | |
| 27 | Vishal Sopan Yakte | |
| (28) | KARAN SANNY WANKHARE | |
| 17 | Mangesh Tarabek More | |
| 09 | Sachin Khande/Chakraside | |
| 19 | Namrata Datta Jure | |
| 09 | Washim Patel Bhagwat | |
| 23 | Somnath Ganesh Lokman | |
| 203 | Sonu Deep Rajput | |
| 25 | Somnath Jyotirm Sudhakar | |
| 05 | Nilesh Animesh Ishareoo | |
| 26 | Sachin Ravindra Tidar | |
| 04 | Priyanka Prakash Ghayal | |
| 07 | Bhude Sacha Sathar | |
| 30 | Chandraprakash Kumar Patil | |
| 07 | Shefal B Shantaram Borde | |
| 06 | Bhaskar Nilesh Chandrabhan | |
| 14 | SNEHAL . PRITIP . JAYARAM | |
| 11 | ANURAG . M . HIRORALE | |
| 22 | Sachin Pralad Sonalk | |
| 25 | Thakare Nishankumar Gokul | |
| 2 | # BHARAT KARAN NAY | |
| 08 | Kalpin Prakash Gonde | |
| 01 | Garuda Malharu Pagare | |
| 03 | Ramela Rao B. Bantars | |

| Roll No. | Name of the students | Sign |
|----------|----------------------------|------|
| 05 | Nilesh Ghimara Ghole | |
| 26 | Saahin Ravindra Tikke | |
| 14 | Genel. Pratik. Kulkarni | |
| 30 | Chandraprakash Purni Patil | |
| 06 | Bhalero Vaid Chantaban | |
| 22 | Somason Ganesh Lakshmi | |
| 24 | Sandhya Laxmi Sudhakar | |
| 22 | Sachin Prakash Sonale | |
| 28 | KRAN SANYI WANKHARE | |
| 17 | Mangesh Tejendra More | |
| 09 | Sachin Mandi Chabukdar | |
| 19 | Namrata Datta Patil | |
| 29 | Washimke Anil Bhagat | |
| 2 | Pratik Ketan Waj | |
| 25 | Thakare Nishu Krunal Gokul | |
| 20 | Sonu Deep Rajput | |
| 07 | Shetal. Shantaram Bode | |
| 04 | Prayanka Prakash Shingat | |
| 27 | Vishal Sagar Yate | |
| 01 | Prasen Prasad Rendas | |
| 11 | Ghimara. M. Hissarale | |
| 31 | Saahin Prakash Sonale | |
| 08 | Kalyan Prakash Sonale | |
| 31 | Saahin Prakash Sonale | |
| 31 | Saahin Prakash Sonale | |
| 03 | Rameshwar Ghimara Bantke | |

| Roll No. | Name of the students | Sign |
|----------|----------------------------------------|------|
| 10 | Chandeed Rohini Sambhadrarao | |
| 23 | Vakre Vishal Sopan | |
| 22 | Gadgil Pralhad Sonali | |
| 2 | Bhargal Ketan Vijay | |
| 25 | Thakare Nikan Kumar Gokul | |
| 29 | Washimkar Amal Bhagwat | |
| 19 | Namrata Datta Jyoti | |
| 17 | Mangesh Jayambak Mohan | |
| 09 | Karim Akbar Manda Chakrasal | |
| 28 | KARAN SANJAY WIKRABDE | |
| 01 | Badasa Raju Fondas | |
| 05 | Nilesh Bhimrao Ganeshrao | |
| 24 | Somnath Krishna Sudhakar | |
| 30 | Chandrashekhar Purnali Pralhad | |
| 23 | Somnath Ganesh Lalman | |
| 20 | Sonali Anil Bhagat | |
| 14 | Sheral PRAHAP Kalamus | |
| 04 | Parhanka Prakash Bhagat | |
| 26 | Sachin P. Tilda Bhimrao M. Hidarale | |
| 11 | Bhimrao M. Hidarale | |
| 06 | Ghansara Nikas Chandraharan | |
| 07 | Shetal. Shantaram Bende. | |
| 08 | Kalyan Pralhad Bende | |
| 31 | Sanku Mahesh Rajare | |
| 03 | Rameshadas Bhimrao Bhaskar | |

| Roll No. | Name of the students | Sign |
|----------|-------------------------------|------------|
| 1 | BADSAI POWLE Pradip | Pradip |
| 2 | BHAGAL KETAN VEJAY | Ketan |
| 3 | BURKAT KAMESHWAR BHIMRAO | Burkat |
| 4 | BHARGAT PARYANKAR PRAKASH | Prakash |
| 5 | | |
| 6 | BHALERAO VIKRANT CHANDRASHAN | Vikrant |
| 7 | SHEETAL SHARDESHAM BORDA | Sheetal |
| 8 | BORDE KARAN ANURAG | Karan |
| 9 | CHHAIKAR SACHIN ABHINAV | Sachin |
| 10 | GHANTASEKAR RAHUL SOMBHADIRAO | Rahul |
| 11 | GHANTASEKAR M. HIRANVASE | Hirnavase |
| 12 | | |
| 13 | | |
| 14 | | |
| 15 | | |
| 16 | | |
| 17 | MORE MANOJESH TAYANBAP | Manoj |
| 18 | | |
| 19 | | |
| 20 | SOMJI RAJESH | Rajesh |
| 21 | | |
| 22 | SACHIN PRALHAD SMOLE | Sachin |
| 23 | SOMWANE GANESH LAXMAN | Ganesh |
| 24 | SOMWANE LAKSHMAN SUDHAKAR | Lakshman |
| 25 | THAKARE NUTANKUMAR GOKUL | Nutankumar |
| 26 | SACHIN R. TILAK | Sachin |
| 27 | | |

28 → KARAN SANJAY LAXMIBABE K.L.S
 29 Washinge Prasad Rajgopal
 30 → Chandraprakash Prasad Anurag
 31 → Sankar Prasad Prasad Prasad

| Roll No. | Name of the students | Sign |
|----------|--------------------------------|------------------|
| 10 | (Rohini) Rohini Sambhalrao | (Rohini) |
| 05 | Nitesh Animesh Bhatnagar | (Nitesh) |
| 21 | Vishal Sapan Yakte | (Vishal) |
| 20 | Sonal Bipul Rajput | (Sonal) |
| 06 | Charan Vitesh Chandraharan | (Charan) |
| 30 | Chandraprakash Parnai Parthada | (Chandraprakash) |
| 09 | Sachin Anand Chakrasa | (Sachin) |
| 22 | Sachin Pralhad Sonale | (Sachin) |
| 29 | Santosh Jyotika Sankar | (Santosh) |
| 11 | Bhimesh Mahesh Hingore | (Bhimesh) |
| 23 | Somnath Ganesh Laxman | (Somnath) |
| 04 | Payanka Prakash Bhagat | (Payanka) |
| 07 | Shetal Sharadham Borde | (Shetal) |
| 14 | General. Pooja. Karanwar | (Pooja) |
| 19 | Narmada Datta Jari | (Narmada) |
| 01 | Bodak Rohit Ramdas | (Bodak) |
| 02 | ADARSH KETHAV YEDY | (Adarsh) |
| 25 | Thakur Nutan Kumar Gokul | (Thakur) |
| 26 | Sachin Pralhad Gidde | (Sachin) |
| 17 | Mangal Jayant Prasad | (Mangal) |
| 05 | Kiran Suresh Lankhede | (Kiran) |
| 29 | Pravir Bhagwat Vasthimb | (Pravir) |
| 31 | Savitri Mahadev Patil | (Savitri) |
| 08 | Kalyan Prakash Borde | (Kalyan) |
| 03 | Rameshwar B. Bhatkar | (Rameshwar) |

| Roll No. | Name of the students | Sign |
|----------|---------------------------------|------|
| 12 | Sandeep Gajanan Bhave | |
| 07 | SMIT-YASHWANT SAKHARE | |
| 9 | Sarkate Vilas Sahabrao | |
| 20 | Rajput Jyoti Harisingh | |
| 23 | Rohit Ravindra Ingle | |
| 21 | Prasad Prabhakar Gajde | |
| 04 | Jadhav Sunita Manmangao | |
| 03 | Jadhav Rajyanka K. | |
| 08 | Pooja Manik Salve | |
| 11 | Pallavi Bhimrao Wavhal | |
| 15 | Lambl Nilima Prasadrao | |
| 13 | Jadhav Ravindra Nandkishor | |
| 22 | Naravade Anil Manoj | |
| 02 | Khivrale Swapnal Kamlesh | |
| 01 | Borde Swati Sahabrao | |
| 19 | Soumen Mondra Gorai | |
| 17 | Maheraj Akram Shaikh | |
| 6 | Saral R. Raut | |
| 18 | Karav Ramdas Thombkar | |
| 16 | Mate Sachin more | |
| 25 | Sureshni Kadam | |
| 05 | Arav Dheepak Dargot | |
| 05 | Manjulkar, Kuntalra Ontarashwar | |
| 10 | Bhate Vilas Uttaraeswar | |

| Roll No. | Name of the students | Sign |
|----------|-------------------------------|------|
| 16 | More Sachin Bharat | |
| 17 | Meheraj Akram Shaikh | |
| 07 | Sunil Yashwant Sakhare | |
| 19 | Soumen Mondisha Gorul | |
| 08 | pojo. M. seve | |
| 03 | Tanjanika - K. Jadhav | |
| 01 | Borde suati sahetoo | |
| 11 | Pallavi Bhimraj uschhal | |
| 01 | Kadam sutichin Tribak | |
| 01 | Framed Prabhakar Gode | |
| 12 | Sandeep Chaganam b. dave | |
| 23 | Rohit Ravikiran Snyte | |
| 02 | Hitarale Suiparnal Ramesh | |
| 04 | Jadhav Sunitha Manojrao | |
| 6 | Suresh R. Pawt | |
| 20 | Pani Limballi Nitiraj | |
| 20 | Rajput Jyoti Hitesingh | |
| 15 | Karolik Nilima Somprakash | |
| 9 | Sarkate Vilas Satebjac | |
| 18 | Katam Ramdas Thandare | |
| 13 | Jadhav Ravindra Kanchischoe | |
| 24 | Ashok Dadasaheb Chhangol | |
| 05 | Mamulkar Ravindra Dnyaneshwar | |
| 10 | Shete Vilay uttreshwar | |

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MILIND COLLEGE OF SCIENCE

Nagsenvan Aurangabad-431002

Department of chemistry

Internal Examination-Ist 2018-19

Attendance Report

Class - M.Sc. SEMESTER IInd

Subject - organic chemistry
(007)

Date - 08/12/2020

Time - 10:00 am to 11:00 am

| Roll No. | Name of the students | Sign |
|----------|-------------------------------|------|
| 02 | BAGAL Ketan Vijay | |
| 01 | Rudrat Rowit Komdas | |
| 3 | Rameshwar Bhimrao Bantak | |
| 4 | Priyanka Prakash Bhagat | |
| 5 | Nilesh Bhalerao | |
| 6 | Bhalerao Vikas Chandrabhan | |
| 7 | Sheetal Shantaram Borde | |
| 8 | Kalyan Prakash Borude | |
| 9 | Sachin Nandil Chabukdar | |
| 10 | Ghanterwad Rohini Sambhalimao | |
| 11 | Bhimrao Mohan Hiorale | |
| 12 | Ajit Suresh Jogle | |
| 13 | Sonali Rajput | |
| 14 | | |
| 15 | | |
| 16 | | |
| 17 | | |
| 18 | | |
| 19 | | |
| 20 | Sonali Rajput | |
| 21 | | |
| 22 | Sachin Pralhad Sonale | |
| 23 | Sonawane Ganesha Lakshman | |
| 24 | | |
| 25 | | |
| 26 | Sachin Ravindra Tidke | |
| 27 | Vakte Vishal Sopan | |
| 28 | Karan Sanjay WANKHADE | |

30

C. F. Patwardi

Patwardi

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MILIND COLLEGE OF SCIENCE

Nagsenvan Aurangabad-431002

Department of chemistry

Internal Examination-1st 2019-20

Attendance Report

Subject: che-418

Time: 11:30am to 12:30pm

Class—M. Sc. SEMESTER IIInd

Date: 07/02/2020

| Roll.No. | Name of the students | Sign |
|----------|---------------------------------|-----------|
| 1 | | |
| 2 | Hiwrale Swapnali Ramesh | Hiwrale |
| 3 | Jadhav Pooiyanka Kailash | Jadhav |
| 4 | Jadhav Sunita Waman Rao | Jadhav |
| 5 | Mamjulkar Ravindra Dhananeshwar | Mamjulkar |
| 6 | Sural R. Raut. | Sural |
| 7 | Sumit Y. Sakhare | Sumit |
| 8 | Pooja. M. Salve | Pooja |
| 9 | Sarkate Vilas Sahebrao | Sarkate |
| 10 | Shete Vijay Uttareshwar | Shete |
| 11 | Pallavi B. Werhal | Pallavi |
| 12 | Bidve Sandeep Bidve | Bidve |
| 13 | Jadhav Ravindra Nandkishore | Jadhav |
| 14 | | |
| 15 | Kamble Nilima Vangadhar | Nilima |
| 16 | More Sachin More | More |
| 17 | Meheraj Akram Shaikh | Meheraj |
| 18 | Karan Ramdas Thombast | Karan |
| 19 | Sonwane Manisha Gokul | Sonwane |
| 20 | Rajput Jyoti Hatising | Rajput |
| 21 | Galde Pramod Prabhakar | Galde |
| 22 | Narwade Amit Limbaji | Narwade |
| 23 | Ingle Rohit Ravikant | Ingle |
| 24 | | |
| 25 | | |
| 26 | | |
| 27 | | |
| 28 | | |

People's Education Society (Mumbai)

MILIND COLLEGE OF SCIENCE

Nagsenvana Aurangabad-431002

Department of chemistry

Internal Examination - 1st 2020

Attendance Report

Med. Che. CHE-220
Sub: organic chemistry (CHE-103)

Class - M.Sc SEMESTER I

Date: 08/02/2020

08/02/2020

| Roll No. | Name of the students | Sign |
|----------|---------------------------------|-------------|
| 1 | | |
| 2 | Hiwrale Swapnali Ramesh | SP Hiwrale |
| 3 | Jadhav Poojanika | Jadhav |
| 4 | Jadhav Sunita Wamanrao | Jadhav |
| 5 | Mamijulkar Ravinder Dnyaneshwar | Mamijulkar |
| 6 | Suraj R. Raut | Suraj |
| 7 | Sumit Y. Sakhare | Sumit |
| 8 | Pooja M. Solve | Pooja |
| 9 | Sarkate Vilas Sahebrao | Sarkate |
| 10 | Shete Vijay Uttareswar | Shete |
| 11 | Pallavi B. Wewhal | Pallavi |
| 12 | Bidwe Sandeep Gajanan | Bidwe |
| 13 | Jadhav Ravindra Nandkishore | Jadhav |
| 14 | | |
| 15 | Kamble Nilima Vengadhare | Nilima |
| 16 | More Sachin Bharat | More |
| 17 | Meharaj Akram Shaikh | Meharaj |
| 18 | Karan Ramesh Thombare | Karthombare |
| 19 | Sonawane Manisha Gokul. | Manisha |
| 20 | Rajput Jyoti Harising. | Rajput |
| 21 | Golde Pramod Prabhakar | Golde |
| 22 | Narwade Anil Limbaji | Narwade |
| 23 | Jogle Rohit Ravikant | Jogle |
| 24 | | |
| 25 | | |
| 26 | | |
| 27 | | |

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Nagsenvan Aurangabad-431002

Department of chemistry

Internal Examination-Ist 2019-20

Attendance Report

Class—M. Sc. SEMESTER IVth

Subject: - Retrosynthesis

Date: - 07/02/2020.

Time:- 10:03 AM to 11:15 PM

| Roll.No. | Name of the students | Sign |
|----------|--------------------------------|-----------|
| 1 | | |
| 2 | Hiwrale Swapnali Ramesh | Hiwrale |
| 3 | Priyanka K. Jadhav | Priyanka |
| 4 | Jadhav Sunita Lalmanjan | Jadhav |
| 5 | Manjulkar Ravindea Dnyaneshwar | Manjulkar |
| 6 | Saxal R. Raut | Raut |
| 7 | Sumit Y. Sakhare | Sumit |
| 8 | pooja.M. salve | Salve |
| 9 | Shete Vijay Uttareshwar | Shete |
| 10 | Rohit R. Ingle | Rohit |
| 23 | pallavi B. Wewhal | Pallavi |
| 11 | | |
| 12 | Bidve Sandeep Gajanan | Bidve |
| 13 | Ravindea Nandkishore Jadhav | Ravindea |
| 14 | | |
| 15 | Kamble Nilima Mangadkar | Nilima |
| 16 | Sachin Bharat More | Sachin |
| 17 | Meheraj Akram Shaikh | Meheraj |
| 18 | Karan Ramdas Thorabur | Karan |
| 19 | Sonwane Manisha Gokul | Sonwane |
| 20 | Rajput Jyoti Harisingh | Rajput |
| 21 | Narwade | |
| 22 | Narwade Amil limbaji | Narwade |
| 23 | | |
| 24 | | |
| 25 | | |
| 26 | | |
| 27 | | |
| 28 | | |

09 Sarkate Vilas Sahebrao

V. Sarkate

Internal Examination-1st 2019-20

Attendance Report

Class - M. Sc. SEMESTER IVth

Date: - 07/09/2020

Subject: - Inorganic Chem.

Time: - 11:30 am to 12:30 pm

| Roll No. | Name of the students | Sign |
|----------|------------------------------|------|
| 1 | Nitesh Ghalekar | |
| 2 | Prachi Kelen vijay | |
| 3 | Saibin M. Chabankar | |
| 4 | Ashwin P. Sonde | |
| 5 | Sanishree Suresh Lakshman | |
| 6 | Radical Pooja Pondekar | |
| 7 | | |
| 8 | Kalyan Anukash Borude | |
| 9 | | |
| 10 | Ghanpreet Rohini Sambhalisao | |
| 11 | Divyaa Mishra | |
| 12 | C. R. Pruthiwalke | |
| 13 | Ajit Suresh Trigle | |
| 14 | Rameshwar Bhimrao Bhandarkar | |
| 15 | KARAN SANTAP WANKHADE | |
| 16 | Bhadraro vikas Chandrabhan | |
| 17 | Sheetal S. Borde | |
| 18 | Priyanka Prakash Bhargat | |
| 19 | Sonab Divyasing Rajput | |
| 20 | | |
| 21 | | |
| 22 | | |
| 23 | | |
| 24 | | |
| 25 | | |
| 26 | | |
| 27 | Vakte Vishal Sopan | |
| 28 | | |

| Roll No. | Name of the students | Sign |
|----------|-------------------------------|---------|
| 1 | | |
| 2 | Hirale Swapnal Ramesh | spkate |
| 3 | Jadhav Poojanka | spkate |
| 4 | Jadhav Sunita Lalmanrao | spkate |
| 5 | Mamulkar Ravindra Dnyaneshwar | spkate |
| 6 | Sawade R. Ravi | spkate |
| 7 | Sumit Y. Gakhare | spkate |
| 8 | Pooja M. Solve | spkate |
| 9 | Sarkate Nilag Sabetraya | spkate |
| 10 | Shete vijay uttreshwar | spkate |
| 11 | Pallavi B. Weyhal | spkate |
| 12 | Bidve sandeep Sureshwar | spkate |
| 13 | Jadhav Ravindra Mahdikishore | spkate |
| 14 | | |
| 15 | Kamble Nilima Mangadhare | Nilima |
| 16 | More Sachin Bharat | Sachin |
| 17 | Mehraj Akram Shaikh | Shaikh |
| 18 | Kanar Ramdas Thotrar | Ramdas |
| 19 | Sonwane Manisha Anant | Manisha |
| 20 | Raipur Jyoti Patising | Jyoti |
| 21 | Galde Pramod Prabhakar | Pramod |
| 22 | Murawade Anil Himabli | Anil |
| 23 | Shirga Rohit Ravindra | Rohit |
| 24 | | |
| 25 | | |
| 26 | | |
| 27 | | |
| 28 | | |



Subject:- Photochemistry, Free Radical & Pericyclic(CHEO-316)

Maximum Marks-20

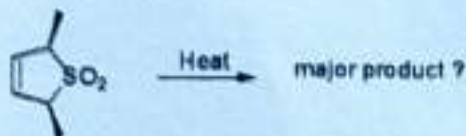
Class—M. Sc. SEMESTER-III

Time:- 1 hrs

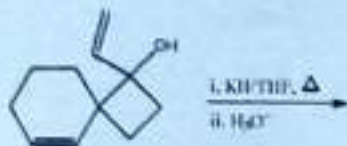
Q.1 Attempt any five

[10 Marks]

1. Explain the Diels – Alder Reaction with Example ?
2. Predict the major product of the following .



3. Write a note on [2+2] Cycloaddition reaction in Thermal Condition with example?
4. Identify the major product of this pericyclic reaction?



5. Explain with example of Con Rotation & Dis Rotation ?
6. Identify the major product of this reaction & Explain stereochemistry ?




7. What is major product obtained for this Reaction?



Q.2 Attempt any Two

[10 Marks]

1. Explain Correlation Diagram for the 1,3,5 – Hexatriene in Electrocyclic Reaction?
2. Explain Huckel – Mobius Aromatic and Antiaromatic transition state in Cycloaddition Reaction?
3. Explain Wood Ward – Hoffman Rule in Electrocyclic Reaction?


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Subject:- Spectroscopic methods(CHE-205)
Class—M. Sc. SEMESTER-II

Maximum Marks 20
Time:- 45 min.

1. How many possible orientation do spin $\frac{1}{2}$ nuclei have when they are located in a applied magnetic field

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

2. What is the correct increasing order of stretching frequencies for $C=C$, $C=C$ and $C-C$

- a) $C-C > C=C > C=C$ b) $C=C > C=C > C-C$
c) $C-C > C=C < C=C$ d) $C=C < C-C > C=C$

3. What is the number of vibrational degrees of freedom in $C_6H_5CH_3$

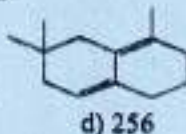
- a) 39 b) 15 c) 18 d) 40

4. Which of the following molecules will not show infrared spectrum?

- a) H_2 b) HCl c) CH_4 d) H_2O

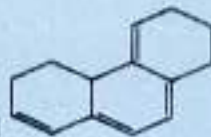
5. Calculate λ_{max} value of compound

- a) 234 b) 239 c) 249



6. Calculate λ_{max} value of compound

- a) 337 b) 342 c) 347 d) 353



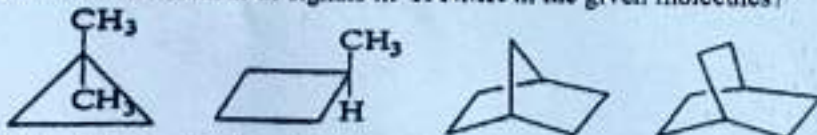
7. The distance between the centers of the peaks of doublet is called as?

- a) Coupling constant b) Spin constant c) Spin-spin coupling d) Chemical shift

8. A proton H_b is coupled to four equivalent protons H_a . The multiplicity and the relative intensity of lines in the signal H_b is?

- a) Doublet, 1 : 4 b) Triplet, 1 : 4 : 6 c) Quintet, 1 : 4 : 6 : 4 : 1 d) Quartet, 1 : 4 : 6 : 4

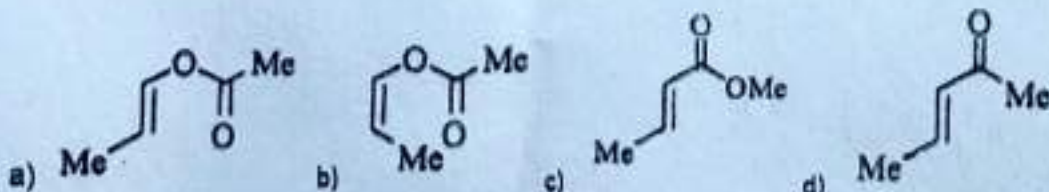
9. What are the number of signals in 1H NMR in the given molecules?



- a) 3, 4, 4, 3 respectively b) 2, 6, 4, 2 respectively
c) 2, 4, 6, 2 respectively d) 2, 4, 2, 6 respectively

10. An organic compound Q exhibited the following spectral data obtained by spectroscopy.

IR: 1760 cm^{-1} 1H NMR: chemical reference (ppm): 7.2 (1H, d, 16.0 Hz), 5.1 (1H, m), 2.1 (3H, s), 1.8 (3H, d, $J = 7.0$ Hz)





MILIND COLLEGE OF SCIENCE

DEPARTMENT OF CHEMISTRY

M. Sc. Chemistry III Semester

CHEO 315-Asymmetric Synthesis and Bio-organic Chemistry

Internal Evaluation November 2022

Time : 1Hr

Marks:20

Que.1) Answer in brief (Any Five)

10 Marks

- 1) Define the terms Enzyme
- 2) Draw the structure of substrate of Lysozyme.
- 3) Describe the factors affecting Enzyme action.
- 4) Write the mechanism of action TPP coenzyme.
- 5) Differentiate Cofactor and Coenzyme
- 6) Write Classification of enzyme
- 7) Draw chemical structure of Haemoglobin.

Answer the following in detail (Any Two)

10 Marks

- 1) Write the derivation of Michaelis and Menten Equation for enzyme catalyzed reaction.
- 2) Explain in detail three types of reversible inhibition in enzyme action.
- 3) Describe the mechanism of action of alpha chymotrypsin.

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- 1) The parent name of isoprene is –
a) 2-methyl butane b) 3-methyl butane c) 2-methyl butanol d) 2-methyl butanone.
- 2) Tetra cyclic terpenes contain---- ring their structure
a) 2 b) 3 c) 4 d) 5
- 3) The cis form of citral is known as.
a) Geranial b) Neral c) Citral d) Geraniol
- 4) The molecular formula of α -Terpineol is----
a) $C_{10}H_{18}O$ b) $C_{10}H_{20}O$ c) $C_{10}H_{20}O_2$ d) $C_{15}H_{25}O$
- 5) In menthol oxygen is present in the form of functional group is----
a) Aldehyde b) Ketone c) Alcohol d) Acid
- 6) Which hetero atom Mostly present in the alkaloid.
a) Oxygen b) Sulfur c) Nitrogen d) None of these
- 7) Which heterocyclic skeleton present in the Nicotine
a) Indole b) Quinoline c) Pyridine d) Oxane
- 8) Molecular formula of the Citral is
a) $C_{10}H_{16}O$ b) $C_{10}H_{18}O$ c) $C_8H_{16}O$ d) $C_{10}H_{10}O$
- 9) How many chiral center present in Menthol
a) 1 b) 2 c) 3 d) 4
- 10) Which of the following common function group present in the alkaloid structure
a) Amine b) Carboxylic Acid c) Amide d) Ketone


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Department of chemistry
Internal Examination- Nov/ 2022

Subject- Asymmetric Synthesis and Bio-organic Chemistry (CHE-315)

Maximum Marks-20

Class—M. Sc. SEMESTER-III

Time: - 1 hrs

Que.1) Answer in brief (Any Five)

[10 Marks]

1. Define the terms Enzyme
2. Draw the structure of substrate of Lysozyme.
3. Describe the factors affecting Enzyme action.
4. Write the mechanism of action TPP coenzyme.
5. Differentiate Cofactor and Coenzyme
6. Write Classification of enzyme
7. Draw chemical structure of Haemoglobin.

Que.2) Answer the following in detail (Any Two)

[10 Marks]

1. Write the derivation of Michaelis and Menten Equation for enzyme catalyzed reaction.
2. Explain in detail three types of reversible inhibition in enzyme action.
3. Describe the mechanism of action of alpha chymotrypsin.


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Department of chemistry
Internal Examination-2022

Subject:- Inorganic Chem(CHE-206)
Class—M. Sc. SEMESTER-II

Maximum Marks 20
Time:- 45 min.

Q. 1. Total spin multiplicity is given by.....

- a) $2S-1$ b) $S+1$ c) $2S+1$ d) $S-1$

Q.2. Ground term Symbol for carbon atom is....

- a) 1D_0 b) 3D_0 c) 3P_0 d) 1P_0

Q.3. In d^7 weak field octahedral complex -----unpaired electron present.

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

Q.4. In crystal field splitting diagram for tetrahedral complex -----orbital has lower energy.

- a) t_{2g} b) d_{xy} c) d_{yz} d) e_g

Q.5. In crystal field splitting diagram for Octahedral complex -----orbital has higher energy.

- a) t_{2g} b) d_{xy} c) d_{yz} d) e_g

Q.6. What is CFSE for d^2 ion in tetrahedral complex?

- a) $-4 Dq + 2P$ b) $-12 Dq + 0p$ c) $-6 Dq + 2P$ d) $-8 Dq + P$

Q.7. What is symmetry symbol for s orbital?

- a) t_{2g} b) a_{1g} c) t_{1u} d) e_g

Q.8. Given the symmetry symbol for p orbital?

- a) t_{2g} b) a_{1g} c) t_{1u} d) e_g

Q.9. Orgel diagram for d^n octahedral and tetrahedral configuration gives rise to similar splitting is ?

- a) d^{10-n} b) d^{n-2} c) d^{n+2} d) d^{n+3}

Q.10. In complex the central metal atom is considered as electron acceptor and the ligand as electron donor. Hence ligands are ----- reagents.

- a) electrophilic b) acidic c) nucleophilic d) basic

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Department of chemistry
Internal Examination- Nov/ 2022

Subject- Physical Chem(CHE-104)

Maximum Marks-20

Class—M. Sc. SEMESTER-I

Time- 1 hrs

Q.1 Attempt any Five question

1. Calculate Ionic Strength of 0.2 M Barium Chloride Solution ?
2. Show Graphically the effect of Ionic Strength on rate constant when $z_A z_B = 0$
 $z_A z_B = +1$ and $z_A z_B = -1$?
3. What are Fast Reaction ? Discuss Stop flow method to study the rate of Reaction?
4. Lindmann Theory of Unimolecular reaction at low pressure ?
5. Calculate Ionic Strength of 0.4 M KBr Solution?
6. Show graphically the effect of Ionic Strength on rate constant when $z_A z_B = -2$, $z_A z_B = 0$
And $z_A z_B = 1$
7. Explain Limitation of Hinsel woods Theory ?

Q.2 Solve any Two

- i) Derivative for collision theory of Bimolecular Reaction?
- ii) Derive expression for Secondary Salt effect?
- iii) Derive expression for Hinsel woods Theory of Unimolecular Reaction?


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1. How many possible orientation do spin $\frac{1}{2}$ nuclei have when they are located in a applied magnetic field

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

2. What is the correct increasing order of stretching frequencies for $C \equiv C$, $C = C$ and $C - C$

- a) $C - C > C = C > C \equiv C$ b) $C \equiv C > C = C > C - C$
c) $C - C > C = C < C \equiv C$ d) $C \equiv C < C - C > C = C$

3. What is the number of vibrational degrees of freedom in $C_6H_5CH_3$

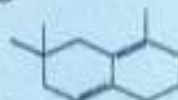
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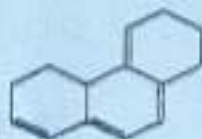
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- a) 234 b) 239 c) 249 d) 256



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- a) 337 b) 342 c) 347 d) 353



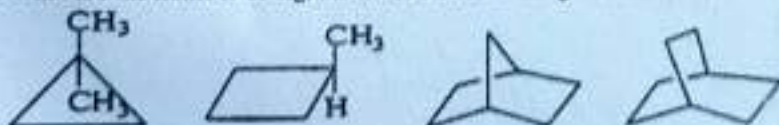
7. The distance between the centers of the peaks of doublet is called as?

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9. What are the number of signals in 1H NMR in the given molecules?

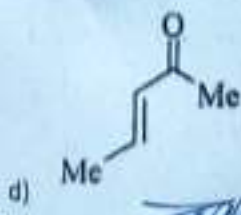
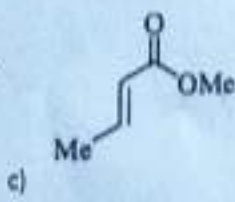
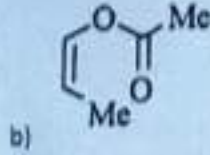
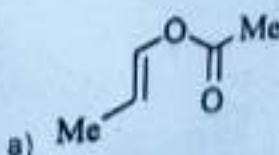


- a) 3, 4, 4, 3 respectively b) 2, 6, 4, 2 respectively

- c) 2, 4, 6, 2 respectively d) 2, 4, 2, 6 respectively

10. An organic compound Q exhibited the following spectral data obtained by spectroscopy.

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Department of chemistry
Internal Examination-2022

Subject:- Medicinal Chemistry (CHEO-418)
Class—M. Sc. SEMESTER-IV

Maximum Marks : 20
Time:- 45 min.

- 1) FDA stands for
a) Federal drug administration b) Food development administration
c) Food and drug administration d) Free drug administration
- 2) Dispensing of medication is done by following except
a) Over the counter b) Behind the counter
c) Prescription only d) without the counter
- 3) The Prodrug form of chloramphenicol is
a) Chloramphenicol Potassium b) Chloramphenicol sodium succinate
c) Chloramphenicol palmitate d) Both b and c
- 4) To measure the potency of agonist drug, the index used is
a) EC50 b) LD50 c) TD50 d) LC50
- 5) Which among the following drugs does not causes physical and psychological addiction
a) Benzodiazepines b) Marijuana c) Methamphetamine d) Heroin
- 6) If the drug gives maximum response then it is expressed with the term
a) Potency b) Efficacy c) Affinity d) Selectivity
- 7) A molecular framework that carries essential features responsible for biological activity is
a) Lead b) Pharmacophore c) Hit d) Drug likeness
- 8) The Lead compound can not be obtained from
a) Natural product b) Chemical Library c) Physicochemical Library
d) Computational Medicinal Chemistry
- 9) Bioisosterism is use for
a) Drug designing b) Lead optimization c) To increase drug likeness d) All of these
- 10) The first theory put forth to understand drug receptor interaction is
a) Induced fit theory b) Rate theory c) Two state theory d) Lock and Key theory


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Department of chemistry

Internal Examination-IInd2018

Subject - Physical chemistry (CHE-200)

Class—M. Sc. SEMESTER-I/Ind

Maximum marks -20

Time -1hr.

Q.1. Solve the following.

05

- 1) The Gibbs phase rule may be expressed in.
a) $P+F = C-2$
b) $F = C - P+2$
c) $P+F = C-1$
d) $F = C+ P+2$
- 2) Number of phase present in water + hexane.
a) 1
b) 2
c) 3
d) 4
- 3) Number of Component, phase and degree of freedom present in saturated KCl solution
a) $P= 2, C=2, F=2$
b) $P= 1, C=1, F=1$
c) $P= 2, C=1, F=1$
d) $P= 2, C=2, F=1$
- 4) $N_2(g) + O_2(g) \longrightarrow 2NO(g)$ no of component present in system.
a) 1
b) 2
c) 3
d) 4
- 5) $Na_2SO_4 \cdot 8H_2O(s) \longrightarrow Na_2SO_4(s) \cdot 8H_2O(l) + 2NO(g)$ no of phase present in system.
a) 1
b) 2
c) 3
d) 4

Q.2. Solve the following.

15

- a) Discuss the phase diagram of one component system with water.
- b) Discuss the phase diagram of three component system with two pair of partially miscible liquid.
- c) Explain two component systems with Lead-silver.


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Department of chemistry

Internal Examination-Ist2018

Subject: - Spectral method of analysis (CHE-308)

Class—M. Sc. SEMESTER-IIIrd

Maximum marks -20

Time -1Hr.

Q.1 Solve the MCQ'S

(05)

1. Increase in the absorption wavelength is called—

- a) Bathochromic shift b) Conjugation effect c) Red shift d) None

2. Substituent that increase the intensity of the absorption and possible wavelength are called-

- a) Substituent b) Auxochrome c) chromen d) λ_{max}

3. Increase the intensity of absorption is known as—

- a) Hypsochromic effect b) Red shift c) Blue shift d) Hyper chromic effect

4. Hypsochromic shift involves shift to—

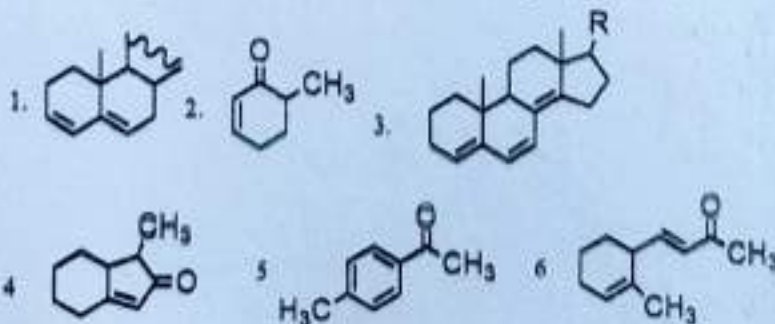
- a) Lower energy b) Higher wavelength c) Shorter wavelength d) Higher intensity

5. $n \rightarrow \pi^*$ transition in UV is

- b) Forbidden c) Intense d) With alkane a) Allowed

Q.2 Calculate the λ_{max} value for the following (any three)

(15)




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Department of chemistry

Internal Examination-IInd 2018

Subject - Retro synthesis (CHE-417)
Maximum marks -20

Class - B. Sc. SEMESTER-4Yr (Time -1hr.)

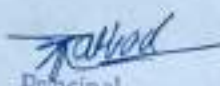
Q.1 Write the note on protection and deprotection of -OH group. (05)

Q.2 Give the Retro synthetic analysis and synthesis of following target molecules. (10)

1. Robinson annelation reaction product as target molecule.
2. Mannich reaction product as target molecule.

Q.3 Give the Retro synthetic analysis and synthesis of following target molecules (any one)

1. Reserpine 2. Camphor (05)
-


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Internal Examination-Ist2018

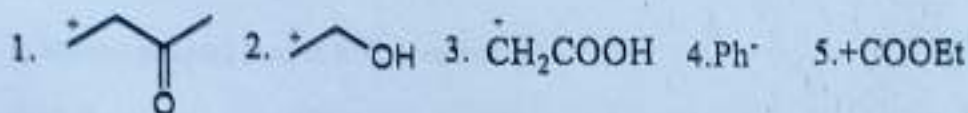
Subject - Retro synthesis (CHE-417)

Class—M. Sc. SEMESTER-IVth

Maximum marks -20

Time -1Hr.

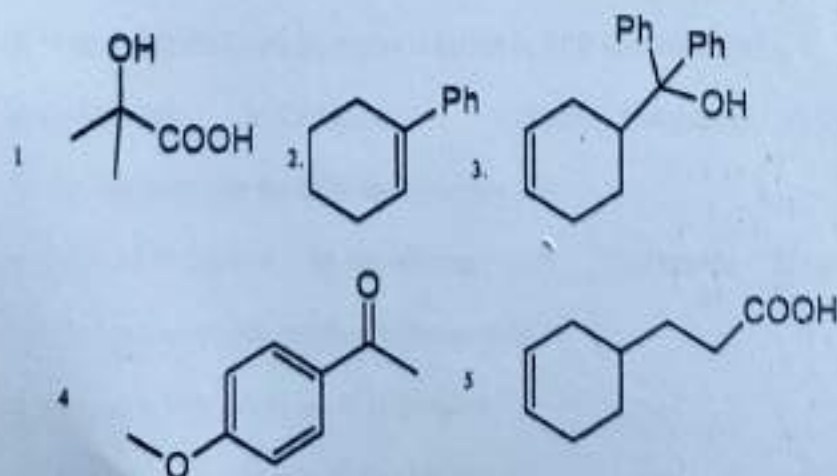
Q.1 Write the synthetic equivalent for the following synthones. (05)




Q.2 Define the terms with examples (05)

- 1) Disconnection approach 2) Synthones
3) Synthetic reagent/equivalent 4) FGI 5) Target molecule.

Q.3 Give the Retro synthetic analysis and synthesis of following target molecules. (10)




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Department of chemistry

Internal Examination-Ist 2018

Subject: - Organic spectroscopy (CHE-313)

Maximum Marks 20

Class—M. Sc. SEMESTER-III

Time -1Hr.

Q.1 Solve the followings (05)

1) Internal standard used in ESR Spectroscopy –

a) TMS b) DPPH c) Barium stannate d) none.

2) The no. of ESR lines observed in CD_3 radical are—

a) 4 b) 3 c) 9 d) 7

3) Which of the following radiation is used in ESR spectroscopy?

a) IR region b) Microwave region c) UV region d) none.

4) Which of the following species is active in ESR spectroscopy?

a) Carbocation b) Carbanion c) Carbon free radical d) Carbene.

5) The selection rule for ESR spectroscopy is—

a) $\Delta m_s = \pm 1/2, \Delta m_l = 0$ b) $\Delta m_s = 0, \Delta m_l = \pm 1/2$ c) $\Delta m_s = 0$ d) $\Delta m_l = \pm 1$

Q.2 Explain zero field splitting with example. (05)

Q.3 Explain ESR spectrum of CH_3 radical. (05)

Q.4 Explain ESR spectrum of $[\text{Mn}(\text{H}_2\text{O})_6]^{2+}$ (05)


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Department of chemistry

Internal Examination-Ist 2018

Subject-Physical Chemistry(CHE-316)

Maximum Marks-20

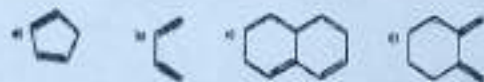
class—M. Sc. SEMESTER-III

Time -1Hr.

Q1. Select appropriate answer

(05)

1. Which of the following is correct feature of pericyclic reaction.
a) It is thermal and photochemical process b) It is single step c) It is reversible d) All the above
2. Which of the following diene undergoes Simm-Dick Alder reaction.



3. The example of 4+3 cycloaddition is
a) Cope rearrangement b) Diels Alder reaction c) Claisen rearrangement reaction d) None of the above

2. Predict the products

4. The following sigmatropic shift is-



- a) 1,3 H shift reaction
b) 1,5 H shift
c) 1,7 H shift
d) 1,3 H shift

3. Explain the endo and exo rule for Diels Alder

1. The following reaction is -



- a) Cycloaddition reaction b) Electrocyclic reaction c) Sigmatropic reaction d) Chelotropic reaction

Q.1 Solve the following

(08)

1. Solve with selection rule



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Internal Examination-1st 2018

Subject: - Organic synthesis (CHE-314)

Maximum Marks 20

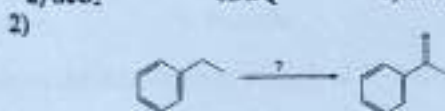
Class—M. Sc. SEMESTER-I-II

Time -1Hr.

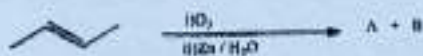
Q1) Multiple choice questions (5)

1) Which if the following is used to convert cyclohexanone to benzene

- a) SeO_2 b) DDDQ c) KMnO_4/H^+ d) All of these



- a) SeO_2 b) $\text{KMnO}_4/\text{OH}^-$ c) IBX d) Ag_2CO_3



- a) Aldehyde + Ketone b) Ketone + Aldehyde c) Both Aldehyde d) Both Ketone

4) LTA is used for

- a) Preparation of aldehyde b) 1,2 diols c) 1,3 diols d) Both b and c



- a) PCC b) PDC c) $\text{K}_2\text{Cr}_2\text{O}_7/\text{H}^+$ d) KMnO_4/O

Q2) Complete the following transformation (any three)..... (6)

1)

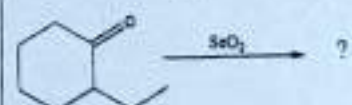
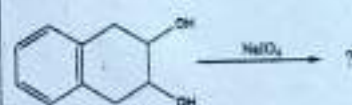
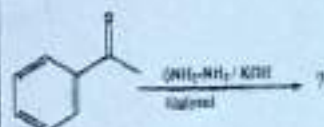
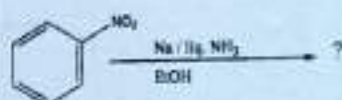


2) What is Etard Reaction, Give any suitable example

3) Reduction of Nitrile by using DIBAL-H give suitable example.

4) Reduction of Nitro group give any three reducing agents.

Q.3) Complete the following transformation with mechanism (any three)..... (9)



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Department of chemistry

Internal Examination-Ist2018

Subject - Medicinal chemistry (CHE-420)

Class—M. Sc. SEMESTER-IVth

Maximum marks -20

Time -1Hr.

Q.1 Solve the MCQ'S

(05)

1. Which of the following is not Anti-inflammatory drug?

- a) Naproxen b) Ibuprofen c) Celecoxib d) Diltazem.

2. Which of the following is an example of CNS stimulant?

- a) Cefipime b) Naproxen c) Diazepam d) Celecoxib.

3. Which of the following drug is used on high blood pressure?

- a) Verampil b) Rofecoxib c) Ketamine d) Ampiciline.

4. Antibiotic drug is,

- a) Chloramphenicol b) Procaine c) Celecoxib. d) Ibuprofen.

5. Ketamine drug is used as,

- a) Anti-inflammatory b) CNS stimulant c) Anesthesia d) Anti-hypertensive.

Q.2 Solve the following (any five).

(15)

a) Give the synthesis of Naproxen

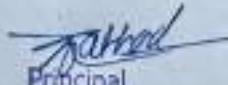
b) Give the synthesis of Ibuprofen.

c) Give the synthesis of Dextro-amphetamine

d) What is use and side effect of Diltazem?

e) Write structure of Chloramphenicol, Ampiciline and Amoxicillin.

f) Give the synthesis of any example of Antibiotic drug


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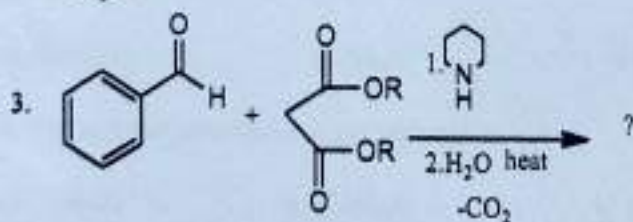
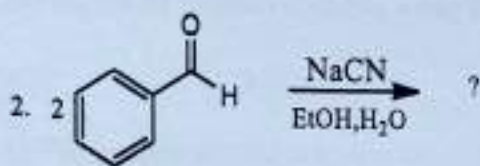
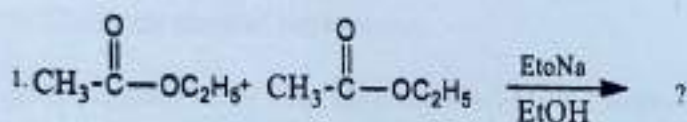
Subject: - Organic chemistry(CHE-207)

Class—M. Sc. SEMESTER-IInd

Maximum marks -20


Time -1Hr.

Q.1 Predict the product with mechanism. (10)



Q.2 Write a short note on Perkin reaction. (05)

Q.3 Write a short note on Mannich reaction. (05)


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Department of chemistry

Internal Examination-Ist2018

Subject: - Natural product (CHE-419)

Class—M. Sc. SEMESTER-IVth

Maximum marks -20

Time -1hr.

Q1. Select appropriate option for the following (05)

1) The parent name of isoprene is –

a) 2-methyl butane b) 3-methyl butane c) 2-methyl butanol d) 2-methyl butanone.

2) Tetra cyclic terpenes contain---- ring their structure

a) 2 b) 3 c) 4 d) 5

3) The cis form of citral is known as.

a) Geranial b) Neral c) Citral d) Geraniol

4) The molecular formula of α -Terpineol is----

a) $C_{10}H_{18}O$ b) $C_{10}H_{20}O$ c) $C_{10}H_{20}O_2$ d) $C_{15}H_{25}O$

5) In menthol oxygen is present in the form of functional group is-----

a) Aldehyde b) Ketone c) Alcohol d) Acid


Q2 .Solve the following (any three) (15)

1) Write the synthesis of Menthol

2) Write the synthesis of farnisol

3) Write the synthesis of α -Terpineol

4) Write the four configuration of Menthol


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Internal Examination-IInd2018

Subject - Natural product (CHE-419)

Class—M. Sc. SEMESTER-IVth

Maximum marks -20

Time -1hr.

Q. No. 1. Solve the following. (ANY FOUR)

(20)

- 1) Write the synthesis of citral with explanation.
- 2) Write the Perkin synthesis of α -Terpineol.
- 3) Explain the position of two conjugated double bond in the ring of Zingiberen.
- 4) Explain the position of double bond and primary hydroxyl group in phytol.
- 5) Give the synthesis of Phytol.

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Department of chemistry

Internal Examination-IInd2018

Subject: - Medicinal chemistry (CHE-420)

Class—M. Sc. SEMESTER-IVth

Maximum marks -20

Time -1Hr.

Q1) MCQ

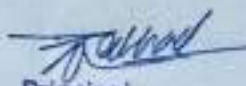
(05)

- 1) Which drugs are used on the treatment on CHIKAN GUNIA?
a) Naproxen b) Diazepam c) Ampiciline d) Procaine
- 2) Chloramphenicol drug are the example of,
a) Antiseptic b) Antibiotic c) Anti-Inflame try d) All of these
- 3) Most of the common side effects of maximum drugs,
a) Blurred vision b) High B.P. c) Nausea d) Chest pain
- 4) The examples of Local anesthetic drugs are,
a) Lidocaine b) procaine c) ketamine d) Both b & c
- 5) CNS Stand for,
a) Central Nervous System b) Central nano system c) Central Nervous supports d) None of these.

Q2) Solve any Five.

(15)

- 1) What is the difference between Drugs and Medicine?
- 2) What is the use of Antibiotics drugs?
- 3) Give the synthesis of Chlorpromazine.
- 4) Synthesis of Captopril with uses.
- 5) Draw the structure of Sometiadil fumarate with side effects.
- 6) Give the synthesis of d-sotalol.


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Department of chemistry

Internal Examination-Ist2018

Subject: - Inorganic chemistry (CHE-206)

Class—M. Sc. SEMESTER-IInd

Maximum marks -30

Time -1Hr.

Q.1 Solve the MCQ'S

05

1. Which of the following metal carbonyl complex does not follow EAN rule?

- a) $\text{Cr}(\text{CO})_6$ b) $\text{Mo}(\text{CO})_6$ c) $\text{W}(\text{CO})_6$ d) $\text{V}(\text{CO})_6$

2. Polynuclear carbonyls contains metal atoms more than—

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

3. In $\text{Ni}(\text{CO})_4$ hybridization is----

- a) d^2sp^3 b) $sp^3 d^2$ c) sp^3 d) none

4. Structure of $\text{Ni}(\text{CO})_4$ is—

- a) Trigonal bipyramidal b) Square pyramidal c) Tetrahedral d) none.

5. In $\text{Mn}_2(\text{CO})_{10}$ hybridization is----

- a) d^2sp^3 b) $sp^3 d^2$ c) sp^3 d) none.

Q.2 Explain the 18 electron rule with example.

05

Q.3 Explain the structure of $\text{Cr}(\text{CO})_6$.

05

Q.4 Explain the structure of $\text{Mn}_2(\text{CO})_{10}$.

05


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Department of chemistry

Internal Examination-IInd2018

Subject: - Heterocyclic chemistry (CHE-418)

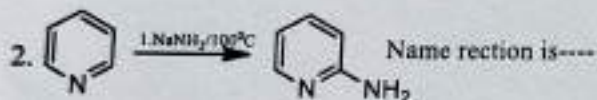
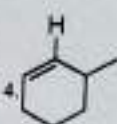
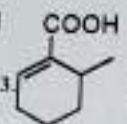
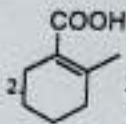
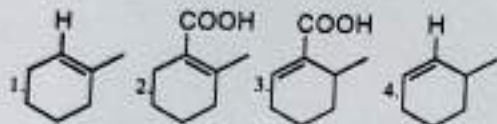
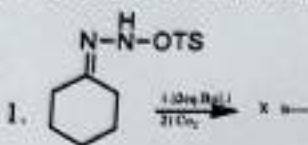
Class—M. Sc. SEMESTER-IVth

Maximum marks -20

Time -1Hr.

Q.1 Select the correct alternatives.

(05)

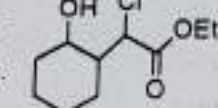
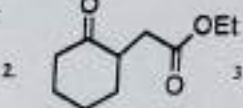
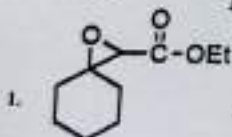
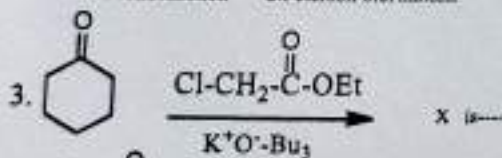


1. Darzen condensation

2. Peterson olefination

3. Mannich reaction

4. Chichibabin reaction

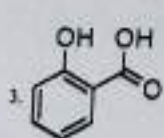
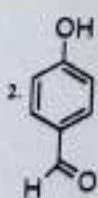
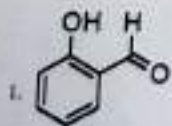


4. None

4. Which of the intermediate is for during Arnt Eistert reaction.

1. Carbene 2. Nitrene 3. Carbocation 4. Carbanion

5. The product in Reimer Tleman reaction



4. None

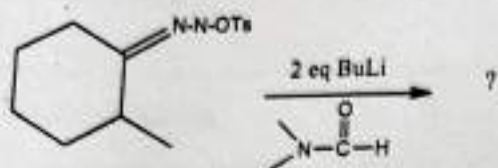
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Q.2 Write a short note on following.

(10)

1. Gabriel synthesis.
2. Julia-lythgo olefination.

Q.3 Predict the product with mechanism.



(05)

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Department of chemistry

Internal Examination-11th2018

Subject - Inorganic chemistry (CHE-204)
Maximum marks -20

Class—M. Sc. SEMESTER-I-IInd

Time -1hr.

Q.1 Solve the following (10)

- Determine the term symbol for a) d^1 b) d^4 2. Write the total term symbol for d^2-d^9 .
- Calculate the microstate of d^7 and d^9 configuration.

Q.2 Solve any two (10)

- Calculate the microstate of $t_2g^3 e_g^2$ configuration. 2. Write a note on Hund's rule.
- Determine the term symbol for $S^1 P^1$ configuration


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Department of chemistry

Internal Examination-1st2018

Subject: - Heterocyclic chemistry (CHE-418)

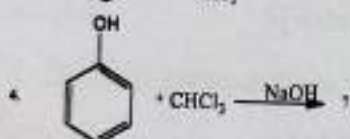
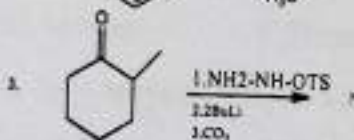
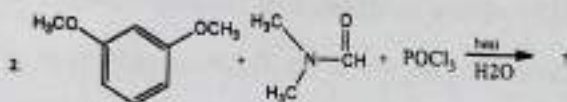
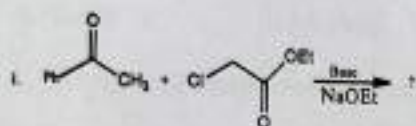
Class—M. Sc. SEMESTER-IVth

Maximum marks -20

Time -1Hr.

Q.1 Predict the product with mechanism (any three)

(12)

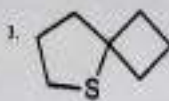
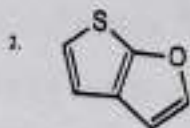
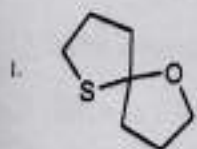



Q.2 Write a note on Mannich reaction.

(04)

Q.3 Give the systematic nomenclature for the following compounds (any two)

(04)




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Department of chemistry

Internal Examination-Ist 2018

Subject: - Bio-organic chemistry (CHE-315)

Maximum Marks 20

Class—M. Sc. SEMESTER-III

Time -1Hr.

Q.1 Select the appropriate answer

(05)

1. The term enzyme first introduced by

- a) Kunhe b) Michael c) C.Fiske d) K.Lohman

2. The enzyme transferases is used for

- a) Decarboxylation b) Transfer of group c) Hydrolytic cleavage d) Isomerization

3. In co-enzyme NAD, the active part that involve in reaction is

- a) Adenine b) Phosphate c) Nicotinamide d) Ribose

4. In co-enzyme FAD, the active part that involve in reaction is

- a) ADP b) Riboflavin c) Ribitol d) Adenine

5. Thiamine pyrophosphate is precursor of

- A) VitB1 b) VitB6 c) VitB2 d) ADP

Q.2 Solve any *TWO* from following.

(10)

a) What is enzyme? Give their classification.

b) Write a short note on competitive and non-competitive


c) Write a short note on pyridoxal phosphate.

Q.3 Solve any *ONE* from following.

(05)

a) Write a mechanism of enzyme action and factor responsible for enzyme specificity.

b) What is FAD write a brief history of FAD?


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Internal Examination-IInd2017

Subject: - Organic synthesis (CHE-314)

Maximum Marks:20

Class—M. Sc. SEMESTER-III

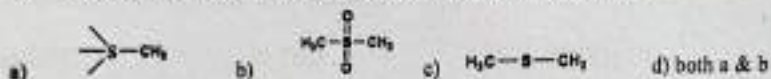
Time -1Hr.

Q1) Select the correct from the following prepared Oxime by the reaction of

How will you

- a) aldehyde + Amine c) keto + amine
 b) aldehyde + hydroxyl amine d) acid + hydroxyl amine

1) Which of the following is the examples of stable sulphonylides.....



b) Which of the following alkene is the stable product of phosphorous ylide.....

- a) cis alkene b) trans alkene c) both a & b d) none of these

c) Which of the following reagent gives product of syn diols.....

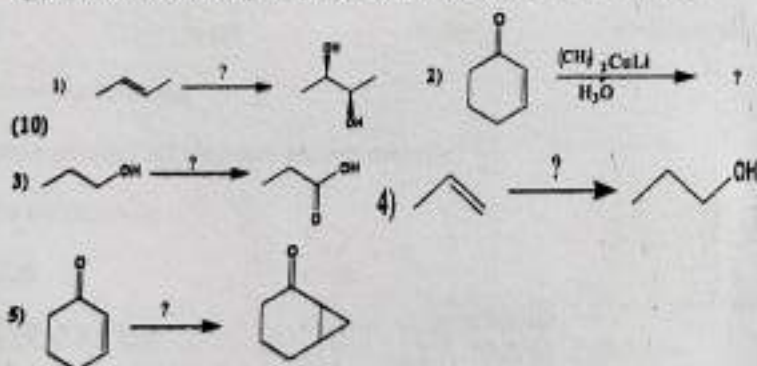
- a) OsO_4 b) $KMnO_4$ c) $NaIO_4$ d) All of these

d) Alkyl or Aryl cyanide get converted in to aldehyde by using.....

- a) DIBAL-H b) K-Selectride c) Diborane d) Birch reduction

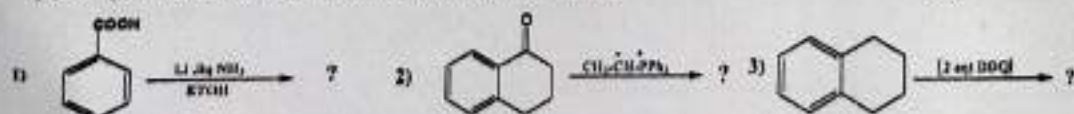
Q2) Write the suitable reagent / product of the following. _____

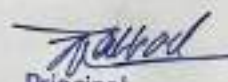
(5)



Q3) Complete the following transformation with the mechanism.

(10)




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Internal Examination-Ist 2017

Subject:- Structure elucidation (CHE-313)

class—M. Sc. SEMESTER-III

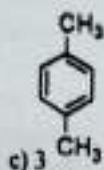
Maximum Marks-20

Time -1Hr.

Q.1 Select the appropriate answer

(05)

1. The numbers of H¹NMR signal in



a) 1

b) 2

c) 3

d) 4

2. Standard reference used in H¹NMR is

a) DDQ

b) TMS

c) DCC

d) CDCl₃

3. The number of unsaturation (D.B.E) in H₂C₄O

a) 4

b) 5

c) 3

d) 2

4. correct equation for τ is —

a) $\tau=10-\delta$

b) $\tau=20-\delta$

c) $\tau=15-\delta$

d) $\tau=5-\delta$

5. The value measured in

a) ppm

b) ppt

c) ppb

d) none of the these

Q.2 Solve the following

(15)

1. Explain spin-spin splitting with suitable example.

2. Solve the following

a) C₂H₆O

b)

1(H) (s) -2.8 δ ppm

2(H) (q) -3.8 δ ppm

3(H) (t) -1.09 δ ppm

b) C₆H₁₂O

2(H) (q) -1.08 δ ppm

3(H) (t) -0.9 δ ppm

5(H) (s) -7.21 δ ppm

3. Explain anisotropic effect with example.



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Internal Examination-IInd2017

Subject - Structure elucidation (CHE-313)

Maximum Marks-20

Class—M. Sc. SEMESTER-III

Time -1Hr.

Q.1 Select the appropriate answer

(05)

1. The numbers of C^{13} NMR signal in



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

2. The highly intense peak in Mass Spectroscopy is--

- a) Molecular ion peak b) Base peak c) Blank peak d) ionized peak

3. The number of ESR signal in CH_3

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

4. The which of the following radiation used in ESR spectroscopy---

- a) γ -rad b) Microwave rad c) Cosmic ray rad d) Radio wave


5) Which of the following internal standard used in E.S.R spectroscopy

- a) DPPH b) TMS c) BARIUM SULFATE d) none of the these.

Q.2 Solve the following

(15)

- 1) Explain ENADIQUATE and INPET
- 2) Define a) Nitrogen rule b) Metastable ion peak c) Isotopic peak
- 3) Write a note on Retro Diels Alder reaction.
- 4) Explain the Mossbauer spectra of $[Mn(H_2O)_6]^{+2}$ complex.
- 5) What is isomeric shift? Explain with suitable example.


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Internal Examination-2022

Subject:- Natural Product (CHEO-419)
Class:- M. Sc. SEMESTER-IV

Maximum Marks : 20
Time:- 45 min.

- The parent name of isoprene is –
a) 2-methyl butane b) 3-methyl butane c) 2-methyl butanol d) 2-methyl butanone.
- Tetra cyclic terpenes contain---- ring their structure
a) 2 b) 3 c) 4 d) 5
- The cis form of citral is known as.
a) Geranial b) Neral c) Citral d) Geraniol
- The molecular formula of α -Terpineol is----
a) $C_{10}H_{18}O$ b) $C_{10}H_{20}O$ c) $C_{10}H_{20}O_2$ d) $C_{15}H_{25}O$
- In menthol oxygen is present in the form of functional group is-----
a) Aldehyde b) Ketone c) Alcohol d) Acid
- Which hetero atom Mostly present in the alkaloid.
a) Oxygen b) Sulfur c) Nitrogen d) None of these
- Which heterocyclic skeleton present in the Nicotine
a) Indole b) Quinoline c) Pyridine d) Oxane
- Molecular formula of the Citral is
a) $C_{10}H_{16}O$ b) $C_{10}H_{18}O$ c) $C_8H_{16}O$ d) $C_{10}H_{10}O$
- How many chiral center present in Menthol
a) 1 b) 2 c) 3 d) 4
- Which of the following common function group present in the alkaloid structure
a) Amine b) Carboxylic Acid c) Amide d) Ketone


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Internal Examination-Ist 2019

Subject: Spectroscopic methods(CHE-205)

Maximum Marks 20

Class—M. Sc. SEMESTER-II

Time -1Hr.

Q.1 Explain the following terms (any three)

(12)

- Fermi resonance
- Type of vibrations
- Chemical shift
- Factor affecting on IR absorption.

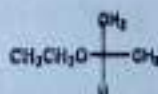
Q.2 Compare the C=O stretching absorption in the following molecules.

(02)

- CH₃CHO
- Ester.

Q.3 Calculate the no. of NMR signal in following compound.

(06)




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Internal Examination-Ist 2019

Subject: Spectroscopy (CHE-313)

Maximum Marks 20

Class—M. Sc. SEMESTER-III


Time -1Hr.

- 1) The distance between the centres of the peaks of doublet is called as.
a) spin-spin coupling b) spin constant c) coupling constant d) chemical shift
- 2) How many signal does alternate $(CH_3)_3CH_2CHO$ have in 1H NMR and ^{13}C NMR.
a) 5 1H signal and 6 ^{13}C signals b) 3 1H signal and 4 ^{13}C signals
c) 5 1H signal and 4 ^{13}C signals d) 3 1H signal and 6 ^{13}C signals
- 3) Which of the following compound contain one or more proton that could undergo proton exchange with proton.
a) $(CH_3)_2O$ b) CH_3Br c) $(CH_3)_3N$ d) CH_3OH
- 4) Vicinal coupling is
a) coupling between 1H nuclei in an alkane b) coupling between 1H nuclei attach to the same C
c) coupling between 1H nuclei attach to adjacent C d) coupling between 1H nuclei in an alkene
- 5) Which list below gives only spine active nuclei.
a) 1H ^{12}C ^{19}F b) 1H 2H ^{12}C c) 1H ^{13}C ^{19}F d) 2H ^{12}C ^{19}F

Q.No.2) Solve any three.

(15 marks)

- a) Write the detail note on spin-spin coupling.
- b) Write the application of 1H NMR spectroscopy.
- c) What is Molafferty Rearrangement.
- d) $C_5H_{10}O_2$ IR 1750 cm^{-1}
3.2 δ (s, 3H) 2.2 δ (t, 3H) 3.5 δ (q, 2H) 4.2 δ (s, 2H)
- e) A compound $C_6H_{12}O_6$ shows four signal.
1.1 δ (s, 6H) 2.1 δ (s, 3H) 2.6 δ (s, 2H) 3.9 δ (s, 1H)


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Internal Examination-IInd 2019

Subject - Retro synthesis (CHE-417)

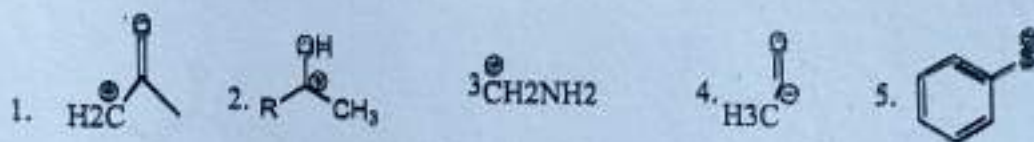
Maximum

Marks 20

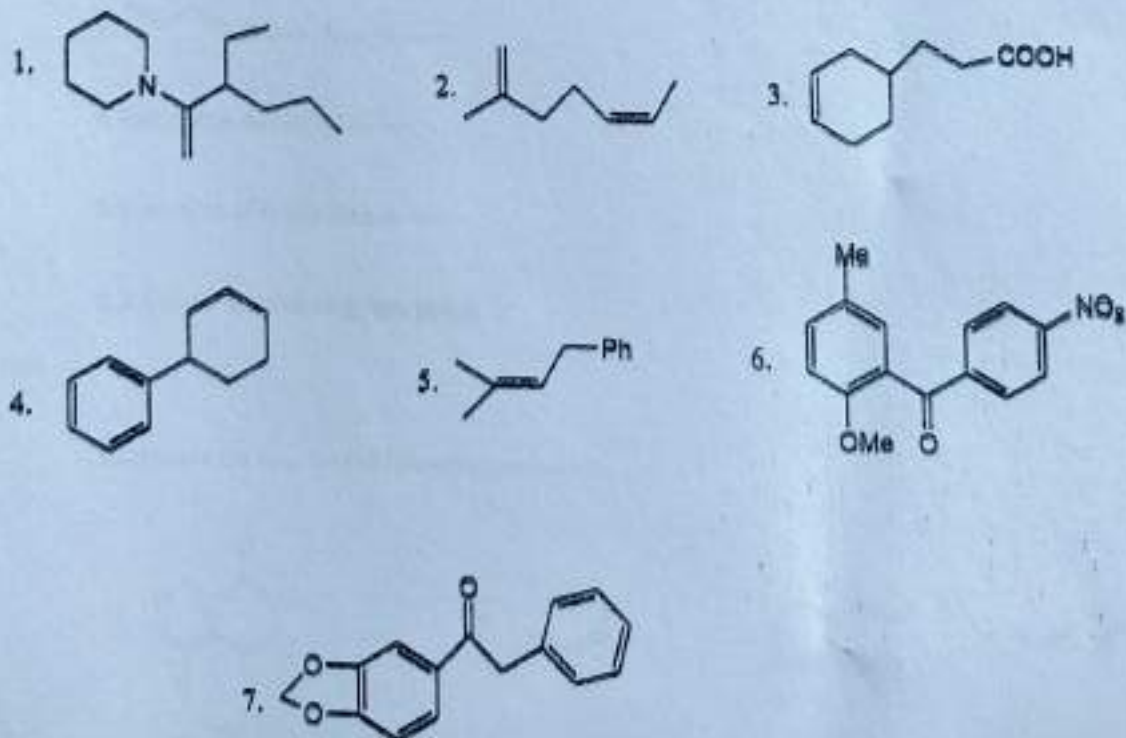
Class - M. Sc. SEMESTER-IV

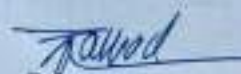
Time - 1 Hr.

Q.1 Write down the synthetic equivalent for following synthons. (05)



Q.2 Write down the retro synthetic analysis and synthesis for following target molecules (any 5) (15)




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Internal Examination- IInd 2019

Subject: Spectroscopic methods (CHE-205)
Maximum Marks 20

Class—M. Sc. SEMESTER-II

Time -1Hr.

Q.1 Fill in the blanks.

(05)

1. CC(=O)OC Compound gives -----H¹NMR signal/signals

2. The UV spectroscopy is useful for detection -----

3. C=CC=C Shows λ_{max} at-----.

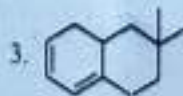
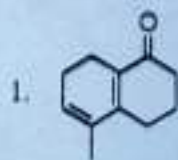
4. Red shift is also called-----.

5. Base value of simple diene is-----.

Q.2 Answer the following (any three)

(15)

1. Calculate the λ_{max} for the following compounds.




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Internal Examination-1st 2019

Subject - Retrosynthesis (CHE-417)

Marks 20

Maximum

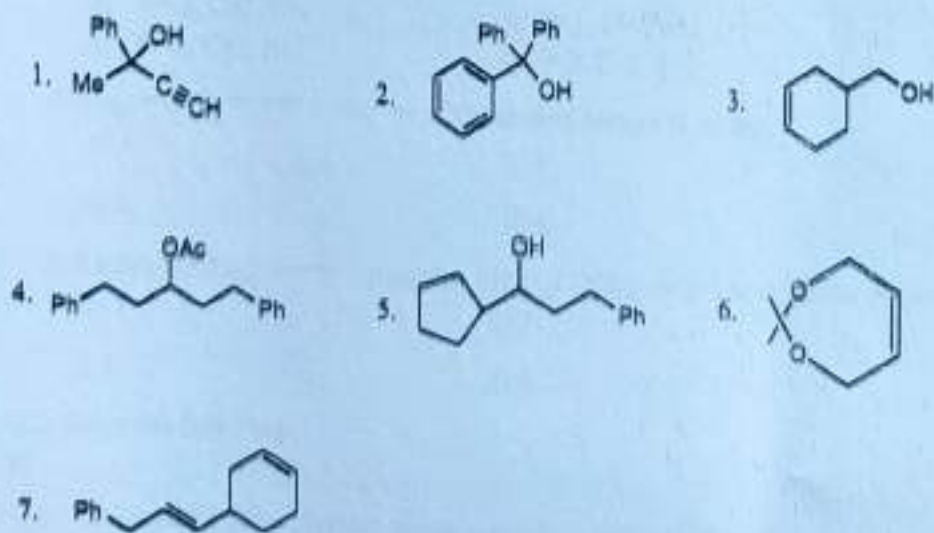
Class—M. Sc. SEMESTER-IV


Time -1Hr.

Q.1 Write down the synthetic equivalent for following synthons.
(05)



Q.2 Write down the retrosynthetic analysis and synthesis for following target molecules (any 5)
(15)




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Internal Examination-Ist 2019

Subject - Physical chemistry (CHE-104)

Class - M. Sc. SEMESTER-I

Time - 1 Hr.

Maximum Marks 20

Q.No.1) Solve The MCQ.

- 1) In Arrhenius equation $k = Ae^{-E/RT}$ represents.
a) Steric factor b) Probability factor c) Both a & b d) None of these
- 2) Transition state theory is also known as.
a) Lindemans Theory b) Activated Complex theory
c) Hinshel wood theory d) secondary salt effect
- 3) Reaction which complete in year are called as.
a) Fast reaction b) Moderate reaction c) slow reaction d) all of these
- 4) Rate of fast reaction can be determined by.
a) Temperature jumped method b) flash photolysis
c) Relaxation method d) all of the above
- 5) At low temperature equilibrium constant K follows.
a) Ist order kinetics b) IInd order kinetics c) IIIrd order kinetics d) Zero order kinetics

Q.No.2) Answer any three.

(15 marks)

- 1) Explain the secondary salt effect.
- 2) Write the weakness of simple collision theory.
- 3) Explain flash photolysis in details.
- 4) Explain Lindemans theory for activated molecules


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Internal Examination-Ist 2019

Subject - Photochemistry (CHE-316)


Class—M. Sc. SEMESTER-III

Time -1Hr.

Maximum Marks 20

Q.No.1) Solve the following.

- a) Write a note on Barton reaction.
- b) Write a note on Norrish type I.
- c) Write a note on Di-Pi methane rearrangement with the help of 1,4 Pentdiene.
- d) What is photo fries rearrangement explain with example.
- e) Write a note on Chemoluminescent reaction.
- f) Write a note on paterno Buchi reaction with example.
- h) Write a note on Norrish type II.


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Subject - Physical chemistry(CHE-208)

Maximum

Marks 20

Class—M. Sc. SEMESTER-II

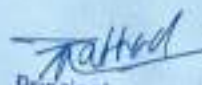
Time -1Hr.

Q.1 Answer the followings (any four)
(20)

- a) Derive the equation of energy of particle in one dimension box.
b) Calculate the change in energy when electron jumps from second to third energy state confined to 1-D

Box of width 1.5Å .

- c) Calculate the value of $[\chi, P_x] = ?$
d) Write the molecular term symbol for 1) N_2^+ 2) B_2
e) Derive the equation for rigid rotator.


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Subject - Organic Synthesis (CHE-314)

Class—M. Sc. SEMESTER-III

Time -1Hr.

Maximum Marks20

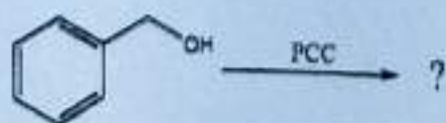
Q1) MCQ -----05

- 1) Which of the following is Jones reagent,
a) $\text{KMnO}_4 / \text{H}^+$ b) $\text{K}_2\text{Cr}_2\text{O}_7 / \text{H}^+$ c) CrO_3 d) $\text{CrO}_3 / \text{H}^+$
- 2) Oxidation of glycols, the suitable reagent is ,
a) KMnO_4 b) CrO_3 c) $\text{Zn-Hg} / \text{HCl}$ d) all of these
- 3) Which of the following is an example of oxime,
a) R-CH=NH b) R-CH=N-OH c) R-CH=O d) none of these
- 4) Which of the following is oxidizing agent is used for ozonolysis,
a) $\text{O}_3/\text{H}_2\text{O}$ b) $\text{O}_3, \text{Zn}/\text{H}_2\text{O}$ c) O_3 d) all of these
- 5) Oxidation of primary alcohol to carboxylic acid by using,
a) PCC b) PDC c) MnO_2 d) $\text{K}_2\text{Cr}_2\text{O}_7 / \text{H}^+$

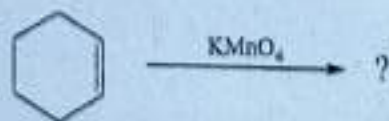
Q2) solve any five of the following -----15

- 1) Oxidation of Butan-2-one by using SeO_2
- 2) Give the reaction mechanism for Etard reaction.
- 3) Write note on Swern oxidation.

4)



5)




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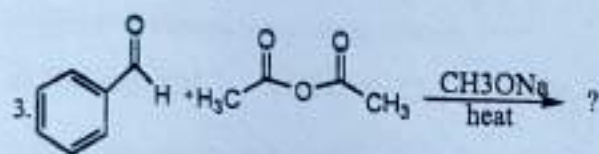
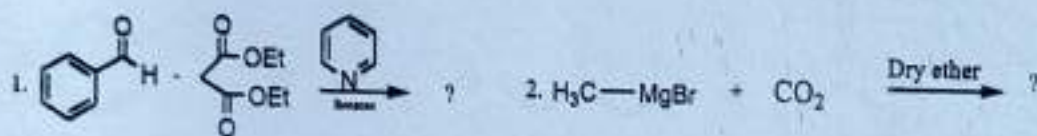
Subject - Organic chemistry (CHE-207)

Maximum Marks 20

Class - M. Sc. SEMESTER-II


Time - 1 Hr.

Q.1 Predict the product with mechanism. (any two)



Q.2 Write a note on following. (any three)

- 1) Wittig Reaction
- 2) Benzoin Condensation
- 3) Mannich Reaction
- 4) Claisen Condensation


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Subject - Organic chemistry (CHE-103)

Maximum Marks 20

Class—M. Sc. SEMESTER-I

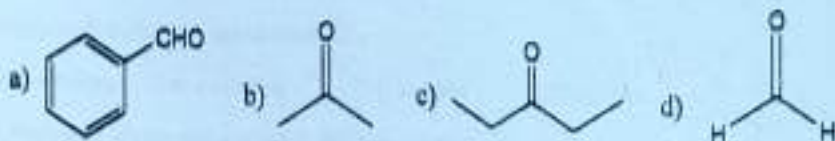
Time -1 Hr.

Q1) MCQ05

1) Which of the following having chiral carbon.

- a) $\text{CH}_3\text{-CH(OH)-CH}_3$ b) $\text{CH}_3\text{-CH}_2\text{-CH}_2\text{-Br}$ c) $\text{CH}_3\text{-CH(Br)-CH}_2\text{-CH}_3$ d) all of these

2) Which of the following having pro-chiral carbon.



3) Which of the following having example of allene.

- a) $\text{CH}_2\text{=CH-CH}_3$ b) $\text{CH}_2\text{=C=CH}_2$ c) $\text{CH}_2\text{=CH-CH=CH}_2$ d) all of these

4) Which of the following having example of trans alkene.



5) In R / S configuration 'S' stand for.

- a) S = Sinister b) S = Sectus c) S = Same d) S = none of these

Q2) Solve any five15

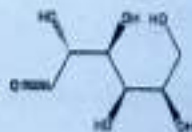
1) Write note on chiral and pro-chiral centre.

2) Define Enantiomers and Diastereomers with suitable examples.

3) What is the element of symmetry of NH_3 and H_2O .

4) Give the correct E / Z nomenclature of the following.

5) What is the R/S configuration for the following chiral carbon atom.




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Subject - Organic chemistry (CHE-207)

Maximum Marks: 20

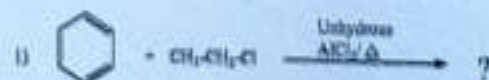
Class - M. Sc. SEMESTER-II

Time - 1 Hr.

Q1) Multiple choice questions ----- 15

- 1) Which of the following is an examples of strong electron withdrawing group .
a) -CH₃ b) -OH c) -NH₂ d) -NO₂
- 2) In electrophilic substitution reaction first step is .
a) Bond Breaking b) Bond Formation c) Slow Step d) Both b & c
- 3) Which of the following catalyst is used for chlorination reaction .
a) Anhydrous AlCl₃ b) BF₃ c) Fe/Bn d) -CH₃COOH
- 4) In Friedel craft alkylation substitute the group on benzene is .
a) CH₃-CO b) -Cl c) -CH₃ d) -OH
- 5) The nitrating mixture for nitration is .
a) 2 Conc. H₂SO₄ b) Conc. H₂SO₄ + Conc. HNO₃ c) 2 Conc. HNO₃ d) Both b & c


Q2) Solve any five of the followings. ----- 15



3) Give the example with mechanism for Halogenation reaction.



6) Give the mechanism for the Nitration reaction.


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Department of chemistry

Internal Examination- IInd 2019

Subject: Natural product (CHE-419)

Marks 20

Maximum

Class—M. Sc. SEMESTER-IV

Time -1Hr.

Q.1 Write the synthesis for the followings (any four)
(20)

1. Androsteron acid 2. Testosterone 3. Estrone 4. Progesterone 5. Bile


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Department of chemistry

Internal Examination-Ist 2019

Subject - Medicinal chemistry (CHE-420)

Maximum Marks 20

Class--M. Sc. SEMESTER-IV

Time -1Hr.

Q1) MCQ -----05

1) Which drugs are used on the treatment on CHIKAN GUNIA .

a) Naproxen b) Diazepam c) Ampicillin d) Procain

2) Chloramphenicol drug are the example of ,

a) Antileptic b) Antibiotic c) Anti-inflammatory d) All of these

3) Most of the common side effects of maximum drugs ,

a) Blurred vision b) High B.P. c) Nausea d) Chest pain

4) The examples of Local anesthetic drugs are ,

a) Lidocaine b) procaine c) ketamine d) Both b & c

5) CNS Stand for,

a) Central Nervous System b) Central nano system c) Central Nervous supports d) None of these.

Q2) Solve any Five -----

15


1) What is the use and side effects of Antibiotics drugs.

2) Give the synthesis of Chlorpromazine.

3) Synthesis of Captopril with uses.

4) Draw the structure of Sometiadil fumarate with side effects.

5) Give the synthesis of d-sotalol.


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Department of chemistry
Internal Examination-Ist 2019

Subject - Inorganic chemistry (CHE-102)

Class—M. Sc. SEMESTER-I

Time -1Hr.

Maximum Marks 20


Q.No.1) Solve the MCQ.

- 1) BF_3 is an example of----- type of geometry.
a) AB b) ABA c) AB_2 d) AB_3
- 2) Imaginary plane, center, point-- ----- of an molecule is deals with geometry of that molecule is also knows symmetry element.
a) Axis b) Diameter c) Radius d) Angle
- 3) H_2O molecule shows the -----axis of symmetry.
a) C_1 b) C_2 c) C_3 d) C_4
- 4) There are symmetry----- types of element.
a) One b) Tree c) Two d) Four
- 5) CO_2 is an example of -----type of geometry operation.
a) AB_5 b) AB_6 c) ABA d) AB_2

Q.No.2) Solve any five.

(15 marks)

- a) Define - Symmetry element and identity of symmetry element.
- b) Write any three example of the Axis of symmetry of any molecules showing operations.
- c) Define and explain Point group.
- d) What is mean by symmetry operations.
- e) H_2O molecules with symmetry operations.
- f) Explain any three symmetry elements.


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Department of chemistry

Internal Examination- IInd 2019

Subject - Medicinal chemistry (CHE-410)

Maximum Marks 20

Class—M. Sc. SEMESTER-IV

Time -1Hr.

Q1) Define the followings (any five).

- 1) LD₅₀ 2) ED₅₀ 3) Hard Drug 4) Soft Drug 5) Lead molecule 6) Agonist

Q2) Solve of the following (any five)

- 1) Drug Receptor mechanism. 2) Structure Activity Relationship (SAR) 3) Synthesis of Cis-platin
4) Write note on Diltiazem. 5) Give the structure of Ant diabetic drugs. 6) Give the synthesis of Ibuprofen.


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Department of chemistry

Internal Examination-IInd 2019

Subject: Inorganic chemistry (CHE-206)
Maximum Marks 20

Class—M. Sc. SEMESTER-II

Time -1Hr.

Q.No.1. Solve the following.
Each)

(10Mark for

- Calculate the Microstate for $d^1 - d^5$ System.
- Determine the term Symbol for $d^1 - d^5$ System


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Department of chemistry

Internal Examination-Ist 2019

Subject - Bio-organic chemistry (CHE-315)

Maximum Marks 20

Class—M. Sc. SEMESTER-III

Time -1Hr.

Q.1 Select the appropriate answer

(05)

1. The term enzyme first introduced by

- a) Kunhe b) Michael c) C.Fiske d) K.Lohman

2. The enzyme transferases is used for

- a) Decarboxylation b) Transfer of group c) Hydrolytic cleavage d) Isomerization

3) Carboxypeptidase having ----- metal ion for their activity.

- a) Cu b) Al c) Zn d) Mg

4) Lysozyme is the major constituents of cell of the ----


- a) Animal b) Bacteria c) Plant d) Human

5) A catalyst is defined as a substance that increase the -----of reaction

- A) Acceleration b) Product c) Temperature d) Velocity or rate

Q.2 Solve any *Three* from following. (15 marks)

- a) Write a note on Thiamine pyrophosphate.
b) Write a short note on coenzyme, cofactor, prosthetic group and apoenzyme.
c) Write a note on flavin(FMN,FAD,FADH₂).
d) What is chiral pool and chiral auxiliaries?
e) Write a note on crown ether..


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Department of chemistry

Internal Examination-Ist 2019

Subject - Hetero and asymmetric (CHE-418)

Maximum Marks 20

Class—M. Sc. SEMESTER-IV

Time -1 Hr.

Q.1 Solve the following MCQ'S

(05)

1. Which of the following intermediate form in Curtius rearrangement.

1) Aziridine 2) Carbene 3) Isoocynate 4) Free radical

2. Which of the following product form in Riemer Tiemann reaction.

1) Salicylic aldehyde 2) Benzoic acid 3) Cinnamic acid 4) Phenol

3. Intermediate form in Riemer Tiemann reaction is-

1) Carbene 2) Carbocation 3) Free radical 4) Carbanion

4. The intermediate form in Neber rearrangement is-

1) Aziridine 2) Carbene 3) Nitrene 4) Carbocation

5. The product form in Hoffmann rearrangement is-

1) Amide 2) Amine 3) Aldehyde 4) Cinnamic acid

Q.2 Write a note (any three)


(15)

1. Shapiro reaction

2. Bamford Stevens reaction

3) Curtius rearrangement

4) Schemidih Rearrangement.


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Subject: Inorganic chemistry (CHE-100)

Maximum Marks

Class—M. Sc. SEMESTER-II

Time—1 Hr.

Q.1 Attempt the following (05)

- 1) Define metal nitrosyls.
- 2) Define metal carbonyls.
- 3) What are the examples of acid ligands.
- 4) What is σ bonding.
- 5) Define Diamagnetism

Q.2 Attempt the following (05)

- 1) State and explain EAN rule for metal carbonyls.
- 2) State and explain 18 electron rule.

Q.3 Attempt the following (10)

- 1) Explain why $[V(CO)_6]$ is paramagnetic?
- 2) Explain two methods of preparation and properties of $[Fe(CO)_5]$.


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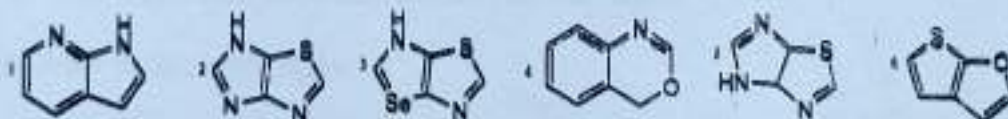
Subject: - Hetero and asymmetric (CHE-418)

Maximum Marks 20

Class—M. Sc. SEMESTER-IV

Time -1Hr.


Q.1 Give the IUPAC nomenclature for the following heterocyclic compounds.



Q.2 What are the heterocyclic compound? Give the classification of heterocyclic compounds.

Q.3 Predict the products for the followings.




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Department of chemistry
Internal Examination-Ist 2019

Subject - Analytical chemistry (CHE-101)

Class—M. Sc. SEMESTER-I

Time -1hr.


Maximum Marks 20

Q.No.1) Solve the following. (any five)

20 marks

- a) Write a note on Solvent and solid phase extraction.
- b) What is distillation explain in detail.
- c) Write a note on theory of Phase contact method.
- d) What is partition coefficient and distribution ration.
- e) What is chromatography.
- f) What is counter current distribution.
- g) Write a note on repeated equilibration.

5


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NAME :- MORELLU RUCHITA VINOD

ROLL NO :- 57

SEAT NO :- NAF651236

CLASS :- BSc TY

SUBJECT :- FISHERY SCIENCE [PAPER XX & XXIV]

COLLEGE NAME :- MILIND COLLEGE OF SCIENCE

Q1- Identify and describe the spot.

i] One hybrid fish

ii] One Microorganism

i] One hybrid fish [Rohu-Catla hybrid]

* Characteristics :- It is inter-genetic diploid hybrid which is viable fertile

- The character generally intermediate between those of two parents i.e. Catla-Catla, Labo Rohita
- It has smallest head than the head of catla but price fish which is more abundant than in either catla or Rohu.
- The Catla Rohu & Rohu-Catla hybrid have higher surviving value 88 compare to Rohu [52%] & Catla [96%]
- This is mainly phytophages in food habit but they have adaptable toward artificial feed.
- The hybrid grows fastest than Rohu.
- Rohu-Catla hybrid has shown more capability with Rohu than Catla.

ii) One Micro-organism [E. Coli]

- Character :- Escherichia coli, also known as E. coli.
- It is a gram negative, facultative anaerobic, rod-shaped coliform bacterium of the Escherichia.
- It is commonly found in the lower intestine of warm blooded organisms.
- Most E. coli strains are harmless, but some serotypes can cause serious food poisoning in their hosts, and are occasionally responsible for food contamination.
- Hence its contamination in any food product indicates the fecal contamination and general breakdown in hygiene and sanitation.
- It is also called fecal Indicator Bacteria.
- It is gram negative, rod shaped non-spore forming bacterium.
- It is a coccobacillus and sluggishly motile.
- The source of contamination of natural water by direct contact or by indirect contact or by mixing up with domestic sewage.

Q2- Evaluate the given fish sample for polyploidy using erythrocyte measurement method 2.0.

Aim : Total plate count fish

A] - Counting of RBC cell [Red Blood Cell]

principle :- The number of red cell in the blood are too many and the size of cell is too small. It is therefore very difficult to count the cell even under microscope.

This difficulty is overcome by diluting the blood with suitable fluid to known degree.

Requirement :- Haemocytometer, microscope needle etc
Haem. diluting fluid

NaCl - 1g m

Na₂SO₄ - 5gm

HgCl₂ - 0.5gm

Distilled H₂O - 200 ml

* The mercuric chloride act as a corrosive substance & fixes the RBC present in the blood. The another ingredients acts ~~as~~ automatically.

So that the RBC may not get to haemolysis. It also serves to dilute the blood.

Calculation:- Let 'N' number of cell counted in 80 small square. the number of cells in one small square is $N/80$

- Area of one small square is $1/400$ Sq mm
- Depth of diluted blood is $1/10$ mm
- Volume of one small square is $1/400 \times 1/10 = 1/4000$ mm

• The cell in 1 cm³ is $\frac{N}{80} \times 4000$

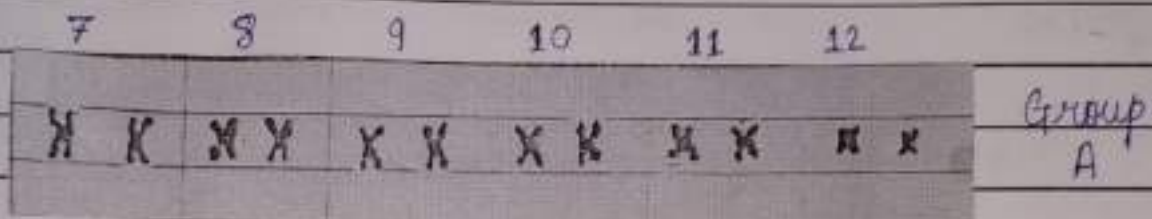
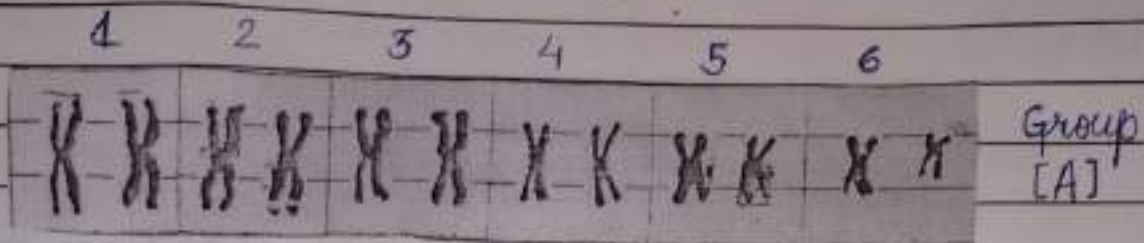
- The blood was originally diluted 1 in 200 number of red cells per cm³ is $\frac{N \times 4000 \times 200}{80}$

That is $N \times 10,000$

Result :- 1 cm³ blood contain R.B.C

Q3- Chromosomes karyotyping of the given *Chara punctatus*

Aim :- Chromosomes karyotyping of *Chara punctatus*



← 12 pair metacentric chromosome →



← 4 pairs submetacentric chromosome →

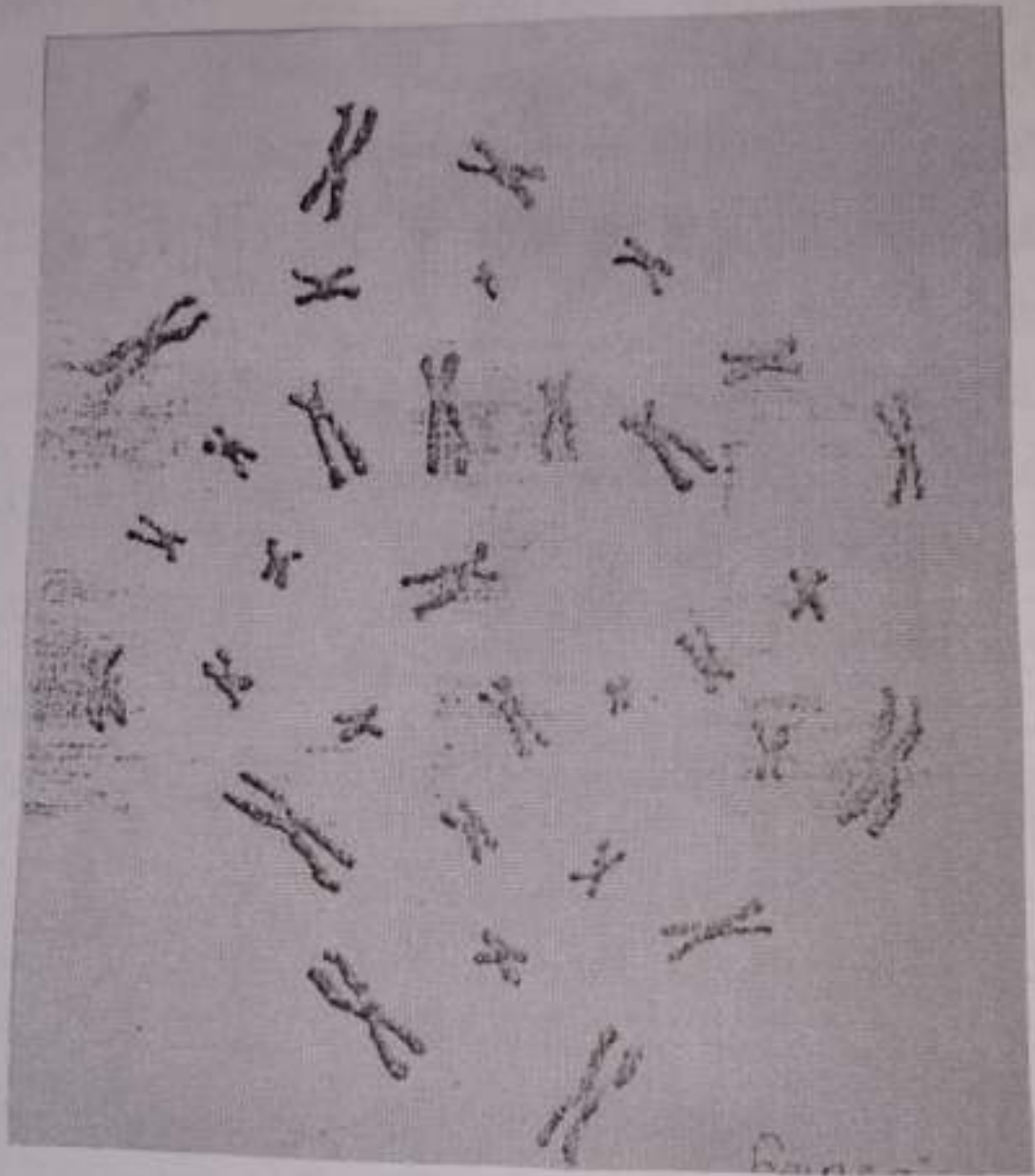
Result :- Karyotype of *Chara punctatus*

Total no of $2n$ chromosome = 32

Metacentric [group A] = 24 [12 pairs]

Submetacentric [group B] = 8 [4 pairs]

No. Heteromorphic chromosome in either sex.



Exercise - 2 [Case-1]
Channa punctatus
Chromosome Analysis

Q4- Identify and comment on the given gamet

Aim:- Collection of gametes from fresh water fishes with observation

For identification of gamete certain parameters are very important These are

- i] Time of collection
- ii] Place of collection
- iii] Diameter of egg
- iv] Colour of egg
- v] Shape of egg
- vi] Size pre, vitelline stage
- vii] Distraction of nature of vitell droplets

Procedure:- For a better examination of embryonic stages in the egg the eggs are treated with mixture of glycinol acetic acid [3.5 ml] and [0.7%] NaCl this make the cell transparent and embryo appearing white and colour.

- For preservation of egg they are put in 10% of formaline containing glycinol acetic acid and hydrogen para oxide 2.5% each.
- Another preservation of eggs suggested by Simpson is [1951] that is "glycolism" fluid should be used.

| SR. NO. | NATURE OF EGGS | DIAMETER | SHAPE | VOLUME | SPECIES |
|---------|----------------|--------------------------|----------------------------------|-----------------------------------------|----------------------------------------------------------------------------|
| 1. | Non-floating | 6.3 to 6.5 | Round | yolk lighted | <i>Catla catla</i> |
| | Non-adhesive | 5.5 5.0 3.4 4.5 | Round Round Round Round | brownish reddish bluish bluish | fresh herring Labeo rohita -11- <i>Colasoma</i> -11- <i>genus</i> |
| 2. | Adhesive | 1.3 to 1.5 | oval | greenish | <i>Clarias</i> <i>bacterius</i> |
| a] | Non-filament | 1.2 to 1.5 | Round | yellowish | <i>wallogtze</i> |
| b] | Floating | 1.0 1.25-1.35 0.7 | Round Round Round | golden amber amber Transparent | <i>Channa</i> <i>punctatus</i> <i>trachis</i> <i>strabus.</i> |

Result:- The gamete of the given fish is Catla - catla

* Gilson's fluid

- i] 60% alcohol - 100 ml
- ii] Distil water - 880 ml
- iii] 30% Nitric acid 15 ml
- iv] Glacial acetic acid 18 ml
- v] Mercuric Chloride 20 gm

* These with mixture will not only presence are egg but also health to break down to ovarian tissue so liberated eggs

Result :- The gamet of the given fish is
catla - Catla

NAME : Satdive Pallavi Nanasaheb

SEAT NO : NAF651314

ROLL NO : 58

SUBJECT : FISHERY SCIENCE [XX & XXIV]

CLASS : B.Sc TY

SUBJECT : Fishery Science Practical Examination (2020-2021)

Q. Identify & describe the spot.

i) E. coli [ONE MICROORGANISM]

→ i) The given identified spot is E. coli.

ii E. coli also known as Escherichia coli.

iii It is a Gram-negative, facultative anaerobic, rod-shaped bacteria.

iv This bacteria is found in the lower intestine of the warm-blooded organism, belonging to the family called as Enterobacteriaceae.

v E. coli is a chemoheterotroph, whose chemically defined medium must include a source of carbon & energy.

vi Under some favorable conditions, it takes as little as 20 minutes to reproduce.

vii E. coli is a popular expression platform for the production of recombinant proteins used in the therapeutics.

viii E. coli, constitutes about 0.1% of gut microbiota & fecal-oral transmission.

ix It can survive for many days & can grow outside a host.

x It is the most widely studied PROKARYOTIC model organism.

2) Rohu-Catla hybrid [HYBRID FISH]

- i) The given identified spot is Rohu-Catla hybrid.
- ii) It is inter-genetic diploid hybrid which is viable fertile.
- iii) The characters generally interbreed between those of the two parents i.e either with Catla-Catla or Labo-ekita.
- iv) This hybrid grows faster as that of other.
- v) It has the smallest head than the head of Catla but pure fish which is more abundant than in either Catla-Rohu.
- vi) The Rohu-Catla hybrid has shown more capability with Rohu than that of Catla.
- vii) The Catla-Rohu & the Rohu-Catla hybrid has the higher dressing value 88%, compared to that of Rohu (i.e 52%) & Catla (i.e 98%).
- viii) Rohu-Catla hybrid is basically produced by the crossing of the female Catla with the male Rohu.
- ix) The contribution of the Rohu-Catla hybrid was nearly 14.42%.
- x) The occurrence of the Catla-Rohu hybrid has been reported from the Adhartal lake located in Madhya Pradesh.

Q.2 Evaluate the given fish sample for polyploidy by using the erythrocyte measurement method.

⇒ AIM : To count the total plate count of fish.

COUNTING OF RBC cell (RED BLOOD CELLS / CORPUSCLES)

• PRINCIPLE : The number of red cells i.e. the erythrocytes in the blood are too many. The size of the cell is too small. It is therefore very difficult to count the cell number even under the microscope. This is type of difficulty which comes by diluting the blood [with the suitable fluid to known degree]

• REQUIREMENT : Haemocytometer, microscope, needle, syring etc.

Haem's diluting fluid.

NaCl - 1 gm

Na₂SO₄ - 5 gm

MgCl₂ - 0.5 gm

Distilled H₂O - 200 ml.

The mercury chloride acts as a coagulative substance that fixes the R.B.C present in the blood.

The another ingredient acts automatically.

So that the RBC may not be subjected to HAEMOLYSIS. It also serves to dilute the blood.

• CALCULATION :-

• Let 'N' be the number of cells that are counted in 80 small squares.

• The number of cells in one small square is $N/80$.

• Area of one small square is $1/400$ Sq. mm

• Depth of the diluted blood is $1/10$ mm

• The volume of one small square is

$$1/400 \times 1/10 = 1/4000 \text{ mm.}$$

• The cell in 1 cmm is $\frac{N}{80} \times 4000$

• The blood was originally diluted 1 in 200 number of red cells per cmm is

$$= \frac{N \times 4000 \times 200}{80}$$

$$= \frac{N \times 800,000}{80}$$

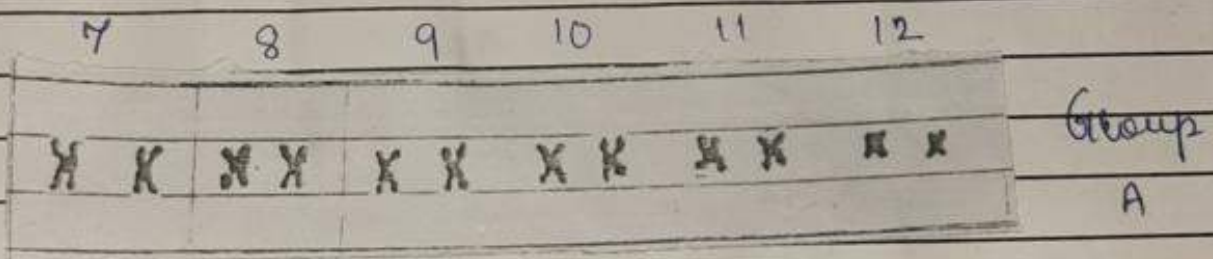
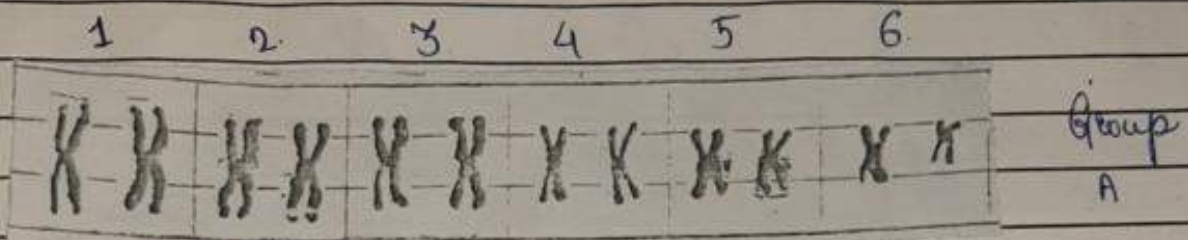
i.e. $N \times 10,000$

• ∴ RESULT : 1 cmm blood contains RBC.

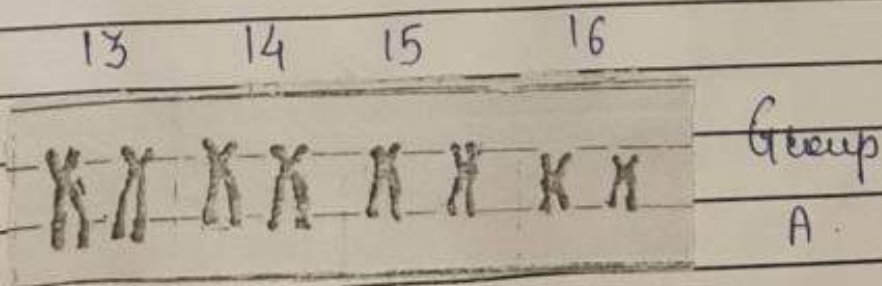
Q. 3 Chromosome karyotyping of the given species.
CHANNA PUNCTATUS.

• KARYOTYPE OF CHANNA PUNCTATUS.

• Fish chromosome analysis.



← 12 pairs of metacentric chromosomes →



← four pairs of sub-metacentric chromosomes →



CHANNA PUNCTATUS.

Exercise - 2 [CASE 1]
(Chromosome analysis)

(7)

• RESULT : The Karyotype of CHANNA PUNCTATUS is the total no. of $2n$ chromosomes = 32

The metacentric (group A) = 24 chromosomes (12 pairs)

The Sub-metacentric (group B) = 8 chromosomes (4 pairs)

Q.4 Identify & comment on the given gamete

- AIM: To collect the gametes from the fresh water fishes with observation.
- For the identification of gametes, certain types of parameters are very important. They are as follows.
 - i) The time of collection
 - ii) Place of collection
 - iii) Diameter of egg.
 - iv) Colour of egg.
 - v) Shape of egg.
 - vi) Size of perivitelline stage
 - vii) Distraction of nature of oil droplets.
- PROCEDURE: For a better examination of the embryonic stages in the egg, the eggs are treated with the mixture of Glycerol acetic acid [3.5 ml] & [0.7 %] of NaCl. This makes the cell transparent & embryos appear.
- For the preservation of egg, they are kept in 10% of formaline containing the Glycerol acetic acid & hydrogen peroxide [H_2O_2] 25% each.
- Another type of the preservation of eggs that is suggested by Simpson is that of GILSON'S fluid should be used.

* OBSERVATION TABLE :-

| Sr. No | NATURE OF EGGS | DIAMETER | SHAPE | VOLUME | SPECIES |
|-----------------|----------------|------------|--------------|-------------------|---------------|
| 1. | Non-floating | 6.3 to 6.5 | Round | Yolk lighted | Catla - Catla |
| | Non-adhesive | 5.5 | Round | beemish | Fresh hmary. |
| | | 5.0 | Round | redish | L. Rohita |
| | | 3.4 | Round | bluish | -11- Calbasu |
| | | 4.5 | Round. | blueish | -11- genus |
| 2.) Adhesive | | | | | |
| a.) Non-flament | 1.3 - 1.5 | oval | Greenish | Clarius batrachus | |
| | 1.2 + 1.5 | Round | Yellowish | Wallage attu | |
| b.) Floating | 1.0 | Round | Golden amber | C. punctatus | |
| | 1.25 - 1.35 | Round | amber | C. Kochis | |
| | 0.7 | Round | Transparent | Anabus | |

* RESULT : The gamet of the given identified fish is of CATLA - CATLA

• GILSON'S FLUID

- i) 60% alcohol - 100 ml
- ii) Distilled water - 800 ml
- iii) 80% of Nitric acid - 15 ml
- iv) Glycic acetic acid - 18 ml
- v) Mercuric chloride - 20 gm.

These mixtures will not only show the presence of eggs but helps to break it down to the ovarium tissue to liberated eggs.

• RESULT : The gamet of the given fish is
CATLA - CATLA