

# Anjuman Islam Janjira Degree College of Science

Lokmanya Tilak Road, Murud-Janjira dist. Raigad. Maharashtra 402401

## Academic calendar -2024-25

### Teaching Plan for Semester-I

| Course                            | F.Y.B.Sc. Zoology, (General Science)   |   | Vertical<br>1 |                   |
|-----------------------------------|--|---|---------------|-------------------|
| Course Code                       | MJP1   |   |               |                   |
| Title                             | MJ1: Life Processes  |   |               |                   |
| Credits                           | 02 Credits (30 Lectures)   |   |               |                   |
| Name of the Faculty               | Javidkhan VahabKhan Maniyar  |   |               |                   |
| Month                             | Date   | Topic   | Lectures      | Lecture per Month |
| <b>Module 1: Life Processes-I</b> |  |   |               |                   |
| July                              | 7/3/2024   | <b>1.1 Movement and locomotion</b>  |               | 8                 |
|                                   | 7/9/2024   | 1.1.1: Amoeboid movement, tube feet, flagellum  |               |                   |
|                                   | 7/10/2024  | 1.1.2: Ultra-structure of cilia and ciliary movements   |               |                   |
|                                   | 7/16/2024  | 1.1.3: Action of muscles (Role of muscles in movement)  |               |                   |
|                                   |  | <b>1.2 Nutrition</b>  |               |                   |
|                                   | 7/23/2024  | 1.2.1 Types of nutrition: Autotrophic and Heterotrophic.  |               |                   |
|                                   |  | <b>1.2.2. Apparatus for nutrition:</b>  |               |                   |
|                                   | 7/24/2024  | 1.2.2.1 Animals without alimentary canal, ex. Amoeba  |               |                   |
|                                   | 7/30/2024  | 1.2.2.2. Animals with incomplete alimentary canal, ex. Hydra,                                       |               |                   |
| 7/31/2024                         | 1.2.2.3. Animals with complete alimentary canal, ex. ruminants and non-ruminants |   |               |                   |
| August                            | 8/6/2024   | 1.2.3 Brief account of physiology of digestion in vertebrates and symbiotic digestion in Ruminants. |               | 8                 |
|                                   |  | <b>1.3 Respiration</b>  |               |                   |
|                                   | 8/7/2024   | 1.3.1 Aerobic and anaerobic respiration   |               |                   |
|                                   |  | <b>1.3.2 Types of respiratory surfaces:</b>   |               |                   |
|                                   | 8/7/2024   | 1.3.2.1 General body surface: Cell membrane - ex. Amoeba,   |               |                   |
|                                   | 8/13/2024  | 1.3.2.2 Skin - ex. Earthworm and Frog   |               |                   |
|                                   | 8/13/2024  | 1.3.2.3 Trachea and spiracles,  |               |                   |
|                                   | 8/14/2024  | 1.3.2.4 Gills of fish,  |               |                   |
|                                   | 8/20/2024  | 1.3.2.5 Accessory respiratory organ in Fish,  |               |                   |
|                                   | 8/20/2024  | 1.3.2.6 Lungs of Human.   |               |                   |
|                                   |  | <b>1.4 Circulation</b>  |               |                   |
|                                   | 8/21/2024  | 1.4.1 Types of circulating fluids:  |               |                   |
|                                   | 8/21/2024  | 1.4.1.1 Water,  |               |                   |
|                                   | 8/21/2024  | 1.4.1.2 Coelomic fluid,   |               |                   |
|                                   | 8/21/2024  | 1.4.1.3 Lymph and   |               |                   |
|                                   | 8/21/2024  | 1.4.1.4 Blood   |               |                   |
|                                   | <b>1.4.2 Types of circulation</b>  |   |               |                   |
| 8/27/2024                         | 1.4.2.1 Protoplasmic streaming,  |   |               |                   |
| 8/27/2024                         | 1.4.2.2 open and closed circulation,   |   |               |                   |
| 8/27/2024                         | 1.4.2.3 single and double circulation.   |   |               |                   |

|            |                      |   |              |           |
|------------|----------------------|---|--------------|-----------|
|            |                      | <b>1.4.3 Hearts Types,</b>  |              |           |
|            | 8/28/2024            | 1.4.3.1 Heart in Daphnia,   |              |           |
|            | 8/28/2024            | 1.4.3.2 Heart of Cockroach  |              |           |
|            | 8/28/2024            | 1.4.3.3 Heart in chordates (2, 3 and 4 chambered heart)                                   |              |           |
|            |                      | <b>Module 2: Life Processes-II</b>  |              |           |
| September  | 9/3/2024             | <b>2.1 Excretion and osmoregulation</b>   |              | 6         |
|            | 9/4/2024             | 2.1.1 Concepts of osmoregulation and excretion.   |              |           |
|            | 9/17/2024            | 2.1.2 Categorization of animals on the basis of principle nitrogenous excretory products. |              |           |
|            |                      | <b>2.2 Control and Coordination</b>   |              |           |
|            | 9/18/2024            | 2.2.1 Irritability in Paramoecium   |              |           |
|            | 9/18/2024            | 2.2.2 Structure of neuron,  |              |           |
|            | 9/24/2024            | 2.2.3 Conduction of nerve impulse   |              |           |
|            | 9/24/2024            | 2.2.3.1 Resting potential,  |              |           |
|            | 9/25/2024            | 2.2.3.2 Action potential  |              |           |
|            |                      | <b>2.2.3.3 Refractory period.</b>   |              |           |
|            |                      | <b>2.2.4 Endocrine regulation:</b>  |              |           |
| October    | 10/1/2024            | 2.2.4.1 Hormones as chemical messengers,  |              | 7         |
|            | 10/1/2024            | 2.2.4.2 Feedback mechanisms.  |              |           |
|            |                      | <b>2.3 Reproduction</b>   |              |           |
|            |                      | <b>2.3.1 Asexual Reproduction:</b>  |              |           |
|            | 10/8/2024            | 2.3.1.1 Binary fission in Paramoecium,  |              |           |
|            | 10/8/2024            | 2.3.1.2. Gemmule in Sponges,  |              |           |
|            | 10/8/2024            | 2.3.1.3. Budding in Hydra,  |              |           |
|            | 10/8/2024            | 2.3.1.4. Regeneration in planaria,  |              |           |
|            |                      | <b>2.3.2 Sexual mode of reproduction</b>  |              |           |
|            | 10/9/2024            | 2.3.2.1 Gametogenesis,  |              |           |
|            | 10/15/2024           | 2.3.2.2 structures of Mammalian Ovum  |              |           |
|            | 10/15/2024           | 2.3.2.3 Structure of Mammalian Spermatozoa  |              |           |
|            |                      | <b>2.4 Fertilization</b>  |              |           |
|            | 10/16/2024           | 2.4.1 External and internal fertilization   |              |           |
|            | 10/16/2024           | 2.4.2 Oviparity,  |              |           |
| 10/22/2024 | 2.4.3. Viviparity    |   |              |           |
| 10/22/2024 | 2.4.4 Ovo-viviparity |   |              |           |
| 10/23/2024 | Revision             |   |              |           |
|            |                      |   | <b>Total</b> | <b>31</b> |

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## Academic calendar -2024-25

### Practical Teaching Plan for Semester-I

|                            |   |   |                   |                          |
|----------------------------|---|---|-------------------|--------------------------|
| <b>Course</b>              | F.Y.B.Sc. Zoology (NEP-2020)  |   | <b>Vertical 1</b> |                          |
| <b>Course Code</b>         | MJP1  |   |                   |                          |
| <b>Title</b>               | Major Practical-1   |   |                   |                          |
| <b>Credits</b>             | 02 Credits  |   |                   |                          |
| <b>Name of the Faculty</b> | Javidkhan VahabKhan Maniyar   |   |                   |                          |
| <b>Month</b>               | <b>Day</b>  | <b>Topic</b>  | <b>Batch</b>      | <b>Lecture per Month</b> |
|                            | <b>Major Practical-1</b>  |   |                   |                          |
| July                       | Wednesday   | Study of compound microscope, care and functions of its components,   | B                 |                          |
|                            | Thursday  |   | A                 |                          |
|                            | Monday  | Introduction to basic laboratory safety practices, precautions and safety rules and symbols.  | B                 |                          |
|                            | Tuesday   |   | A                 |                          |
|                            | Wednesday   | Introduction to basic laboratory safety practices, precautions and safety rules and symbols.  | B                 |                          |
|                            | Thursday  |   | A                 |                          |
|                            | Monday  | Use of Fire extinguisher  | B                 |                          |
|                            | Tuesday   |   | A                 |                          |
|                            | Wednesday   | Precaution and first aid for acid burn,   | B                 |                          |
|                            | Thursday  |   | A                 |                          |
|                            | Monday  | Precaution and first aid of chemical inhalation and the accident  | B                 |                          |
|                            | Tuesday   |   | A                 |                          |
|                            | Wednesday   | Handling of weighing Balance and preparation of solution of different concentration (Percentage, ppm, molarity, normality).               | B                 |                          |
|                            | Thursday  |   | A                 |                          |
|                            | Monday  | Handling of weighing Balance and preparation of solution of different concentration (Percentage, ppm, molarity, normality).               | B                 |                          |
|                            | Tuesday   |   | A                 |                          |
| Wednesday                  | Handling of common laboratory equipment (instrument and glassware): burner, autoclave, burette, and pipette (analytical and serological). | B   |                   |                          |
| August                     | Thursday  | Handling of common laboratory equipment (instrument and glassware): burner, autoclave, burette, and pipette (analytical and serological). | A                 |                          |
|                            | Monday  | Handling of common laboratory equipment (instrument and glassware): burner, autoclave, burette, and pipette (analytical and serological). | B                 |                          |
|                            | Tuesday   |   | A                 |                          |
|                            | Wednesday   | Packaging and autoclaving of test tubes, pipettes, Petri plates, and conical flask.   | B                 |                          |
|                            | Thursday  |   | A                 |                          |
|                            | Monday  | Measurement of pH of Milk, aerated drinks, Lemon juice, etc. using pH paper and pH meter.   | B                 |                          |
|                            | Tuesday   |   | A                 |                          |
|                            | Wednesday   | Demonstration of aseptic transfer of liquids between burners.   | B                 |                          |
|                            | Thursday  |   | A                 |                          |
|                            | Monday  | Study of Paramoecium culture to observe food vacuole, contractile vacuole and ciliary movement.   | B                 |                          |
| Tuesday                    | A   |   |                   |                          |

|           |           |   |              |           |
|-----------|-----------|---|--------------|-----------|
|           | Wednesday | Study of Paramoecium culture to observe food vacuole,   | B            |           |
|           | Thursday  | contractile vacuole and ciliary movement.   | A            |           |
|           | Monday    | Study of nutritional apparatus: Amoeba, L.S. of Hydra,  | B            |           |
|           | Tuesday   | Digestive system of Cockroach, Fish, Bird, and Mammals (ruminant and non-ruminant).                     | A            |           |
|           | Wednesday | Study of effect of temperature on amylase activity.   | B            |           |
|           | Thursday  |   | A            |           |
| September | Monday    | Study of effect of pH on amylase activity.  | B            |           |
|           | Tuesday   |   | A            |           |
|           | Wednesday | Study of heart of Cockroach, Fish, Frog, Calotes, Crocodile and Mammal.                                 | B            |           |
|           | Thursday  | Study of heart of Cockroach, Fish, Frog, Calotes, Crocodile and Mammal.                                 | A            |           |
|           | Monday    | Excretory apparatus in Amoeba, Planaria, Earthworm, Cockroach and Fish, Mammal.                         | B            |           |
|           | Tuesday   | Excretory apparatus in Amoeba, Planaria, Earthworm, Cockroach and Fish, Mammal.                         | A            |           |
|           | Wednesday | Study of Reproductive system in Ameoba, Hydra, Planaria, Cockroach, Mammals (T.S Testes and T.S ovary). | B            |           |
|           | Thursday  | Study of Reproductive system in Ameoba, Hydra, Planaria, Cockroach, Mammals (T.S Testes and T.S ovary). | A            |           |
|           | Monday    | Study of respiratory apparatus in Amoeba, Cockroach, Spider, Fish and Frog, Mammal.                     | B            |           |
|           | Tuesday   | Study of respiratory apparatus in Amoeba, Cockroach, Spider, Fish and Frog, Mammal.                     | A            |           |
| October   | Wednesday | Revision  | B            |           |
|           | Thursday  | Revision  | A            |           |
|           | Monday    | Revision  | B            |           |
|           | Tuesday   | Repetition  | A            |           |
|           |           |   | <b>Total</b> | <b>60</b> |