Under the powers vested in committee notified bythe University of Mumbai vide circular number AAU/ICD2015-16/500 dated 3rd September 20015it is informed to the concerned that following shall be the pattern of T.Y.B.Sc (Zoology) practical examination of semester V. The competent authorities may kindly note the same and ensure examination accordingly.

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University of Mumbai
T.Y.B.Sc. 2015-16
Semester V Practical Examination
For credit based semester and grading system

Course code: USZOP05
Practical I
</div>

Time: 9.30 a.m. to 2.30 p.m.   Total Marks: 50

1. Draw neat and labeled diagram of nervous system in Sepia and describe   15
      Functions of various parts.
    Complete the given system by drawing the missing   parts and describe the
    function   of all the labeled parts./Rearrange the parts of the given system and
    explain the functions of different parts.

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OR
</div>

    Draw neat and labeled diagram of reproductive system in Sepia /   15
    Complete the given system by drawing the missing part and describe the function of all
    the labeled parts./Rearrange the parts of the given system and explain the functions of
    different parts.

<div align="center">

OR
</div>

    Draw neat labelled diagram of the digestive system in Sepia/   15

    Complete the given system by drawing the missing part and describe the function of all
    the labeled parts./Rearrange the parts of the given system and explain the functions of
    different parts.

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OR
</div>

    Draw chick embryo of _____ hrs .Comment on the significance of somite   15
    Write the composition of Chick Ringers solution

2. Make diagramatic representation of following parts of Sepia and describe of the region
    where it is situated in the animal along with its function -

       a) Jaws/Radula   04
       b) Chromatophore/Spermatophores/Statocyst   06

3. Identification of slides/specimens a, b, c, d, e (3 marks each)   15

4. *Viva voce*   05

5. Journal   05

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T.Y.B.Sc. 2015-16
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Course code: USZOP05

Practical II

Time: 9.30 a.m. to 2.30 p.m.   Total Marks: 50

1. Demonstrate the effect of _____ on the activity of acid phosphatase.   18

   (Substrate concentration/pH variation/Enzyme concentration/Inhibitor concentration)
            or
 Determine the specific activity of acid phosphatase and submit a report.   18
            or
 From the diagram provided justify the separation of LDH isozymes   18

 2 Identify the stage in estrous cycle of the given animal, from the permanent   12
    Slide /photograph provided. Explain the characteristics of the stage observed

            or

    Differentiate between the Nerve cells & neurosecretory cells of cockroach from the   12
    given   photograph/diagram. Explain their function.

3. Identification: ECG (2 spots)   10

4. *Viva voce*   05

5. Journal   05

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T.Y.B.Sc. 2015-16
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Course code: USZOP06

Practical III

Time: 9.30 a.m. to 2.30 p.m.   Total Marks: 50

1. Estimate the amount _____ in the given tissue sample. (DNA/RNA)   15
    Tissue can be replaced using onion or banana peel.

2. Estimate LC_{50}/hr of the given toxicant for Daphnia by probit analysis.   15

    Note -Provide data of concentration & number of dead animals in each concentration
        students to calculate percentage mortality, probit analysis and draw graphs
                        or
    Estimate the effect of Carbon tetra-chloride on the levels of enzyme activity
     in the liver/serum_____. (ACP /ALP/AST/ALT).   15
    (Note- Data to be provided. Students are expected to do calculations and draw graphs)

3. Demonstrate the effect of any one heavy metal salt on the rate of heart beats   10

    in Daphnia.

Note- Data to be provided. Students are expected to draw a diagram of daphnia and label the
heart.

                        Or

Determine the purity of DNA by agarose gel electrophoresis.   10

    Onion or banana peel can be used to extract DNA

4. *Viva voce*   05

5. Journal   05

University of Mumbai
T.Y.B.Sc. 2015-16
Semester V Practical Examination
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Course code: USZOP06

Practical IV

Time: 9.30 a.m. to 2.30 p.m.   Total Marks: 50

1. Demonstrate line transect method to analyse a given community and make a report.   10

          or
   Demonstrate quadrate method to analyse a given community and make a report.   10

2. Make a report of rapid field tests for sulphates, nitrates and base deficiency in given

   soil sample.   10

          or

   Determine carbonates in soil by rapid titration method.   10

          or

Draw labeled diagram of head and mouth parts of a given genus of mosquito   10
and give the characteristics to identify the genus and sex of the mosquito.
          Or
From the given diagram identify the genus and sex of the mosquito.

3. Solve the given problem on biostatistics. (2 problems, 5 marks each)   10

4. Identifications (5 spots, 2 marks each)   10

5. Viva voce   05

6. Journal   05

University of Mumbai
T.Y.B.Sc. 2015-16
Semester V Practical Examination
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Applied component: Fishery Biology   Course code: USACFBIO5P1

Time 10.00am to 2.30   Total Marks : 100

1. Describe the different organoleptic test to differentiate fresh and stale fish and prawn. 20
2. Prepare various dilutions of the given sample of bacteria.   16
                              Or
   Identify the given bacteria with the help of Gram's staining technique.   28
3. Identification   (4 Marks each)
   a) Identify and describe the Oceanographic instrument
   b) Identify and label the diagram/ Identify and describe 2stroke or 4 stroke engine
   c) Identify and describe life saving equipment/deck side equipment
   d) Identify and describe the ornamental fish/aquarium plant.
   e) Identify and describe the aquarium accessories
   f) Identify and describe packaging material
   g) Identify the fish and explain the accessory respiratory organ.

4. Viva voce based on
a) Field visit- report and viva voce   8
b) Entrepreunal skill development - report and viva voce   8

5.Field Report   10

6. Journal   10

Applied Component :- Marine Science   **Course Code :-** USACMSC5P1

Time :- 10.00 am. to 2.30 pm.   **Total Marks** :- 100

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1. Estimate the amount of Silicates /Nitrates / Phosphates/CO_2 and $_pH$/Salinity from
    20
    the given water sample.

2. a. Identify the planktonic forms (5) and add a note on its adaptation
    15

3. Identification (a, b, c, d, e, f)
    30

4. Viva-voce based on field visit/s/Research Institute visit and case study /assignment.
    10

5. Reports on the visit and case study /assignment.
    15

6. Journal
    10

Note-Q 2 B is Displacement method to be performed by plankton biomass,as we can not use any organism expt can be performed by giving marbles, or sand particles at the discretion of college, or any 5 planktons can be given for identification and adjust the marks accordingly.

University of Mumbai

T. Y. B. Sc. 2015-16

Semester V Practical Examination

For credit based semester and grading system

Applied Component :- Economic Entomology   **Course Code :-** USACEENT5P1

Time :- 9.30 am. to 2.30 pm.   **Total Marks** :- 100

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1. Draw neat and labelled diagram of _____ system.
    20
    Complete the given system by drawing the missing part and describe the function of all the labelled parts.

    Rearrange the parts of the given system and explain the functions of different parts.

2. Make diagramatic representation of following parts of ____ and ____describe of the 8 region where it is situated in the animal along with its function
    7

3. Identification (a, b, c, d, e, f)
    30

4. Viva –voce based on field visit/ play and ponder and assignment.
    10

5. a. Field Report
    10

    b. Submission of 5 insect photo/ pictures
    5

6. Journal
    10

University of Mumbai

T. Y. B. Sc. 2015-16

Semester V Practical Examination

For credit based semester and grading system

Applied Component :- Environmental Science   **Course Code :-** USACEVS5P1

Time :- 10.00 am. to 2.30 pm.   **Total Marks** :- 100

NO CHANGE IN ENVIRONMENTAL SCIENCE PRACTICAL