

UNIVERSITY OF MUMBAI



Pattern of Question Paper for Theory and Practical Examination of S.Y.B.Sc. Zoology

(with effect from the academic year 2003-2004)

FORMAT FOR THEORY EXAMINATION WITH QUESTION PAPER PATTERN:

Based on revised syllabus of S. Y. B. Sc. Zoology, effective from the academic year 2003-2004.

There will be three question papers based on Paper I, II and III respectively.

Each theory paper will be of 50 marks carrying four compulsory questions.

Question 1 shall carry 14 marks and remaining three questions shall carry 12 marks each.

Question 1: Will be objective type consisting of 14 sub questions, not less than four sub-questions based on **each** of the three units.

Note: Types of objective questions recommended:

- Give an appropriate term for the following
- State whether true or false
- Match the columns (2 columns with unequal number of alternatives or 3 columns with equal number of terms)
- Multiple choice questions
- Fill in the blanks (appropriate terms to be mentioned at the end of the question along with extra ones, e.g. for five blanks give 7 – 8 options)
- Give reasons in a single sentence
- Define in one sentence
- Find the odd term out
- Arrange the following in proper order

(care should be taken to avoid the ambiguity)

Question 2: Will be based on **Unit – 1** with an internal option.

Q.2. Two short answer questions A and B, carrying 6 marks each

OR

Q.2. Three short notes a, b, and c carrying four marks each (only three to be asked)

Question 3: Will be based on **Unit – 2** with an internal option.

Q.3. Two short answer questions A and B, carrying 6 marks each

OR

Q.3. Three short notes a, b, and c carrying four marks each (only three to be asked)

Question 4: Will be based on **Unit – 3** with an internal option.

Q.4. Two short answer questions A and B, carrying 6 marks each

OR

Q.4. Three short notes a, b, and c carrying four marks each (only three to be asked)

Note: Not more than one full length question carrying 12 marks may be asked in ~~place of~~ question by replacing A and B or a, b, and c.

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PRACITCAL – I

Duration : 3 Hrs.

Marks: 40

Q. 1. Major Experiment

12

Estimation/determination of (DO*/BOD*/Salinity*/Organic content*)

OR

Estimation/determination of (CO₂ + pH of soil/ CO₂ + moisture content of soil/
Hardness + moisture/ Hardness + pH of soil)

6+6

Q. 2. Minor experiment:

6 marks

Mounting of mouthparts of: Cockroach/ housefly/ Mounting of **any three** types
of Foraminiferan shells.

Q.3. Identification of a, b, c, d, e, and f

12

A: Binary fission/conjugation in protozoa **or** any one canal system from Porifera **or** one specimen for polymorphism from coelenterates **or** any one coral **or** any specimen for parasitic adaptations in Platyhelminthes.

B: Heteronereis **or** trochophore larva **or** any one Crustacean larva **or** any one permanent slide for identification.

C: Specimen for metamorphosis in insects **or** any one specimen for Foot in Mollusca **or** any one specimen for shell in Mollusca.

D: Any one Echinoderm larva **or** Ascidian tadpole **or** swim bladder **or** any one specimen for breeding and parental care.

E. Any one specimen for adaptive radiation in Reptiles **or** any one snake **or** any one mammal.

F: Any one type of egg **or** any one type of blastula **or** any one permanent slide of gastrula.

Q. 4. Viva Voce

05

Q.5. Journal

05

***Flow chart to be provided**

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PRACITCAL – II

Duration : 3 Hrs.

Marks: 40

Q.1. Major experiment

12

Using Henderson-Hasselbalch equation prepare a buffer or pH_____, Check pH using pH meter.

OR

Prepare a titration curve using the strong acid and base provided.

OR

Determine the pKa of the given weak acid.

OR

Select the best filter for determining concentrations of the given two coloured solution.

OR

With the help of colorimeter determine the concentration of the sample provided. Prepare a standard graph using five different concentration by dilution stock standard.

OR

Demonstrate the effect on lipid solubility of the plasma membrane exposed to any three solvents.

OR

Demonstrate the process of osmosis using the sample RBCs of _____ provided.

Q. 2. Major experiment

10

Two problems of which one must be based on Genetics and other on biotechnology and/or Bioinformatics.

Q.3. Temporary preparation of

07

Metaphase chromosome/polytene chromosome/Barr bodies

Q. 4. Identification of a, b, c

06

A: Electron micrograph of ultrastructure of cell organelles

B: Any specimen of mimicry/warning colouration

C: Any specimen from plate/butt/slant/streaking.

Q. 5. Journal

05

%%%%%%%%%

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PRACITCAL – III

Duration : 3 Hrs.

Marks: 40

Q.1. Major experiment

10

Estimate total protein/lipid/cholesterol in the given sample (milk/egg)

OR

Extract casein* from the sample of milk provided and confirm its nature with a qualitative test.

OR

Detect the presence of any two adulterants in the sample of milk provided*

Q.2. Minor experiment

06

Mounting of _____ of Honeybee. (Mouth parts/Sting apparatus/All three legs)

Q.3. Identification of a, b, c, d, e, f, and j

14

- a. Any one Protozoan parasite
- b. Any one Helminth parasite
- c. Any one termite casts/insects
- d. Any one fishery specimen
- e. Any one craft or gear
- f. Any one breeds of specimen from animal husbandry
- g. Any one products obtained from animal husbandry/lactometer

Q.4. Journal

05

Q.5. Field report

05

***Flow chart to be provided.**

Note: Addition of three more animals to animal husbandry practicals:

Gir, Devni, and Killari to the list of animals already in the syllabus.