

Department of higher Education, Govt. of M.P.
Under Graduate Syllabus for B.Sc. (Bio) 3 Years
As recommended by Central Board of Studies in Zoology

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उच्च शिक्षा विभाग, म.प्र. शासन
स्नातक कक्षाओं के लिए त्रिवर्षीय पाठ्यक्रम
केन्द्रीय अध्ययन मण्डल प्राणीशास्त्र द्वारा अनुशंसित

Class / कक्षा : B.Sc. Ist year (Session-2017-18)
Paper : Ist
Subject/ विषय : Zoology
Title of Paper : Invertebrate
Max. Mark/ अधिकतम अंक : 42^{1/2}

Unit-I

1. Elementary knowledge of Zoological Nomenclature and International Code.
2. Classification of Lower Invertebrates (According to Parker and Haswell 7th edition)
(i. Protozoa ii. Porifera iii. Coelenterata iv. Helminthes)
3. Classification of Higher Invertebrates (According to Parker and Haswell 7th edition)
(i. Annelida ii. Arthropoda iii. Mollusca iv. Echinodermata v. Hemichordata)

Unit-II

1. Protozoa- Type study of Plasmodium.
2. Protozoa and Diseases.
3. Porifera- Type study of Sycon
4. Coelenterata- Type study of Obelia.
5. Corals and Coral Reef formation.

Unit-III

1. Helminthes- Type study of Liver Fluke (Fasciola hepatica).
2. Nematodes and diseases.
3. Annelida- Type study of Earthworm (Pheretima)
4. Metamerism in Annelida
5. Structure and significance of Trochophore larva.

Unit-IV

1. Arthropoda- Type study of Prawn (Palaemon).
2. Larval forms of Crustacea.
3. Insect as Vectors of human diseases.
4. Mollusca- Type study of Pila (An Apple Snail).
5. Larval forms of Mollusca

Unit-V

1. Echinodermata- External features and water vascular system of Star fish.
2. Larval forms of Echinoderms.
3. Minor Phyla- Ectoprocta and Rotifera.
4. Hemichordata -Type study of Balanoglossus
5. Affinities of Balanoglossus.

Wade
28/4/17
(Dr. Utkal Yadav)

Dr. Shivesh Pratap Singh
Prof. & Head, Dept. of Zoology
Govt. Autonomous P.G. College, Satna (M.P.)
Chairman, Board of Studies, A.P.S. University, Rewa

Dr. Shobha Shouk
28/4/17
Dr. Ram Shashi
Dr. Shiv Prasad
Dr. Rajiv Shrivastava
Dr. C. Basu
28/04/17
28/4/17

(2)

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Class / कक्षा	:	B.Sc. 1st year (Session-2017-18)
Paper	:	IIND
Subject/ विषय	:	Zoology
Title of Paper	:	Cell Biology and Developmental Biology
Max. Mark/ अधिकतम अंक	:	42^{1/2}

<p>Unit-I</p> <ol style="list-style-type: none"> 1. History of Cell Biology, Cell theory 2. Prokaryotic and Eukaryotic Cells. 3. Structure and function of Golgi body, Endoplasmic Reticulum, Lysosomes. 4. Structure and functions of Mitochondria, Ribosome, Centriole, Microsome
<p>Unit-II</p> <ol style="list-style-type: none"> 1. Structure and functions of Nucleus and Nucleolus. 2. Structure and functions of typical Chromosome. 3. Special type of Chromosome- Lampbrush and Polytene. 4. Nucleocytoplasmic interaction. 5. Cell cycle, Mitotic and Meiotic cell division.
<p>Unit-III</p> <ol style="list-style-type: none"> 1. Spermatogenesis 2. Oogenesis 3. Fertilization 4. Parthenogenesis 5. Regeneration.
<p>Unit-IV Development of Frog</p> <ol style="list-style-type: none"> 1. Cleavage 2. Blastulation 3. Fate map construction 4. Gastrulation and formation of three germinal layers 5. Structure of Tadpole Larva
<p>Unit-V Development of Chick</p> <ol style="list-style-type: none"> 1. Cleavage 2. Blastulation 3. Fate map construction 4. Gastrulation 5. Development of chick embryo upto formation of primitive streaks. 6. Extra embryonic membrane in chicks

(VSN)
(Dr. N. Shi)
(S. Rathore)

(AM)
 Dr. Shivesh Pratap Singh
 Prof. & Head, Dept. of Zoology
 Govt. Autonomous P.G. College, Satna (M.P.)
 Chairman, Board of Studies, A.P.S. University, Rewa

(Raj)
 28/4/17
 Dr. Roushi Singh
 (Dr. R. Poojini Nigam)

(A. Jaisankar)
 28/4/17
 Dr. C.S. Shivroobaru
 at Holkar college

(Dr. U. Yadav)
 28/4/17
 Dr. U. Yadav

(S. Choudhary)
 28/4/17
 Dr. Shobho Shinde

(S. Choudhary)
 28/4/17
 Dr. S. Choudhary
 (Dr. Anita)

(Dr. C.B. and)

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 28/4/17

B.Sc. - I Year - Zoology

Books of MP Hindi Granth Academy

- Parker & Haswall : Text book of Invertebrate Zoology
- Kotpal, RL : Invertebrate
- Rastogi, VB : Developmental Biology
- Arora, MP : Embryology
- Verma, PS and Agrawal, VK : Chordate Embryology
- Karp : Cell and molecular Biology
- Sheelar & Bianchi : Cell and Molecular Biology
- Rastogi V.B. : Introduction to cytology
- De Robertis : Cell and Molecular Biology
- Powar, CB : Cell Biology
- Verma, PS and Agrawal, VK : Cell Biology, Genetics, Molecular Biology, Evolution

[Signature]
28.4.17
(Prof. H.S. Rathore)

[Signature]
28/4/17
(Dr. M.S. Chauhan)

[Signature]
28.4.17
(Dr. Ramesh Singh)

[Signature]
28.4.17
(Dr. Vinodini Nigam)

[Signature]
(Dr. N. Sahu)

[Signature]
28/4/17
Dr. C.S. Shrivastava

[Signature]
28/4/17
(Dr. Rajiv Shevastava)

[Signature]
28.4.17
(Dr. Shobha Shouche)

[Signature]
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[Signature]
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[Signature]
28/4/17
(Dr. Usha Yadav)

[Signature]
28/04/17
(Dr. Anita Salanki)

(4)

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Class / कक्षा : **B.Sc. I year (Session-2017-18)**
Subject/ विषय : **Zoology Practical**
Max. Mark/ अधिकतम अंक : **50**

The practical's work will be based on theory syllabus and the candidates will be required to show the knowledge of the following :-

1. Study of Museum Specimens and slides relevant to Invertebrates Studied in theory. (any 1)
2. Mounting / squash preparation :- (any 1)
 - (a) Prawn statocyst
 - (b) Pila-Ctenidium/redula/osphridium
 - (c) Earthworm- Septal nephridia
 - (d) squash preparation onion root tip
3. Dissection – (any 1)
 - (a) Earthworm- Digestive System, Nervous System, Reproductive System
 - (b) Prawn- Nervous System, Appendages
 - (c) Pila- Nervous System
4. Exercise related to frog and Chick embryology. (any 2)
5. Exercise related to cell biology – (any 2)
 - (a) Stages of mitotic and meiotic cell division
 - (b) Special types of Chromosome

Distribution of Marks

1. Dissection	08
2. Spotting	16
3. Mounting/ Squash Preparation	06
4. Exercise related to Embryology	05
5. Exercise related to Cell Biology	05
6. Viva –voce	05
7. Practical Record and collection	05

Total 50

Dr. Shivesh Pratap Singh
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Rathore

(Prof. H.S. RATHORE)

V. Saha
88

Dr. C. Shivraj
Reluivastane

Dr. Shobha Shrivastava
Dr. Utkarsh Jadhav
Dr. M.S. Chauhan
Dr. Ramesh
Dr. Vinodini Singh

Dr. C. Bann

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