

MAGADH UNIVERSITY

BODH GAYA



SYLLABUS
OF
PRE- Ph. D. REGISTRATION
ENTRANCE TEST

2014 onwards

FACULTY OF SCIENCES

Price Rs. 100/-

ZOOLOGY**PAPER - I**

Time - 3 Hours

Full Marks-100

General awareness (consisting of objective type questions only) Paper setter may divide questions in 5 sub headings, each consisting of 20 marks such as - Fill up the blanks, Multiple choice, True & False, Reasoning and matching the column A & B, etc.

PAPER - II

Time - 3 Hours

Full Marks-100

It will consist of descriptive type questions 4 questions shall be set from group - A (of which 2 are to be answered) and 6 questions in each of the group - B section (out of which 3 are to answered from any group chosen by the examinee) Each question of both the groups will be of 20 marks.

GROUP - A**General****40 Marks**

1. General organisation of Monera, Protista, Viruses & Eukaryotic animals. Definition and basic concept of biosystematics and taxonomy.
2. Basic events of Biostatistics ; correlation, regression, Chi-square test and t-test.
3. Molecular events of fertilization and cell differentiation

- spermatogenesis, ovarian follicular growth Model
- concept of evolution Neo Darwinism, Speciation
- biological diversity.
4. Industrial microbiology, Principles of immunology
microorganism & diseases.
5. Biomembrane; Biology of cancer and biology
aging, permeability, lysogeny & lytic cycle
bacteriophages.
6. Modern informations on DNA including principle and
application of recombinant DNA ; DNA repair, DNA
replication, Transcription and Translation, Gene
cloning & genetical diseases of man.
7. Functioning of heart & its regulation; reproductive
excretory and respiratory physiology in human
beings.
8. Enzymes, enzyme action & inhibition, energy
yielding metabolism, role of hormones and vitamins
in nutrition.
9. Thyroid, pituitary and adrenal glands along with the
concerned abnormalities, hypothalamic-pituitary
control system.
10. Limiting factors, Basic concept of Ecosystem
Ecological succession; population & community
ecology; pollution, & conservation & sustainable
development.
11. Elementary idea of Biotechnology, Animal behavior
Bio-rhythms.

GROUP - B

Entomology Special

60 Marks

1. Distinctive characters of class insecta & its classification upto suborders/series with suitable examples.
2. Mouthparts and feeding mechanism.
3. Structure and function of integument, wing & genitalia.
4. Digestive, Excretory & Respiratory system & its physiology.
5. Reproductive organs & receptors.
6. Hormonal control of reproduction, ecdysis and metamorphosis.
7. Chemical control and Integrated pest management.
8. Insects of medical importance & diseases.
9. Paddy, Sugarcane, Vegetable & Cotton pests & their management.
10. Useful insects & their culture technologies.

or

Group B

Fish Special

60 Marks

1. Origin and evolution of fishes.
2. Electric organs & light producing organ of fishes.
3. Respiration including accessory respiratory organs; Hillstream adaptation in fishes.

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4. Migration, Parental Care.
5. Swim bladder and webberian ossicles in Fishes
6. Artificial inducement of breeding by hormone administration.
7. Pond cultures.
8. Riverine Fisheries.
9. Composite fish farming and Advancement of Aquacultural trend in India : fish diseases and parasites, their therapy and control, Fish processing and Preservation.
10. Bye-products of fish industry. Larvivorous fishes and public health.

or

Group B

Parasitology Special

60 Marks

1. Parasitic amoebae and flagellates of man.
2. Biology, diagnosis, treatment and control of (a) Eimeria tenella, (b) Babesia biguina (c) Theilaria parva (c) Ticks and mites.
3. Culture techniques-advantages and basic problems involved in vitro-culture.
4. Morphology, life history, mode of infection, pathogenicity & control of (a) Fasciolopsis bus

- (b) *Dicrocoelium dendriticum* (c) *Paragonimus wastermani* (d) *Echinococcus granulosus*,
(e) *Diphyllobothrium latum* (f) *Wuchereria bancrofti*.
5. Larval forms of trematodes or Cestodes.
 6. Host specificity and Host parasite - Interactions with effect of parasite on host.
 7. Parasitic adaptations with special reference to infection and transmission.
 8. Life cycle patterns in Trematodes, Cestode, and Nematodes.
 9. Resistance and Immunity with reference to helminthic infection.
 10. Parasitic crustaceans.

CHEMISTRY

There will be two papers of 100 marks each. Paper I will be aimed at testing general awareness of the candidate in Chemistry. In this paper there will be 50 questions of objective type carrying 2 marks each. The candidate will be required to attempt all questions in this paper in 3 hours.