



GOA UNIVERSITY
Taleigao Plateau

SYLLABUS FOR GOA UNIVERSITY ADMISSIONS RANKING TEST(GU-ART) IN ZOOLOGY

1. Diversity of Lower Non-Chordates

- A) General principles of animal taxonomy.
- B) Phylum Protozoa, Porifera, Cnidaria, Platyhelminthes, Aschelminthes, Annelida

2. Cell Biology:

- A) Overview of the General structure and organization of cells.
- B) Cell Environment.
- C) Cell Organelles
- D) Cancer Biology
- E) Techniques in Cell Biology

3. Diversity of Higher Non- Chordates

Phylum Onychophora, Arthropoda, Mollusca, Echinodermata, Hemichordata

4. Genetics and Molecular Biology

- A) Overview of Mendelian genetics and Modifications
- B) Sex Determination and Sex related Inheritance.
- C) Human genetics
- D) Gene Mutations
- E) Inbreeding and heterosis
- F) Genetic engineering and animal biotechnology

5. Diversity of lower chordates

- A) Biodiversity
- B) Protochordata
- C) Chordata
- D) Vertebrata
- E) Pisces

6. Animal Physiology

- A) Digestion
- B) Respiration
- C) Circulation
- D) Contraction and movement
- E) Excretion and osmoregulation
- F) Reproduction

7. Diversity of higher chordates

- A) Amphibia

- B) Reptilia**
- C) Aves**
- D) Mammals**

8. Ecology and animal behavior

- A) Environmental factors and animal interactions**
- B) Community**
- C) Ecological adaptation**
- D) Types of animal behavior**
- E) Behaviour ecology**
- F) Reproductive behaviour**

Text / Reference Books recommended:

- a. Barnes, R. D. (2000). Invertebrate Zoology. Hall Saunders International Editions
- b. Kotpal, R. L (2000). Invertebrates. Rastogi Publication, Meerut.
- c. Ganguli, B.B.; Sinha, A.K., and Adhikari, S. (2000). Biology of Animals Vol-I & II. New Central Book Agency, Calcutta.
- d. Ayer Ekabaranath, M. (2000). A Manual of Zoology. Vol. I Part I & II. S. Viswanath, Madras.
- e. Dhama, P. S. and Dhama, J. K. (2000). Invertebrate Zoology, S. Chand & Co. Pvt. Ltd. New Delhi.
- f. Jorden, E. L. & Verma, P.S. (2000). Invertebrate Zoology. S. Chand & Co. Pvt. Ltd. New Delhi.
- g. Powar, C.B. (2004). Cell biology, Himalaya Publication
- h. DeRobertis and De Robertis (2000). Cell and Molecular Biology. 6th Edition
- i. Bhamrah, H.S.; Kavita Juneja. Molecular Cell Biology. Anmol Publications Pvt. Ltd, New Delhi
- j. Kumar, H.D. (1996). Molecular Biology and Biotechnology, Vikas Publication, New Delhi.
- k. Verma and Agarwal (2008). Cell Biology, Genetics, Molecular Biology, Evolution & Ecology. S. Chand & Co. Ltd. New Delhi
- l. Gupta, P.K. (1996) "Genetics" Rastogi Publications.
- m. Ranga, M.M. "Animal Biotechnology (Agrobios), Published by Agrobios (India).
- n. Rastogi, Sharma, V.N. and Anuradha Tandon (1993). "Concepts in Molecular Biology". Wiley Eastern Ltd. N. Delhi.
- o. Smustad, Simmons, Jenkins (1999). "Principles of Genetics" John Wiley and sons. Inc.
- p. Daniel Fairbanks, W. Ralph Anderson. (1999) "Genetics, the Continuity of Life" Brooks/Cole Publishing Company, New York.
- q. Parker, A.J. & Haswell, W.A.A. (2002). Textbook of Zoology. Vol. I. Macmillan. Giese, A. (1983). Cell Physiology Saunders International edition
- r. Prasad, S. N., Chordates, Vikas Publishing House, Pvt. Ltd.
- s. Mohan P. Arora 'Animal physiology' Himalaya publishing house.
- t. Eckert R. "Animal physiology" CBS publishers.
- u. Nagabhushanam, M. S. Kadarkar, R. Sarojini 'Text book of animal physiology', second edition, Oxford and IBH publishing Co. Pvt. Ltd. New Delhi, Kolkata.
- v. Hoar , "General and Comparative physiology" Prentice hall.
- w. Nigam, H.C., Biology of Chordates, Vishal Publications, Adda Hoshiarpur, Jolandhar city.
- x. Salim Ali and Dillon Ripley, S.,(1995) - A pictorial guide to the Birds of the Indian Subcontinent, Bombay Natural History Society, Oxford University Press,
- y. Arora M.P. Animal behaviour, Himalaya Publishing House, New Delhi
- z. Drickamen and Vessey. Animal behaviour-Concepts, processes and methods, Wadsworth publishers.