**PAPER** -**II**

**Total Marks: 100**

**General Zoology**

**SECTION-A**

**Cell Biology:**

Generalized Structure of Prokayotic and Eukaryotic Cell, Morphology, chemical

composition and Functions of cellular organelles, Enzymes Catalysis, Regulation &

Inhibition, Metabolic Pathways,Glycolysis, Kreb cycle and Electrons Transport chain.

Nucleic acid, Mechanism of Protein synthesis, Transcription and Translation, Mitosis,

Meiosis.

**SECTION -B**

**General Physiology:**

Excretion and Homeostasis, osmoregulation, vertebrate nephrone as osmoregulatory

organ, Thermoregulation in Animals, Movements and Muscle, ultra structure of Muscle

fibril, mechanism of contraction, Physiological anatomy of digestive Tract, Potential and

movement in Gastrointestinal Tract, Respiration, Respiratory Mechanism, Respiratory

Pigments, Transport of O2 and Co2; cardiovascular Mechanism, electrical activity of

Heart, Blood Pressure, Coordination in animals, Nervous coordination and chemical

coordination, Nervous system, nerve Impulses, Harmones and their Biological action.

Mechanism of Active membrane Potential and Resting membrane Potential,

synopsis.

**SECTION -C**

**Genetics:** Mendelian Principles, Multiple alleles, Interaction of genes, Linkage and

crossing over, maping of genes, Sex-determination and Sex-linkage, Mutations, gene

concept, Chromosomal aberrations, DNA as a genetic material, genetic Code, DNA

Recombinant Technology, Application of genetic Engineering, Transgenic animals.

**Section -D**

**Evolution:** Theories of origin of Life, Biochemical origin of life, Lamarckism, Darwinism

and Neo-Darwinism, Hardy Weinberg Principle, Mutation Pressure, Selection Pressure,

Genetic drift species concept, Mechanism of evolution, modern concept of Natural

Selection, Adaptive radiation.

**SECTION – E**

**Ecology:**

Concept of Ecosystem. Biogeochemical cycle, Animal adaptation to major

Habitats, Energy flow in the Ecosystem, Food chain, Food web, Productivity of

Ecosystem Environmental Pollution, Water Pollution and Lamo Pollution.

**BOOKS RECOMMENDED (Latest Edition):**

*1. Watson, J.D., Hopkin, N.H, Roberts, J.W., Streitz, J.A. and Weiner, M.A.*

*(1990). Molecular Biology of the Gene. Benjamin, California.*

*2. Turner, P.C., Mclennon, A.G., Bates, A.D. and White, M.R.H. (1998).*

*3. Karp G. (2002). Cell and Molecular Biology. John Wiley & Sons, Inc. New*

*York.*

*4. Twyman. R.M. (1998). Advanced Molecular Biology. Bios Scientific*

*Publishers.*

*5. Weaver R.F. (1999). Molecular Biology, WCB/McGraw-Hill New York.*

*6. Adams, R.L.P., Knowler, J.T. and Leader, D.P. (1986). The Biochemistry of*

*the Nucleic Acids. Champan and Hall.*

7. *Cell and Molecular Biology (8th Edition) De – Robbertis & De Robertis*

*FMA.*

*8. Modern Genetics by Ayala, F.J. and Kiger, JaA.Jr.*

*9. Loewy, A.G. and Siekevitz. Cell structure and function, Holt Rinehart N.Y.*

*10. Levine, R.P. Genetics. Holt Rinehart and Winston, N.Y.*

*11. Robert F. Weaver, Philip W. Hedick, Basic Genetics.WCB.*

*12. Generald Karp, Cell and Molecular Biology, John Weley & sons.*

*13. Strickberger, M.W., Genetics. McMillan Co., New York.*

*14. Winchester, A.M. Genetics. Haugton-Miffin Co.*

*15. Scheeler, P. and Bianchi, D., Cell and Molecular Biology.*

*16. Gagong, W.F. 1987, Prentice Hall, Inc. Review of Medical Physiology.*

*17. Gordon M.S., Bartholomew, G.A. Grinnel A.D., Jorgensen, C.B.., and F.N.,*

*Animal Physiology: Principles and Adaptations, N.Y.*

*18. Guyton, A.C., Textbook of Medical Physiology, W.B. Saunders Company,*

*Philadephia.*

*19. Prosser, C.L. Comparative Animal Physiology, Saunders Philadelphia.*

*20. Hoar, W.S., General and Comparative Physiology, Inc, New Jersev.*

*21. Sadar, M.H. and Smith, M.S., 1993. EIA Methods and Procedure. Impact*

*Assessment Institute, Carleton University, Ottawa, Canada.*

*22. Smith, R.L., Ecology and Field Biology, Harper and Row.*

*23. Michael, I. Mckinney and Robert, m Schoch, 1998. Environmental*

*Science, Hones and Bartett Publisher, International.*

*24. Chapman, J.L and Reiss, M.J., 1997. Ecology (Principles and*

*applications), Cambridge University Press.*

*25. Kormodndy, E.J., 1996. Concepts of Ecology. Prentice Hall, India.*

*26. Eckert and Randall, Animal Physiology.*

*27. Odum, E.P., Fundamentals of Ecology. W.B. Saunders.*

*28. Macfadyen, Animal Ecology: Aims and Methods.*

*29. Prosser, C.L., Cooperative animal physiology. W.B. Saunders.*

*30. Hoar, W.S., General and Comparative Physiology. Prentice Hall Inc.*

*31. Nebel, B.J., Environmental Science. Prentice Hall Inc.*

*32. Can, A.J., Animal species and their evolution. Hutchjinson’s U.L. London.*

*33. Moody, P.A., Introduction to Evolution. Harper and Row.*