

Course Contents:

Mechanisms of action of a protein/peptide, a steroid and thyroid hormone; Hormonal regulation of metabolism; Molecular basis of muscular contraction; Molecular interaction at neuromuscular level; Molecular structure of cilia and flagella and mechanisms in movements.

Automaticity and rhythmicity of myogenic heart; Regulation of cardiac activity; Humoral regulation of circulation: Vasoconstriction and vasodilation. Exchange of respiratory gases; Chemical regulation of respiration. Nature and formation of various nitrogenous waste products; Glomerular filtration, reabsorption, and secretion mechanisms; Concentration of urine. Regulation of digestive secretions; Digestion and absorption of nutrients. Molecular mechanisms in adaptation to temperature extremes.

Teaching-Learning Strategies

Teaching will be a combination of class lectures, class discussions, and group work. Short videos /films will be shown on occasion.

Assignments

The sessional work will be a combination of written assignments, class quizzes, presentation, and class participation/attendance.

Assessments and Examination

Sessional Work: 25 marks

Midterm Exam: 35 marks

Final term Exam: 40 marks

Books Recommended:

1. Randall, D., Burggren, W., French, K. and Fernald, R., 2002. Eckert Animal Physiology: Mechanisms and Adaptations, 5th ed. W.H. Freeman and Company, New York
2. Bullock, J., Boyle, J. and Wang, M.B., 2001. Physiology, 4th Ed.. Lippincott, Williams and Wilkins, Philadelphia.
3. Berne, R.M. and Levy, M.N., 2000. Principles of Physiology, 3rd Ed.. St. Louis, Mosby.
4. Guyton, A.C. and Hall, J.E., 2000. Textbook of Medical Physiology, 10th Ed.. W.B. Saunders Company, Philadelphia.
5. Withers, P.C., 1992. Comparative Animal Physiology. Saunders College Publishing, Philadelphia.
6. Schmidt-Nelsen, K., 1997. Animal Physiology, Adaptation and Environment, 5th Ed.. Cambridge University Press, Cambridge.
7. Tharp, G. and Woodman, D., 2002. Experiments in Physiology, 8th Ed.. Prentice Hall, London.

Course Contents:

Respiratory function and oxygen consumption in acidosis and alkalosis in mouse. Study of nature of nitrogenous wastes of animals inhabiting different environment. Urine analysis in different physiological states. Absorption of glucose in inverted intestinal sac, effect of drugs on intestinal movements. Muscular responses to Pyrexia.

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