



Research Topics for second Year

1- Reproduction in poultry

- a) Reproduction in male birds, avian Sperm and Factors affecting semen formation in poultry.
- b) Female reproductive system and egg formation.
- c) Endocrine regulation of ovulation.
- d) Mechanism by which heat stress affect egg production and egg shell formation.
- e) Reproduction and Photoperiods
- f) Laying cycle and oviposition.

2- Endocrine glands in poultry

- a) Pituitary Gland in chicken
- b) Crop milk and prolactin hormone.
- c) Thyroid gland and molting in chicken.
- d) The Role of Hormones in the Regulation of Bone Turnover and Eggshell Calcification.
- e) Function of estrogen hormone in poultry.

3- Respiration in poultry

- a) Mechanism of respiration in birds
- b) Types and function air capillaries.
- c) Types and function of Air sacs
- d) Pneumatic bone
- e) Main differences between mammalian and avian respiratory system.

4- Gastrointestinal System in Birds

- a) True digestion in chicken
- b) Accessory digestive glands in poultry
- c) Growth curve and Factors affecting growth in poultry

5- Circulation in fish

- a) Fast or slow why?
- b) Heart of fish
- c) Blood in heart rich or poor O₂
- d) Differences between tilapia and Australian lungfish?

6- Kidneys in fish



- a) Excretory function
- b) Hematopoietic function in teleosts
- c) Osmoregulatory function
- d) Endocrine function

7- Respiration in fishes

- a) Mechanism in tilapia
- b) Countercurrent gas exchanger
- c) Differences between carp and sharks
- d) Oxygen requirements

8- Osmoregulation in fishes

- a) Differences between eel and salmon
- b) Why sharks are exclusively marine fish
- c) What's meant by euryhaline fish

9- Follicular waves

- a) Meaning
- b) Hormonal changes controlling Follicular waves during estrus cycle in different animal
- c) Mechanism of follicular waves emergence, progress and finishing either to atresia or ovulation
- d) Mechanism of dominant follicle dominance
- e) Hormonal, granulosa cell and oocyte factors affecting follicle dominance

10- Ovulation

- a) Meaning of ovulation
- b) Types of ovulation in different animals
- c) Hormonal control of ovulation
- d) Granulosa cells and oocyte factors affecting ovulation
- e) Functions of cumulus Oophorus cells during Oocyte maturation, ovulation and fertilization

11- Estrous cycle

- a) Stages of estrous cycle
- b) Type of estrous cycle in different animals
- c) Hormonal changes during estrous cycle in different animals
- d) Time of ovulation in different animals
- e) Proper time for insemination in different animals

12- Parturition



- a) Theories of parturition
- b) Hormonal control of parturition
- c) Signs that indicates the animal approaching parturitions
- d) Stages of parturition in details
- e) Proper Care of cow and calves during Puerperium stages
- f) Postpartum uterine involution
- g) Postpartum heat
- h) Proper time for postpartum insemination

13- Male reproductive physiology

- a) Male Puberty
- b) Meaning of puberty and maturity in male and female
- c) Hormonal control of puberty
- d) Different stages of spermatogenesis
- e) Spermatogenic wave and cycles
- f) Hormonal control of spermatogenesis
- g) Details about sertoli and leydig cells functions and their regulation