**Y E A R : S E C O N D**

S U B J E C T : H I S T O L O G Y الانسجة

**Theoretical hours: 2**

**Practical hours: 3**

**Units: 7**

**FIRST & SECOND SEMESTERS**

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| **HISTOLOGY: THEORETICAL SUBJECTS** | **HOURS** |
| INTRODUCTION:  Definition of histology and it's relation to other sciences,  microscopic measurements, calculation of magnification, basic histological techniques. | **1** |
| CYTOLOGY:  Interphase nucleus, nuclear membrane, chromatin, duplication of chromatin, nucleolus, cytoplasmic organoids mitochondria,  granular and smooth endoplasmic reticulum, ribosomes, Golgi apparatus, lysosomes, centrosomes, cell membrane. | **5** |
| BLOOD AND MYELOID TISSUE:  Blood leukocyte:differential diagnosis, normal values in animals,  erythrocytes: shape,structure and function, blood platelets: structure and function, myeloid tissue: general structure, erythropoesis, granulopoesis, structure and development of blood platelets. | **4** |
| NERVOUS TISSUE:  Constituents of nervous tissue, neurons, Structure and  classification, organoids of neurons, axons and dendrites,  supporting cells in CNS and PNS, synapses, nerve fibers, cerebrospinal and autonomic ganglia. | **5** |
| CARTILAGE AND BONE:  Cartilages, types and histological structure, bone, compact and spongy bone, structure and location, differences between bone and cartilages, intramembranous and endochondral ossification. | **3** |

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| **HISTOLOGY: THEORETICAL SUBJECTS** | **HOURS** |
| CARDIOVASCULAR SYSTEM:  Blood vessels, types of arteries, types of veins, venules, types of  capillaries, sinusoids, arteriovenous anastomosis, wall of the heart, cardiac valves, pulse conducting system. | **3** |
| LYMPHATIC SYSTEM:  Lymphatic vessels, lymphatic organs, tonsils, lymph nodes,  hemolymph nodes, thymus, spleen: different theories of arterio- venous circulation, lymphatic nodules in other non lymphatic  organs. | **3** |
| RESPIRATORY SYSTEM:  Nasal cavity, vestibular region, respiratory region, olfactory  region, larynx, trachea, lung, bronchi, bronchioles, alveolar ducts, alveoli, interaleveolar septum, pleura. | **3** |
| DIGESTIVE SYSTEM:  Oral cavity, lip, tongue, lingual papillae, esophagus, stomach,  nonglandular stomach in ruminants: rumen, reticulum, omasum, abomasums, glandular stomach, cardiac portion, fundic portion, pyloric portion, small intestine: duodenum, jejunum, ileum,large intestine, colon, recto anal junction, accessory glands, liver, pancreas. | **8** |
| URINARY SYSTEM:  Unipyramidal kidney, multipyramidal kidney, general microscopic  structure, nephron, portions and function, guxtaglomerular complex, portions and function, ureter, urinary bladder, urethra. | **3** |
| ENDOCRINE SYSTEM:  Pituitary gland, embryonic origin, adenohypophysis and  endocrine cell types, neurohypophysis, hypothalamic portion, thyroid gland, structure and function, adrenal gland, structure and function, parathyroid gland, structure and function, endocrine cells in other organs. | **4** |
| MALE REPRODUCTIVE SYSTEM:  Histological structure of testis, seminiferous tubules, spermatozoa development, adult spermatozoa, interstitial cells,  epididymis, ductus deferens, prostate gland, vesicular gland, bulbourethral gland. | **4** |

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| **HISTOLOGY: THEORETICAL SUBJECTS** | **HOURS** |
| Female reproductive system:  Histological structure of ovary, ovarian follicle development,  ovulation, corpus luteum and function oviduct portions, histological structure of uterus, cyclic changes in the  endometrium, cervix, vagina, mammary gland and functional conditions. | **6** |
| SENSORY ORGANS:  Eye: histological structure: cornea, sclera, choroid, ciliary body,  iris, retina, eyelid. Ear: histological structure of internal ear: osseous labyrinth, membranous labyrinth, cochlear duct, organ of corti. | **4** |
| SKIN:  Epidermis, dermis, hair follicles, structure, classification, arrangement, skin glands: sebaceous gland, sweat glands, arrector pili muscle | **4** |
| **Total** | **60** |