This study guide includes all the lab questions I have used in 4 lab exams. I have included the key to lab exam 4 because we didn't get a chance to discuss it in class. I have added the names of models or bones or muscles I used in most of the questions. I want you to remember 1 character/function of each part or similar parts in the models. Instead of tissue pictures I will use 5 slides, we studied them 2 weeks back, for the lab exam.

### Lab Exam 1

<table>
<thead>
<tr>
<th>Question</th>
<th>A. Name the objective.</th>
<th>B. Calculate the total magnification.</th>
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</thead>
<tbody>
<tr>
<td>2.</td>
<td>A. Name the part of microscope</td>
<td>B. What kind of light is used by this microscope? Reflected / Transmitted</td>
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<tr>
<td>3.</td>
<td>A. In anatomical position calves and shoulder blade are on -------- side.</td>
<td>B. The thoracic cavity is -------- to Abdominopelvic cavity.</td>
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<td>4.</td>
<td>A. Name a section of the body that separates eyes from each other.</td>
<td>B. Heart is surrounded by a double membrane, name it.</td>
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<tr>
<td>5.</td>
<td>A. Name the organ. Name the system to which it belongs.</td>
<td>B. Name the organ. Name the system to which it belongs.</td>
</tr>
<tr>
<td>6.</td>
<td>A. Identify the phase of mitosis.</td>
<td>B. Identify the phase of mitosis.</td>
</tr>
<tr>
<td>7.</td>
<td>A. Identify the part of cell</td>
<td>B. Identify the part of cell</td>
</tr>
<tr>
<td>8.</td>
<td>A. Give net movement water between A and B cells.</td>
<td>B. Why water is moving in this direction?</td>
</tr>
<tr>
<td></td>
<td>A. 5% glucose solution</td>
<td>B. 7% glucose solution</td>
</tr>
<tr>
<td>9.</td>
<td>A. Name the muscle tissue with branched nerve fibers and intercalated discs.</td>
<td>B. Name the organ. Name the system to which it belongs.</td>
</tr>
<tr>
<td>Smooth m.f. / skeletal m.f. / cardiac m.f.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>A. Name the part A of integument</td>
<td>B. Name the part B of integument</td>
</tr>
<tr>
<td>11.</td>
<td>A. Name the organelle attached to membrane systems or scattered freely in the cytoplasm; It synthesizes proteins.</td>
<td>B. Name the organ. Name the system to which it belongs.</td>
</tr>
<tr>
<td></td>
<td>SER / Ribosomes / Golgi Apparatus</td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>Name the 2 kinds of sweat glands in integument.</td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>A. Name 2 rod shaped bodies, placed at 90° to each other, provide basal granule to cilia</td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>A. Name threadlike structures in the nucleus; contains DNA</td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td>A. Name the tissue in picture</td>
<td>B. Name the tissue in picture</td>
</tr>
<tr>
<td>16.</td>
<td>A. Name a supportive connective tissue without blood supply (avascular)</td>
<td>B. Name the 2 kinds of basic cells found in nerve tissue</td>
</tr>
<tr>
<td>17.</td>
<td>A. Name the phase of mitosis</td>
<td>B. Name the phase of mitosis</td>
</tr>
</tbody>
</table>
18. A. DNA divides during ------ phase of cell cycle  B. Chromosomes appear during ------- phase

19. A. Name the membranous part consisting of flattened sacs and vesicles; packages proteins for export RER / SER / Golgi Apparatus / Nucleus

20. Chromosomes line in the center of cell during --------------

21. A. Name the central region, out of 9, of abdominal surface.

22. A. The brain is ------------ to spinal cord.  B. The kidneys are ------------ to the liver.

23. A. Name 2 organs in the Abdominopelvic cavity.  B. Name 2 organs in the thoracic cavity.

24. A. Name an organ lined with serous membranes  B. Name an organ lined with mucous membranes

25. A. Name a dense connective tissue that joins 2 bones.  B. Name a dense connective tissue that joins a muscle to a bone.

26. A. Stomach is present in ----------- quadrant.  B. ----------- is present in hypogastric region.

27. A. The elbow is ------------ to shoulder but ---------- to fingers.

28. A. Brain lies in -------- cavity.  Ventral / dorsal / thoracic

29. A. Name the medial area lying over stomach  B. Name the medial area lying over stomach Hypogastric / Umbilical / epigastric

30. A. Identify the tissue  B. Identify the tissue

31. A. Name the tissue and kind of matrix it has

32. Hormones are secretions of -------------- glands.

**Lab Exam 2**

1. A    Femur    B    Name the socket and bone for its head

2. A    Tibia    B    Name the ankle bone it forms

3. A    Sacrum    B    Name its 3 articulations

4. A    Atlas and Axis    B    Name the joint they form

5. A    Clavicle    B    Endochondral / membrane bone

6. A    Scapula    B    Name 2 muscles originating from it

7. A    Radius/ulna    B    medial / lateral position

8. Skull    Name 2 sutures of cranium and bones involved.

9. Skull    Name 2 bones having sockets for teeth. Mention upper or lower jaw.

10. A    Name 4 bones of skull with Paranasal sinuses in them.  B    give 1 function of sinuses

11. A    Lumbar V.

13.  pairs are true ribs and  pairs are false ribs.

14. Wrist has  carpals and  tarsals.

15.  is a sesamoid bone formed inside tendon of Quadriceps Femoris.

16. A Platysma  B  Give 1 function

17. A Sternocliedomastoid  B  single or both contract

18. A Masseter  B  give its function

19. A Pectoralis major  B  Give its 2 functions

20. A Rectus femoris  B  Give its 2 functions

21. A Name spine flexor and extensor muscles.

22. A Gastrocnemius  B  Name its synergist and antagonist muscles  Soleus, Tibialis ant.

23. A Biceps brachii  B  Name its synergist and antagonist muscles

24. A Deltoid  B  Name movement and its antagonists

25. A Biceps femoris  B  Name movement and its antagonists

26. All flexors lie on anterior aspect of body except leg flexors.

27. During muscle contraction  moves closer to its  .

28. Flexor Carpi radialis contract to move  and are attached to  bone.

29. Thin filaments are formed of ,  and  proteins.

30. During contraction  filaments glide over  filaments.

31. A muscle is covered by a sarcolemma / perimysium / epimysium / endomysium.

Lab Exam 3

1 – Name the part and give 1 function of A, B, and C. (Neuron model - A –dendrite, B-terminal knob, C-myelin sheath)

2 - Name the part and give 1 function of A, B, and C. (Brian model - A-primary motor area, B-cerebellum, C-pituitary gland)

3 – Inside of a nerve fiber is – 70mV, it is  ; change from – 70mV to 30mV is  and change from 30mV to – 80mV is  .

4 – The coverings of a nerve fiber is  ; of a fascicle of nerve fibers is  ; of a nerve is  .

5 – A) name the structure that forms cerebrospinal fluid, B) name the outer tough fibrous connective tissue layer covering brain, C) name 2 sensory cranial nerves
6 – Name parts A, B, C of Brain. (Brian model - thalamus, corpus callosum, pons)

7 – There are -------- pairs of spinal nerves, -------- pairs are cervical spinal nerves and ---------root has ganglion and is sensory.

8 – A) Name the muscle of eyeball B) Name the muscle of eye ball C) Name the part and give its function (Eye model - lateral rectus, superior oblique, optic nerve)

9 – A) name the gland that secretes tears tarsal/lacrimal/ciliary B-C)name 4 bones that form orbit

10 – Name the part and give 1 function of A, B and C (Eye model - A-ciliary body, B-iris, C-lens)

11 – A) Name the model B) name the neurotransmitter secreted C) give one feature of post-synaptic membrane (Synapse Model, acetylcholine, receptors for acetylcholine)

12 – A) Name the part B) name the sensory structure present in it C) Give its function (Cochlea model)

13 – A) Name the part B) name the sensory structure present in it C) Give its function (Ear model – Vestibule)

14 – A) Name the part B) name the sensory structure present in it C) Give its function (Ear model - Semicircular canal)

15 – Name the part and give its function of A, B, and C

16 – Name 3 endocrine glands associated with brain

17 – Name the part and give 1 function of A, B and C (Heart model – A, right atrium B-pulmonary trunk C-chordae tendinae)

18 – Name the valves A and B (Heart model – bicuspid, pulmonary semi-lunar)

19 – A)Name the chamber of heart that sends blood to pulmonary circuit B) name the chamber of heart that receive blood from pulmonary circuit.

20 – A)Name the chamber of heart that sends blood to systemic circuit B) name the chamber of heart that receive blood from systemic circuit.

21- A) Name the condition of too few RBC or of RBC with hemoglobin deficiency = blood delivers less oxygen B)Name your blood group if it clumped with both anti-A and anti-B sera

22 – A) Name the endocrine gland found close to kidneys. B) Name a hormone secreted by it that gives fight or flight response.

23 – High pitch sounds stimulate basilar membrane -------- oval window and low pitch sounds stimulate basilar membrane -------- from oval window.

24 – Slowly developing blindness due to clouding of lens is ---------- but a fast developing blindness due to increased aqueous pressure is --------------.

25 – A) Name the neuron that receive light 1st of all rods-cone cells / ganglion cells / bipolarcells B) Stapes passes sound energy to round window / oval window / tympanum

26) Ciliary body muscles ---------- suspensorial ligament --------- lens is thick to focus on near objects.

27) ----------- is the main relay switch of brain and is part of ------------ in fore brain.

28) A) Name the cells stimulated during dim light and give B/W images. B)Name the cells stimulated during bright light and give colored images
29 - A) Name sound of heart due to closure of AV valve. B) Name the sound of heart caused due to closure of semi-lunar valves

Lab Exam 4

1. A) ------- depend on the respiratory and muscular pumps to transport blood
   B) -------artery is generally used to take the pulse at wrist.
   C) -------arteries supply the myocardium.

2. A)----------arterial system has one of these; and venous system has 2
   B) -------supplies most of the small intestine.
   C) -------an arterial trunk that has 3 branches that run to liver, spleen, and stomach.

3. Name the parts A, B, C and write 1 character or function.

4. Name the parts A, B, C and write 1 character or function.

5. A)----------is a convoluted bone, increases air turbulence in nasal cavity.
   B) -------is the site from which air enters pulmonary blood.
   C) -------is serous membrane lining lungs.

6. Name the parts A, B, C and write 1 character or function.
   D) Only -------in alimentary canal, has oblique muscles besides circular and longitudinal smooth muscle fibers.

7. Name the parts A, B, C and write 1 character or function.

8. A)---------suspends intestine from the posterior body wall
   B) ---------large collections of lymphoid tissue found in the submucosa of small intestine.
   C) ---------is the principal site for synthesis of vitamin B and K by bacteria.
   D) ---------are surface projections of an intestinal cell.

9. Pick a gland from duodenal glands, gastric glands, liver, pancreas and salivary glands
   A) -----contains starch digesting enzyme amylase and digestion starts in mouth.
   B) -------produces HCl and pepsinogen.
   C) ----- produces a whole spectrum of enzymes and released into duodenum
   D) ---- no enzymes present in this secretion; but needed for digestion and absorption of fats.

10. Relate parts to their function: kidney, ureters, urethra, bladder.
    A) --- shorter In women than in men.
    B) ------ transports urine to urinary bladder.
    C) ----serves as a storage for urine
D) ---------produces urine.

11. A) ---------site of filtration.
   B) ---------primary site of tubular reabsorption.
   C) ---------conveys the processed filtrate (urine) to the medullary pyramid.

12. List 3 nitrogenous wastes that are routinely excreted in urine.

13. Name the parts A, B, C and write 1 character or function.

14. A) ---------covers nasopharynx during swallowing of food.
   B) ---------is the gap between vocal cords.
   C) ---------separates oral cavity from nasal cavity.

15. Name the parts A, B, C and write 1 character or function.

16. A) ---------is exchange of gases between blood and tissues.
   B) ---------is exchange of gases between blood and alveoli.
   C) ---------filling of lungs with air.
   D) ---------is a disease of lungs.

17. Name the parts A, B, C and write 1 character or function.

18. A) Name the part of alimentary canal that do not absorb or secrete, is covered by adventitia.
   B) Digestion of proteins starts in --------------.
   C) Main site of digestion and absorption is ---------.

19. Name the parts A, B, C and write 1 character or function.

20. A) Protein are digested into ---------  ---------.
    B) Starch is digested into --------------.
    C) Fats are digested into ---------- and --------------.

21. Name the parts A, B, C and write 1 character or function.

22. A) ---------is readily absorbed in stomach.
    B) ---------is a protein and acts as biologic catalyst.
    C) ---------is the mobile organ that initiates swallowing of food.

23. 70% of CO₂ travels as -----------, 23% as ------------- and 7% as ------------    -------------.

**Key Lab Exam 4**

1. A – veins       B) radial       C) coronary
2.  A – brachiocephalic  B) superior mesenteric  C) Celiac trunk
3.  Model Larynx  A) Thyroid  B) Epiglottis  C) vocal cords  D) Arytenoid
4.  Model Respiratory System  A) Left bronchus B) right bronchus C) Diaphragm
5.  A) concha  B) alveoli  C) pleura
6.  Model Intestine  A) serosa  B) mucosa  C) submucosa  D) stomach
7.  Model Pancreas  A) gall bladder  B) Pancreas  C) duodenum
8.  A) mesentery  B) Peyer’s patches  C) large intestine = colon  D) microvilli
9.  A) salivary gland  B) gastric gland C) pancreatic gland  D) liver
10.  A) urethra  B) ureters  C) bladder  D) kidney
11.  A) glomerulus  B)PCT  C) collecting duct
12.  Urea, Uric acid, Creatinine
13.  Model Renal Lobule  A) renal corpuscle  B) PCT  C) Loop of Henle
14.  A) uvula  B) glottis  C) palate
15.  Model Urinary System  A) medulla / pyramid  B) pelvis  C) ureters
16.  A) internal respiration  B) External respiration  C) inspiration D) asthma/emphysema
17.  Model Urinary System  A) bladder  B) urethra  C) uterus
18.  A) esophagus  B) stomach  C) small intestine
19.  Model Pancreas  A) pancreatic duct  B) common bile duct  C) cystic duct
20.  A) amino acids  B) glucose  C) monoglycerides and fatty acids
21.  Model Respiratory System  A) left lung  B) right lung  C) trachea
22.  A) alcohol or aspirin  B) enzyme  C) tongue
23.  Bicarbonate, Carbaminohemoglobin, physically dissolved.