Worksheet - Simple Organs - Membranes

1. Membranes cover the body and organs and line the body cavities and organs (cover and line). Based upon this information, which of the four types of tissue would you expect to be involved in membrane formation? **Epithelial**

2. An organ, by definition, is composed of two or more kinds of tissue. If a membrane is only composed of two kinds of tissue, than in addition to your answer to #1., the second tissue would most likely be which of the four types and why?
   a) Type: **Connective**
   b) Why: **Support for Epithelial Layer**

3. Serous membranes
   a) Identify the specific kinds of tissue found in the two layers of a serous membrane. **Simple Squamous, Areolar**
   b) What is the function of the epithelial layer? **Secretion of serous fluid**
   c) What is the name given to the connective tissue layer? **Subserous Fascia**
   d) Name and locate the three primary serous membranes in the body.
      1) **Pericardium - Heart**
      2) **Pleura - Lungs**
      3) **Peritoneum - Abdominal Cavity**
   e) What do the locations of these three serous membranes have in common? **All in closed cavities and cover internal organs**
   f) A serous membrane folds upon itself, creating a double layered structure with a fluid fulled space between. Distinguish between the visceral and the parietal portion of this folded serous membrane. **Visceral covers the organs while parietal is outer layer.**
   g) A primary function of epithelial cells is protection. Serous membranes are, in part, composed of epithelial cells. Against what are serous membranes providing protection? **Friction**
4. Mucous membranes

a) List, in order, the kind of tissue found in each of the four layers of a mucous membrane. If a layer has a special name, provide that name.

1) Epithelium
2) Basement Membrane (Reticular C.T.)
3) Lamina Propria (Areolar C.T.)
4) Muscularis Mucosa (Smooth Muscle)

b) List four tracts of the body that would be lined with a mucous membrane.

Respiratory, Digestive, Urinary, Reproductive

c) The epithelial surface layer of a mucous membrane varies depending upon the tract and where in the tract the epithelium is found. For each of the following epithelium indicate where the mucous membrane having this epithelium would be found (indicate the tract and, if applicable, where in the tract).

1) stratified squamous (several answers) Openings and Exits of all tracts
2) pseudostratified ciliated epithelium lines most of respiratory
3) simple columnar lines Digestive and some of female reproductive

d) The epithelial layer of mucous membranes contains specialized epithelial cells called goblet cells. What is the function of goblet cells?

Secrete mucous

e) Remembering that epithelial cells often serve a protective function, what form of protection do mucous membranes provide in each of the following areas:

1) respiratory tract Capture particles
2) digestive tract (two answers) Lubrication and absorption

5. Synovial membranes

a) Where are synovial membranes found? Synovial (freely movable) joints
b) Although not composed of epithelial cells, the modified connective tissue cells found in synovial membranes form a membrane that functions much like mucous and serous membranes. In what two ways does a synovial membrane function like a mucous or serous membrane?

- **Lines**
- Secretes a lubricating fluid

6. Cutaneous membrane (integument/skin)

a) The epidermis is composed of what kind of tissue; and of what kind and arrangement of cells?

- Epithelial, Stratified squamous

b) The kind and arrangement of cells in the epidermis should suggest the function of the epidermis. The function of the epidermis is:

- Protection

c) stratum germinativum; stratum spinosum; stratum granulosum; stratum lucidum; stratum corneum

1) Which layer of the epidermis is mitotic and generates a continuous supply of cells for the epidermis?

- Germinativum

2) Which layer contains the pigment producing melanocytes?

- Germinativum

3) Which layer contains the large white blood cells, Langerhans cells, that help protect us from microbial invasion through our skin?

- Spinosum

4) Which stratum consists of many layers of dead, keratinized cells that microbes find hard to penetrate?

- Corneum

d) What kind of tissue forms the dermis?

- 20% Adipose, 80% Dense Irregular

e) Given the kind of tissue found in the dermis, give two functions of this layer.

- Strength, Support

g) The skin is supported by which fascia?

- Superficial fascia

h) What kind of connective tissue do you find in this fascia?

- Adipose, Adipose

i) Other than support, what would be a function of this fascia?

- Connects skin to underlying layer