



Histology Self-Assessment Examination – Answer key Second Year Medical Students

Section A

1	a	b	c	d	e	21	a	b	c	d	e
2	a	b	c	d	e	22	a	b	c	d	e
3	a	b	c	d	e	23	a	b	c	d	e
4	a	b	c	d	e	24	a	b	c	d	e
5	a	b	c	d	e	25	a	b	c	d	e
6	a	b	c	d	e	26	a	b	c	d	e
7	a	b	c	d	e	27	a	b	c	d	e
8	a	b	c	d	e	28	a	b	c	d	e
9	a	b	c	d	e	29	a	b	c	d	e
10	a	b	c	d	e	30	a	b	c	d	e
11	a	b	c	d	e	31	a	b	c	d	e
12	a	b	c	d	e	32	a	b	c	d	e
13	a	b	c	d	e	33	a	b	c	d	e
14	a	b	c	d	e	34	a	b	c	d	e
15	a	b	c	d	e	35	a	b	c	d	e
16	a	b	c	d	e	36	a	b	c	d	e
17	a	b	c	d	e	37	a	b	c	d	e
18	a	b	c	d	e	38	a	b	c	d	e
19	a	b	c	d	e	39	a	b	c	d	e
20	a	b	c	d	e	40	a	b	c	d	e

Section B: Give Reason

a) The number of goblet cells gradually decreases along the respiratory passages downwards.

- Goblet cells secrete mucus to clean and trap foreign bodies. Their functional necessity decreases downwards in the respiratory passages. Their mucus secretion might block the small respiratory bronchioles and alveoli. That's why they disappear gradually downwards in the respiratory system.

b) The mucosa of the stomach is not affected by gastric acidity.

- The gastric epithelium creates an alkaline mucus barrier which acts as a powerful hydrophobic protective gel against gastric acidity and enzymes.
- The HCl secreted by the parietal cells in the gastric glands crosses this barrier in finger-like channels, leaving the rest of the gel layer intact.
- The cells secrete protective bicarbonate ions directly into the deeper layers of the surface mucous coat. Prostaglandins stimulate mucus secretion which protects the gastric mucosa.
- Additionally, the gastric epithelium cells are also tightly bound together by tight junctions.
- Some of the resistance of the mucosa is also provided by trefoil peptides.

c) The marked basophilia of the pancreatic acini.

The pancreatic acinar cells are typical protein synthesizing cells. This means that they are rich in ribosomes and rough endoplasmic reticulum. These organelles contain rRNA which reacts with hematoxylin giving the cells a bluish appearance after H&E staining.

d) Presence of hypophyseal portal circulation in the pituitary gland.

The hypothalamo-hypophyseal portal system is of vital importance because it carries neuropeptides from the median eminence to the adenohypophysis where they either stimulate or inhibit hormone release by the endocrine cells there.

Section C:

a) Compare between the trachea and the intrapulmonary bronchus.

	Trachea	Intrapulmonary bronchus
<i>Lumen</i>	Wider	Narrower
<i>Epithelium</i>	Respiratory epithelium	Respiratory epithelium
<i>Mucosal Folds</i>	Only posterior	Many irregular folds
<i>Cartilage</i>	Single C-shaped	Irregular plates
<i>Wall</i>	Flattened posteriorly	Circular
<i>Submucosa</i>	Present	Absent
<i>Mucous glands</i>	In the submucosa	In-between the cartilage plates
<i>Lymph nodules</i>	Absent	Present
<i>Goblet cells</i>	More frequent	Less frequent

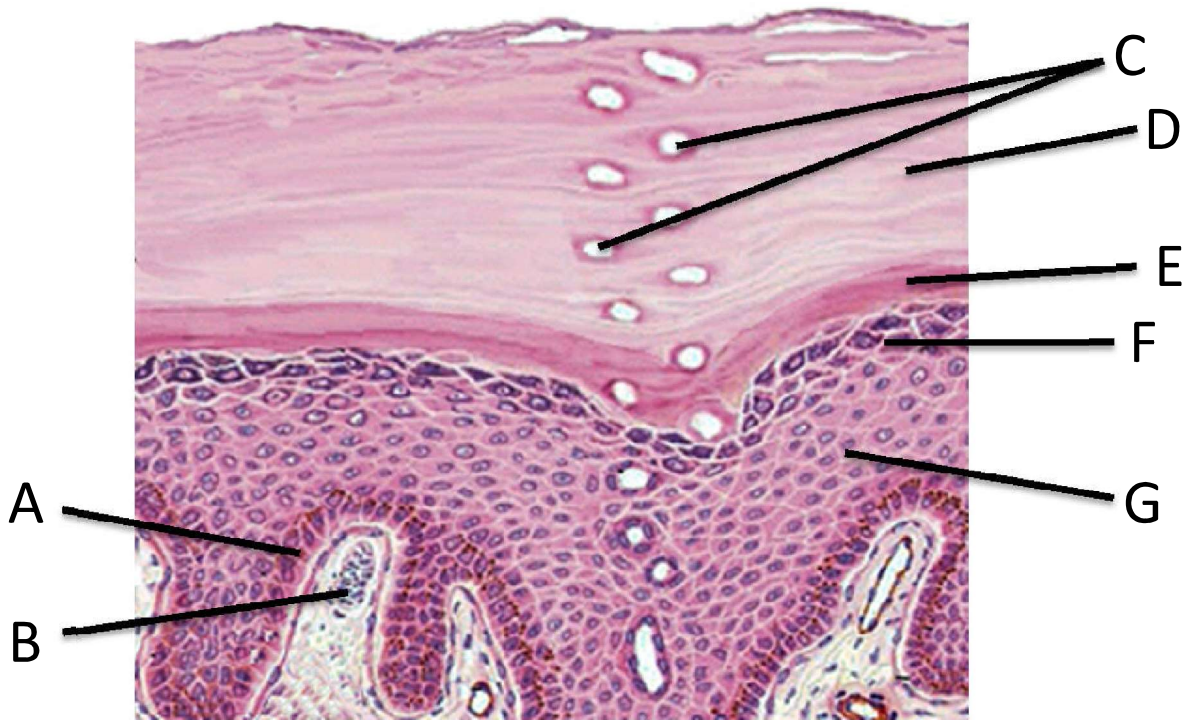
b) Compare between the esophagus and vagina.

	Esophagus	Vagina
<i>Luminal Folding</i>	Longitudinal	Transverse
<i>Mucosa</i>	No glycogen	Rich in glycogen
<i>Submucosa</i>	Present	Absent
<i>Muscularis mucosa</i>	Present	Absent
<i>Glands</i>	Present	Absent
<i>Musculosa</i>	Well segregated inner circular & outer longitudinal layers	Less segregated inner circular & outer longitudinal layers

Section D:

Diagram A:

Section in thick skin



A: Stratum basale.

B: Meissner corpuscle in the dermal papilla.

C: Duct of sweat gland.

D: Stratum corneum.

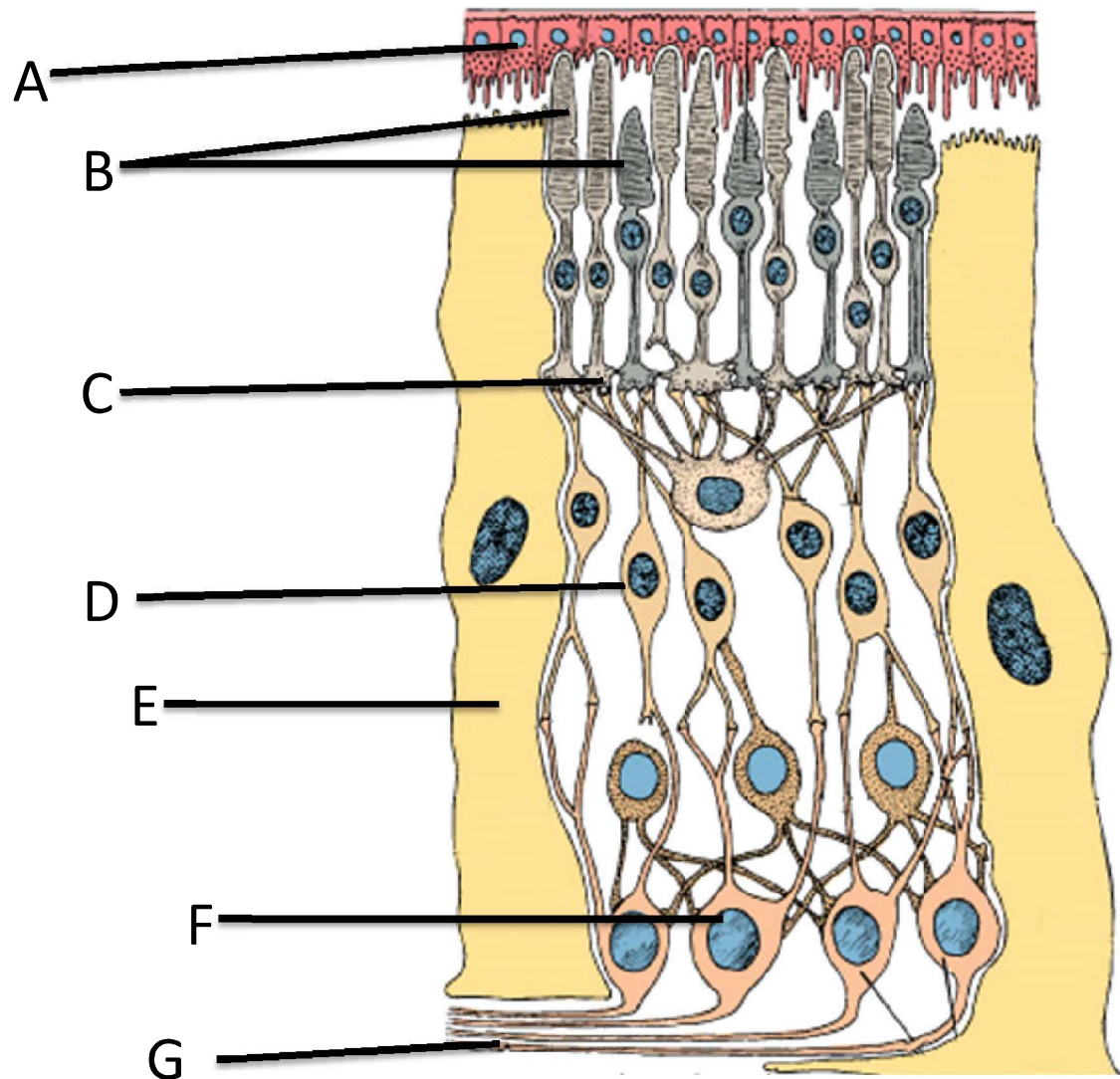
E: Stratum lucidum.

F: Stratum granulosum.

G: Stratum spinosum.

Diagram B:

Diagram of the retina



A: Pigmented columnar epithelium.

B: Rods & Cones.

C: Outer plexiform layer.

D: Inner nuclear layer.

E: Müller cells.

F: Ganglion cell layer.

G: Optic nerve fibers.