**MATRIC NUMBER: 16/MHS06/055**

COURSE CODE: MLS 408

COURSE TITILE: HISTOPATHOLOGY TECHNIQUES AND MUSEUM.

QUESTION;

In a tabular form only, compare and contrast sections of the gastrointestinal tract.

Answer

**Differences**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Properties | Oral cavity | esophagus | stomach | Small intestine | Large intestine | anus |
| Lining  | It is lined primarily by mucosa with non-keratinized stratified squamous epithelium, with keratinized stratified squamous epithelium on the hard plate and gingiva | The esophagus mucosa has non-keratinized stratified squamous epithelium. Its muscularis is striated at its superior end with smooth muscles at the inferior end, with mixed fiber types in the middle. | It is lined by simple columnar epithelium. | It is lined by Simple columnar epithelium | It is lined by simple columnar epithelium | At the anal canal the simple columnar epithelium lining the rectum shifts abruptly to stratified squamous epithelium of the skin at the anus. The anal canal mucosa is cuboidal in the transitional zone and columnar above it. |
| Regions | The oral cavity contains the tongue and teeth. The dorsal surface mucosa of the tongue has projecting lingual papillae of 4 types; filiform papillae with keratinized epithelium and non-keratinized foliate, fungiform and large vallate papillae. | It is divided into proximal 2/3 which contains smooth muscles and distal 1/3 which contains skeletal muscle | It has 4 regions which are the superior cardia and inferior pylorus, the intervening fundus and body | It has 3 regions which are; duodenum with large mucous glands in the submucosa called duodenum glands, the jejunum and ileum with the large mucosal and submucosal peyer patches  | It has 3 regions: the cecum with the appendix, the long colon with its ascending, transverse, descending and sigmoid portion and rectum | It has only 1 part which is the anus |
| GLANDS | Salivary glands which is produced by the endocrine gland of the mouth. | Submucosa contains small mucus secreting glands, the esophageal glands(which lubricate and protect the mucosa and esophageal cardiac glands which is found in the mucosa near the stomach which secrete additional mucus. | Gastric glands, esophageal cardiac gland, pyloric gland. | Intestinal glands(mucous glands, duodenal glands). | The mucosa is occupied mostly by tubular Intestinal glands extending as deep as the muscularis mucosae and by lamina propria. | It has no gland |
| Cells | Nucleated cells non-keratinized cells, gustatory cells, supportive cells, basal stem cells | Stem cells, supportive cells | Surface mucous cells, stem cells, mucous neck cells, parietal cells, chief cells, enteroendocrine cells | Stem cells, paneth cells, absorptive cells(enterocytes) with scattered goblet cells, enteroendocrine cells. | Goblet cells, absorptive cells | Enteroendocrine cells, goblet cells |
| Measurement | It has no specific measurement because of the present of elastic fibers which helps in the expulsion and constriction  | 25cm long in adults which transports swallowed material from the pharynx to the stomach  | Cardia is 1.5-3cm wide between the esophagus and the stomach, the pylorus is funnel shaped region opens to the small intestine | 5m long | 6-7cm in diameter. It is less than 1/3 as long as the small intestine. | 2.5-4cm in length  |
| Villi  | No villi | No villi | Villi is present | microvilli is present | No villi | No villi |
| Muscle | Striated muscle | Striated muscle, smooth muscle | Smooth muscle | Smooth muscle in the inner circular layer and outer longitudinal layer of the muscularis | The muscularis of the colon has its outer longitudinal layer subdivided into 3 bands of Smooth muscle called teniae coli | The inner anus possesses a thick ring of smooth muscle while the outer is controlled by Striated muscle |
| Folds/pit | Maxillary and mandibular folds | A long longitudinal folds from the mucosa and submucosa is formed | Gastric folds (longitudinal folds) and gastric pit is present | Crescent shaped folds of the mucosa and submucosa | It has no major fold except in the rectum | Small mucosa folds between the anal columns from the pectinate line. |
| Crypt | Crypts is present | Crypts containing stem cells for ongoing replenishment of epithelium | Crypts is present in the stomach which is used for absorption. | Crypt of lieberkuhn is found between the intestinal villi | Crypt of lieberkuhn is present which is longer and straighter than those of the small intestine. | Crypts is present |
|  |  |  |  |  |  |  |

**SIMILARITIES**

1. The digestive tract has 4 layers which are mucosa, submucosa, muscularis propria and adventitia.
2. They all have glands
3. They all possess crypts
4. They all have folds
5. They are lined by epithelial cells
6. They all aid in food digestion process.