**Q1/ Fill the blanks with suitable words 15 Marks**

1. The cytoplasm of muscle cells is called **…………** and the smooth ER is called **……………..**
2. The heart is covered externally by **……………………………** supported by a thin layer of connective tissue that constitutes the **……………………….**
3. Cardiac muscle cells contain numerous mitochondria, which occupy **…………….** or more of the cytoplasmic volume, reflecting the need for continuous aerobic metabolism in heart muscle. By comparison, only about **………….** of skeletal muscle fiber is occupied by mitochondria.
4. In the embryo, the liver develops as **……………** evagination from the wall of the **…………...**
5. The smallest arteries branch as **……….**, which have one or two smooth muscle layers and indicate the beginning of an organ's **…………………** where exchanges between blood and tissue fluid occur.
6. The large intestine is well suited to its main functions: **……………, ……………………, and ……………………………...**
7. The oral cavity is lined with **……………………………………..**
8. At the pylorus, the middle layer is greatly thickened to form the **………………………………..**

**Q2/ Put true or false across following sentences, correct the false one regarding under line words 15 Marks**

1. A rudimentary sarcoplasmic reticulum is present in smooth muscle cells, but T tubules are not.
2. Between the axon and the muscle is a space, the gap junction**,** in which lies an amorphous basal lamina matrix from the muscle fiber.
3. Within the liver, the distributing branches of the portal vein and hepatic artery, which supply the sinusoidal capillaries.
4. The appendix is an evagination of the rectum, It is characterized by a relatively small and irregular lumen, shorter and less dense tubular glands.
5. Between the villi are small openings of short tubular glands called Brunner gland.
6. The crown is covered by the extremely hard enamel and the roots by a bone-like tissue called cementum**.**
7. Fungiform papillae are poorly developed in adults, but consist of parallel ridges and furrows on the sides of the tongue, with taste buds.
8. The mucosa contains denser connective tissue with many blood and lymph vessels and the submucosal plexus of autonomic nerves.
9. The continuous capillary allows regulated exchange of material and is characterized by the distinct continuity of the endothelial cells in its wall.
10. Chemoreceptors detect alterations in oxygen, carbon dioxide tension, and pH.
11. Endothelial cells, especially those of vein, contain unique very small, elongated vesicles called Weibel-Palade bodies, which involved in blood coagulation.
12. In arteries, the intima is separated from the media by an internal elastic lamina**,** the most external component of the intima.
13. The liver produces small amounts of other plasma lipoproteins, such as low-density lipoproteins (LDLs) and high-density lipoproteins (HDLs).
14. Each endocrine acinus of the pancreas is composed of several serous cells surrounding a very small lumen.
15. Arteriovenous fistulas usually occur in the legs, but can develop anywhere in the body.

**Q/ Draw and label the following: 20 Marks**

1. Diagram of longitudinal section of tongue (determine the location of each type of papilaries)

2. Elastic artery

3. Neuromuscular junction

4. L. S. of teeth

5. Formation of skeletal muscle from myoblast

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