Q.P.Code 33996

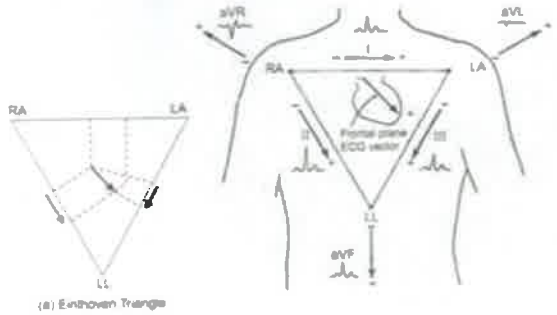
80 marks
Duration 3 hours
Solution

01

Q.1 Solve any four questions out of five questions.

a. Explain Eithoven's triangle and Eithoven's theorem.
Drawing of Eithoven's Triangle [03]
Explanation of Eithoven's Theorem [02]

Einthoven Triangle



(a) Einthoven Triangle

The vector sum of the frontal plane Cardiac Vector at any instant onto the three axes of the Einthoven Triangle will be zero.

- Lead 1: Potential between the Right Arm (RA) and the Left Arm (LA)
- Lead 2: Potential between the Right Arm and the Left Leg
- Lead 3: Potential between the Left Arm and the Left Leg

b. Explain the structure of an eye.
-Diagram showing section of an eye [02]
-Explanation of the diagram [03]

c. Explain the structure of neuron.
-Diagram showing cell body ,axons and dendrites [02]
-Explanation about the diagram[03]

d. Write a note on blood groups.
-Explanation of ABO system [03]
-Explanation of the Rhesus system [02]

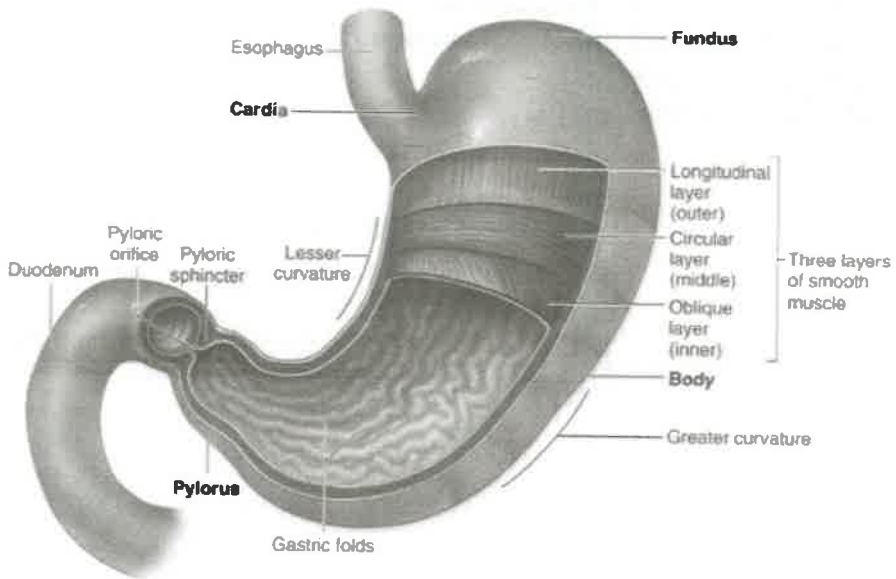
e. State the accessory organs of the digestive system and their functions.
-Explanation and functions of following accessory organs: [05]
Pancreas,liver, biliary tract, 3 pairs of salivary glands (parotid, submandibular, sublingual)

Q2. a. Explain the process of urine formation and mention the composition of urine.
-Diagram of glomerulus and glomerular capsule [02]
-Pressure values(glomerular hydrostatic pressure, blood osmotic pressure and capsular hydrostatic pressure)[02]
-Explanation of filtration, selective reabsorption and tubular secretion[03]
- Composition of urine[03]

02

Q2. b.Explain the structure and functions of the stomach.

Structure of stomach diagram[03] and explanation[03]



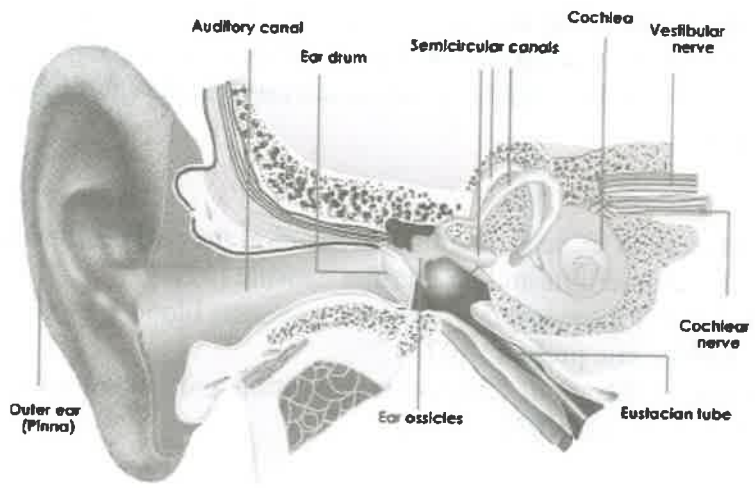
Functions of stomach[04]

-Temporary storage of food, chemical digestion,mechanical breakdown of food, limited absorption of water, alcohol and some lipid soluble drugs, non-specific defense against microbes, preparation of iron salts for further absorption, production and secretion of intrinsic factor required for absorption of vitamin B12, Passage of gastric contents into the duodenum, secretion of the hormone gastrin.

Q.3.a List all endocrine glands, their hormones and the functions of those hormones.

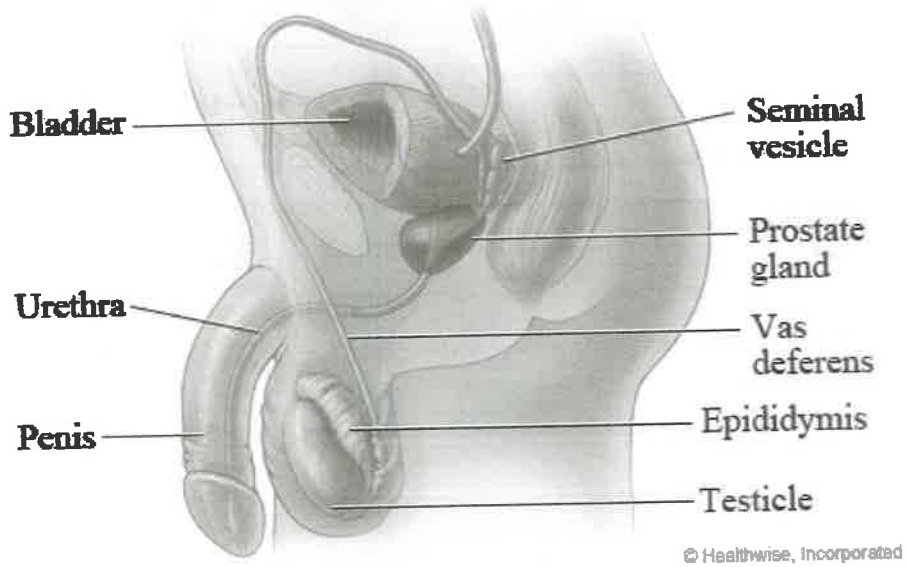
Hormones and functions of those hormones secreted by following endocrine glands: Pituitary gland, hypothalamus, thyroid gland, parathyroid glands, adrenal glands, pancreatic islets, pineal gland, thymus gland. [10]

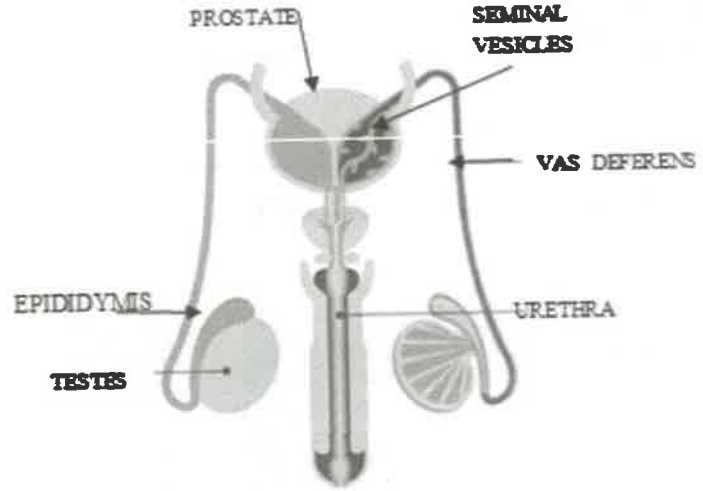
Q3.b.Explain the structure of an ear.



Structure of ear diagram [04]
Structure of ear explanation [06]

Q.4 a Explain the different organs in the male reproductive system and state their functions.





Male reproductive system diagram[03]
Male reproductive system explanation [03]
Functions of every organ [04]

Q4.b.Explain the structure of respiratory system and functions of each organ.
Structure of respiratory system
- Diagram[03]
- Explanation[03]

Functions of each organ [04]

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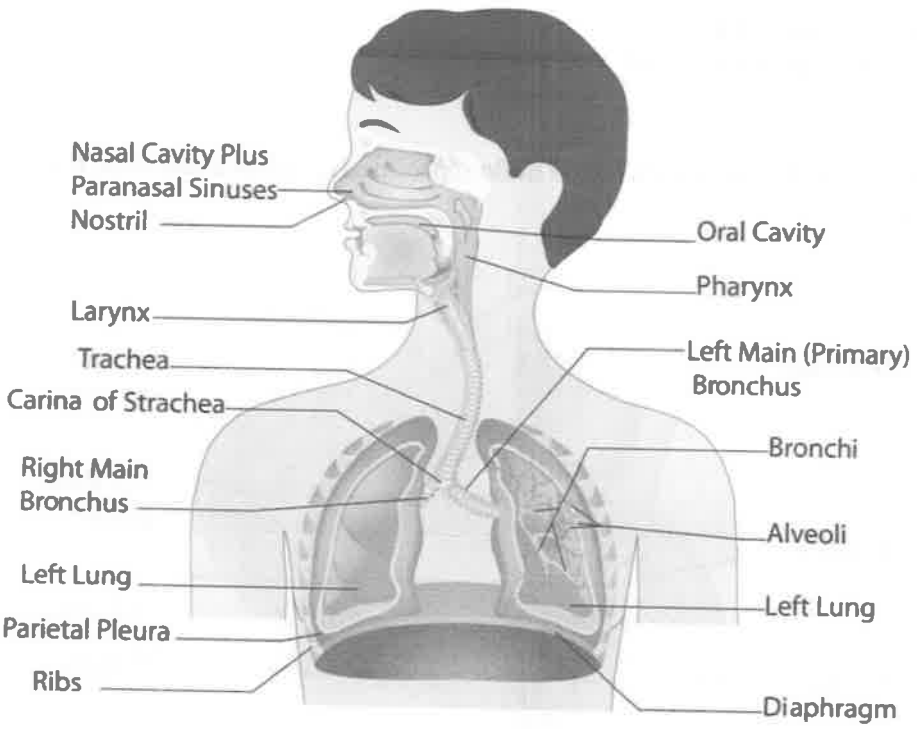
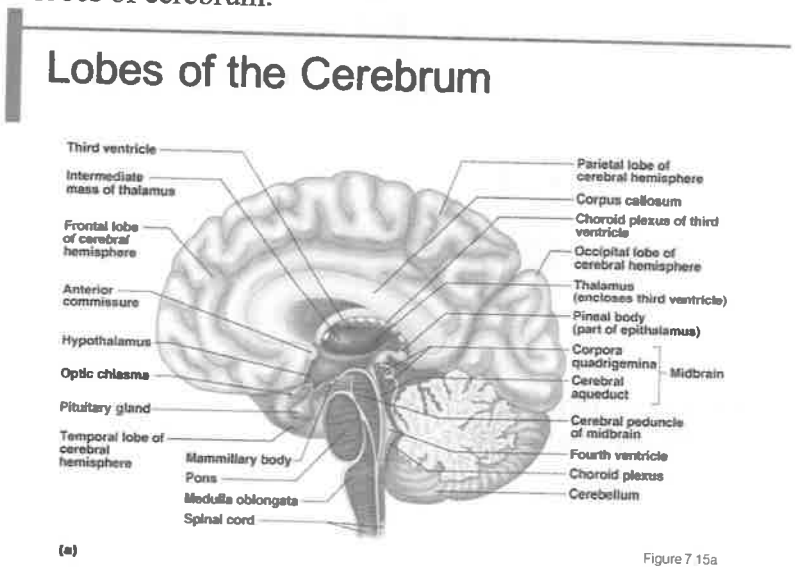


Q.5 a. Explain the conduction system of the heart.

- Explanation and diagram of flow of blood through the heart [04]
- Diagram showing natural pacemakers of the heart (SA node, AV node, purkinje fibers and bundle of HIS) [03]
- Explanation and functions of each natural pacemaker of heart.[03]

Q5.b. Explain the lobes of cerebrum.



-Lobes of cerebrum diagram [04]
-Lobes of cerebrum explanation [06]

05

Q.6. Write short notes on any four of the following:

a. Reflex Arc

Diagram of reflex arc [02]
Explanation about reflex arc[03]

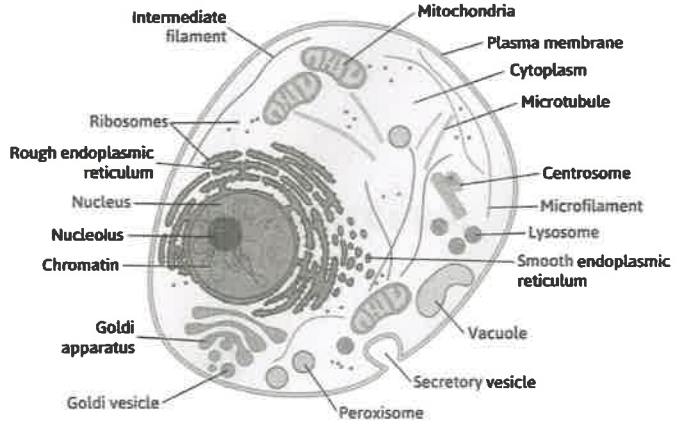
b. Homeostasis and the positive and negative feedback mechanism

-Definition of homeostasis with examples [01]
-Positive feedback mechanism[02]
-diagram
-explanation
-Negative feedback mechanism[02]
-diagram
-explanation

c. Functions of CSF (Cerebro Spinal Fluid) [05]

-As a support and protection to brain and spinal cord
-Acts as a shock absorber between the brain and the skull
-Keeps the brain and spinal cord moist
-Exchange of nutrients and waste products between CSF and nerve cells
-Helps in regulation of breathing

d. Structure of a cell and functions of its organelles



Structure of a cell diagram [02]
Structure of a cell explanation [03]

e. Exchange of gases in lungs

-Diagram showing the lower respiratory tract and its explanation[01]
-Diagram showing the alveoli and their capillary network and a diagram of a section through an alveolus [02]
-Explanation of the above diagram [02]