SURA'S

BIO-ZOOLOGY & ZOOLOGY

(Short version and Long version)

11th Standard

Based on the updated New Textbook

Salient Features

- Prepared as per the updated New Textbook.
- Exhaustive Additional MCQs (Questions, Match the following, Fill in the blanks, Choose the odd man out, Choose the incorrect/Correct pair, Assertion-Reason, Choose the correct or incorrect statement) are given in each chapter.
- Comprehensive Additional VSA, SA, LA, HOTS questions with answers are given in each chapter.
- All the diagrams are included and neatly labeled.
- Govt. Model Question Paper-2018, First Mid-Term Test, March-2019 , June-2019, Quarterly Exam - 2018,19 and Half yearly Exam - 2018, 19 Questions are incorporated at appropriate sections.
- **Govt. Model Question Paper** (Short version and Long version), **Quarterly Examination - 2019**, **Half yearly Examination - 2019**
- **Public Examination March 2020 Question Paper with Answers are given.**

SURA PUBLICATIONS
Chennai

www.Padasalai.Net

Padasalai Official – Android App – Download Here

படங்களை தொடுக! பாடசாலை வலைதளத்தை சமூக ஊடகங்களில் பின்தொடர்க!! உடனுக்குடன் புதிய செய்திகளை Notifications-ல் பெறுக!

Zoom Touch Below Links Download!

12th Standard	Syllabus	Books	Study Materials – EM	Study Materials - TM	Practical	Online Test (EM & TM)
	Monthly Q&A	Mid Term Q&A	Revision Q&A	PTA Book Q&A	Centum Questions	Creative Questions
	Quarterly Exam	Half Yearly Exam	Public Exam	NEET		

11th Standard	Syllabus	Books	Study Materials – EM	Study Materials - TM	Practical	Online Test (EM & TM)
	Monthly Q&A	Mid Term Q&A	Revision Q&A	Centum Questions	Creative Questions	
	Quarterly Exam	Half Yearly Exam	Public Exam	NEET		

10th Standard	Syllabus	Books	Study Materials - EM	Study Materials - TM	Practical	Online Test (EM & TM)
	Monthly Q&A	Mid Term Q&A	Revision Q&A	PTA Book Q&A	Centum Questions	Creative Questions
	Quarterly Exam	Half Yearly Exam	Public Exam	NTSE	SLAS	

9th Standard	Syllabus	Books	Study Materials	1st Mid Term	2nd Mid Term	3rd Mid Term
	Quarterly Exam	Half Yearly Exam	Annual Exam	RTE		

8th Standard	Syllabus	Books	Study Materials	1st Mid Term	2nd Mid Term	3rd Mid Term
	Term 1	Term 2	Term 3	Public Model Q&A	NMMS	Periodical Test

7th Standard	Syllabus	Books	Study Materials	1st Mid Term	2nd Mid Term	3rd Mid Term
	Term 1	Term 2	Term 3	Periodical Test	SLAS	

6th Standard	Syllabus	Books	Study Materials	1st Mid Term	2nd Mid Term	3rd Mid Term
	Term 1	Term 2	Term 3	Periodical Test	SLAS	

1st to 5th Standard	Syllabus	Books	Study Materials	Periodical Test	SLAS	
	Term 1	Term 2	Term 3	Public Model Q&A		

Exams	TET	TNPSC	PGTRB	Polytechnic	Police	Computer Instructor
	DEO	BEO	LAB Asst	NMMS	RTE	NTSE

Portal	Matrimony	Mutual Transfer	Job Portal

Volunteers	Centum Team	Creative Team	Key Answer Team

Downloads	LESSON PLAN	Department Exam	Income Tax	Forms & Proposals	Fonts	Downloads
	Proceedings	GO's	Regulation Orders	Pay Orders	Panel	

Padasalai – Official Android App – Download Here

Kindly Send Your Study Materials, Q&A to our Email ID – Padasalai.net@gmail.com

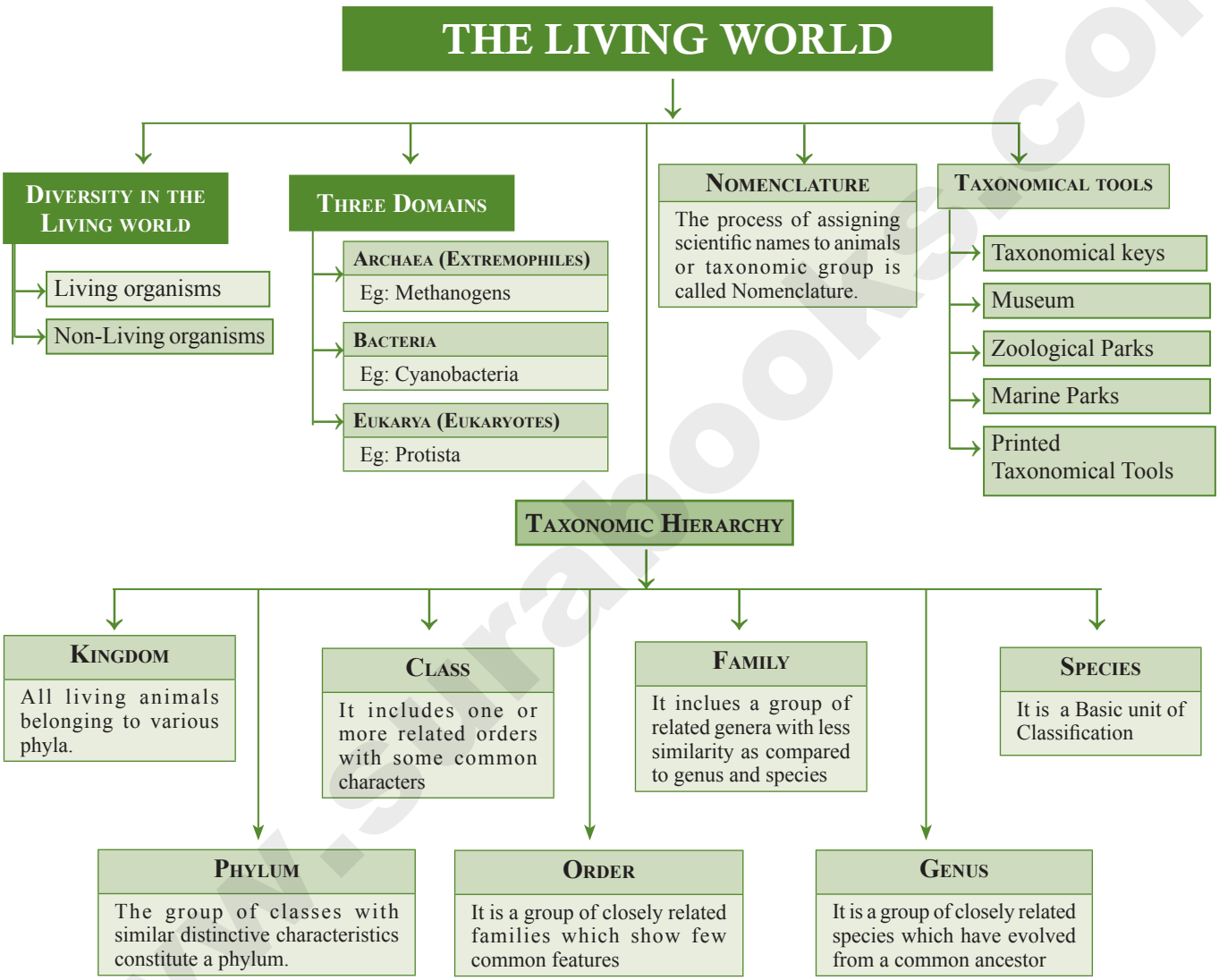
CONTENTS

Chapter 1

UNIT - I

THE LIVING WORLD

CHAPTER SNAPSHOT



VII. Identify the correct options for the parts of the diagram :

1. Identify the name of the sterile offsprings from the below diagram

(a) Mule (b) Liger
(c) Tigon (d) Hinny

[Ans. (d) Hinny]

2. Identify the correct option from the below about "Red panda".

(a) Monotypic genus
(b) Polytypic genus
(c) Sterle offspring
(d) Tautonymy **[Ans. (a) Monotypic genus]**

3. Identify the correct option from the below diagram.

(a) John Ray
(b) Carolus Linnaeus
(c) Dr. Subramaniam Bhupathy
(d) Walter Rosen

[Ans. (c) Dr. Subramaniam Bhupathy]

VIII. Identify the Correct pair from the below:

1.
(a) Monera - Eukaryotic
(b) Protista - Prokaryotic
(c) Fungi - Prokaryotic
(d) Plantae - Eukaryotic

[Ans. (d) Plantae - Eukaryotic]

2.
(a) Animalia - Heterotrophic
(b) Plantae - Heterotrophic
(c) Biodiversity - Aristotle
(d) Taxonomy - Walter Rosen

[Ans. (a) Animalia - Heterotrophic]

IX. Identify the Incorrect pair from the below:

1.
(a) Cytosol ribosomes - 80s type
(b) Chloroplast ribosomes - 70s type
(c) Curd - Probiotics
(d) Cyanobacteria - *Lactobacillus sp*

[Ans. (d) Cyanobacteria - *Lactobacillus sp*]

2.
(a) Polar ice caps - Extremophiles
(b) Domain Bacteria - Peptidoglycans
(c) Domain Eukaryo - True nucleus
(d) 3 domains of life - Cavalier-smith

[Ans. (d) 3 domains of life - Cavalier-smith]

X. Identify the Odd-man out from the below :

1. Identify the odd-man out from the below.

(a) Bacteria (b) Chromista
(c) Eukarya (d) Archaea

[Ans. (b) Chromista]

Reason: Chromista is in the "The Seven - Kingdom system". Others are included in the "The Six – Kingdom system".

2. Identify the odd-man out from the below.

(a) Mule (b) Liger
(c) Red Panda (d) Tigon

[Ans. (c) Red Panda]

Reason: Except Red Panda, all others are Sterile offsprings.

Very Short Answers 2 MARKS

1. What is Biodiversity?

Ans. 1. The presence of a large number of species in a particular ecosystem is called '**Biological diversity**' or in short '**Biodiversity**'.

2. The term Biodiversity was first introduced by Walter Rosen (1985), and defined by E.D. Wilson.

UNIT - I

Chapter 2

KINGDOM ANIMALIA

CHAPTER SNAPSHOT

2. One or few eggs are produced by the female since the mother has to undergo gestation period and nurture the young ones in her womb until they are born. Reproduction cycle requires more time.
3. But the embryo is protected from environmental conditions and predators. Chances of survival are very high.
4. Therefore the number of eggs / young ones in a viviparous animal will be less as compared to an oviparous animal.

GOVERNMENT EXAM QUESTIONS

Bio-Botany (Short version)

CHOOSE THE CORRECT ANSWERS 1 MARK

1. Which one of the following features are present in the phylum annelida? *[First Mid-2018]*

(a) Chitinous oxoskeleton
(b) Jointed appendages
(c) Parapodia
(d) Coxal glands

[Ans. (c) Parapodia]

2. Write the name of the animal in the given diagram. *[GMQP-2018]*

[Ans. Squid]

3. Find out the incorrect pair: *[QY-2018]*

(a) Ascaris - Round worm
(b) Wuchereria - Filarial worm
(c) Enterobius - Hook worm
(d) Taenia - Tape worm

[Ans. (c) Enterobius - Hook worm]

4. Match the following and choose the correct answer *[QY-2019]*

A	Ctenophora	i	Trochophore larva
B	Mollusca	ii	Planula larva
C	Cnidaria	iii	Cydippid larva
D	Annelida	iv	Veliger Larva

(a) A (iii), B (iv), C (ii), D (i)
(b) A (iv), B (iii), C (i), D (ii)
(c) A (i), B (iii), C (iv), D (ii)
(d) A (ii), B (iv), C (iii), D (i)

[Ans.(a) A (iii), B (iv), C (ii), D (i)]

VERY SHORT ANSWERS 2 MARKS

1. List two salient features of Hemichordata. *[Govt.MQP-2018]*

Ans. 1. The body is cylindrical and divided into three regions.
- ✦ Anterior probocis,
- ✦ Short collar,
- ✦ Long trunk.

2. Most Hemichordates are ciliary feeders.

2. Name the Larvae seen in phylum Platyhelminthes. *[First Mid-2018]*

Ans. *Taenia solium* (tape worm), *Fasciola hepatica* (liver fluke), *Schistosoma* (blood fluke).

3. Classify the animals based on the body cavity.

Ans. Acoelomate - Flatworms *[March-2019]*
1. Pseudocoelomate - Round worm
2. Eucoelom 1.Schizocoelomate - Annelids 2.Enterocoelomate - Echinoderms

4. Why did we call Ascaris as Pseudocoelomate? *[QY-2019]*

Ans. 1. In ascaris, the body cavity is not fully lined by the mesodermal epithelium, but the mesoderm is formed as scattered pouches between the ectoderm and endoderm.
2. Such a body cavity is called a pseudocoel and is filled with pseudocoelomic fluid.

SHORT ANSWERS 3 MARKS

1. List out the diagnostic features of phylum Ctenophora. *[Govt.MQP-2018]*

Ans. **Phylum: Ctenophora**

(G. Ktenos -comb; phoros -bearing)

Ctenophora are exclusively marine, radially symmetrical, diploblastic animals with tissue level of organisation. Though they are diploblastic, their

UNIT - II

Chapter 3

TISSUE LEVEL OF ORGANISATION

CHAPTER SNAPSHOT

(ii)

	Bone	Cartilage
1.	It is hard and inflexible.	It is comparatively soft and flexible.
2.	Bone cells called osteocytes are present in spaces called Lacunae.	Cells called chondrocytes are enclosed in small cavities within the matrix secreted by them.
3.	Bones provides structural frame to the body.	Cartilage is present in the tip of nose, outer ear joints, ear pinna, between adjacent bones of the vertebral column, limbs and hands in adults.

ADDITIONAL

Choose the Correct Answers 1 MARK

I. Choose the Correct options for the below Questions:

1. Which is a epithelial tissue disorder?
(a) Asthma (b) Rhabdomyo sarcoma
(c) Stickler syndrome (d) Leukemia
[Ans. (a) Asthma]

2. What is the name of the disease in which the person finds it difficult to remember recent events and has mood swings?
(a) Parkinson's disease
(b) Ehler's Danlos syndrome
(c) Alzheimer's disease
(d) Sjogren's syndrome
[Ans. (c) Alzheimer's disease]

3. Which is not a secretion of exocrine gland?
(a) Mucus (b) Saliva
(c) Earwax (d) Hormones
[Ans. (d) Hormones]

II. Choose the Correct options for the below Fill in the blanks:

1. The Goblet cells are modifications of _____
(a) Cuboidal epithelium
(b) Columnar epithelium
(c) Squamous epithelium
(d) Simple epithelium
[Ans. (b) Columnar epithelium]

2. Areolar connective tissue is called _____
(a) White fat (b) Brown fat
(c) Tissue fluid (d) Stroma
[Ans. (c) Tissue fluid]

3. _____ is a triple helix protein which allow for great tensile strength.
(a) Bone (b) Collagen
(c) Elastic fibre (d) Chondrocyte
[Ans. (b) Collagen]

4. Cuboidal epithelial cells occur in _____
(a) Villi (b) Kidney tubules
(c) Blood vessels (d) Glands
[Ans. (b) Kidney tubules]

III. Identify the correct Statements:

1. Identify the correct statements from the below.
(I) Animal tissues are classified according to the size, shape and function of the cells.
(II) Epithelial tissue is a sheet of cells.
(III) Columnar epithelium is composed of single layer of cube like cells.
(IV) Squamous epithelium is made of a single thin layer of flattened cells.
(a) I, II and III only (b) I and II only
(c) I, II and IV only (d) I and IV only
[Ans. (c) I, II and IV only]

2. Identify the correct statements from the below.
(I) Goblet cells secretes the protective lubricating mucus.
(II) Ciliated type propels mucus by ciliary actions.
(III) Nonciliated type lines only the bladder.
(IV) Pseudo-stratified epithelial cells are equal in size.
(a) I and II only (b) III and IV only
(c) I, II and III only (d) II and IV only
[Ans. (a) I and II only]

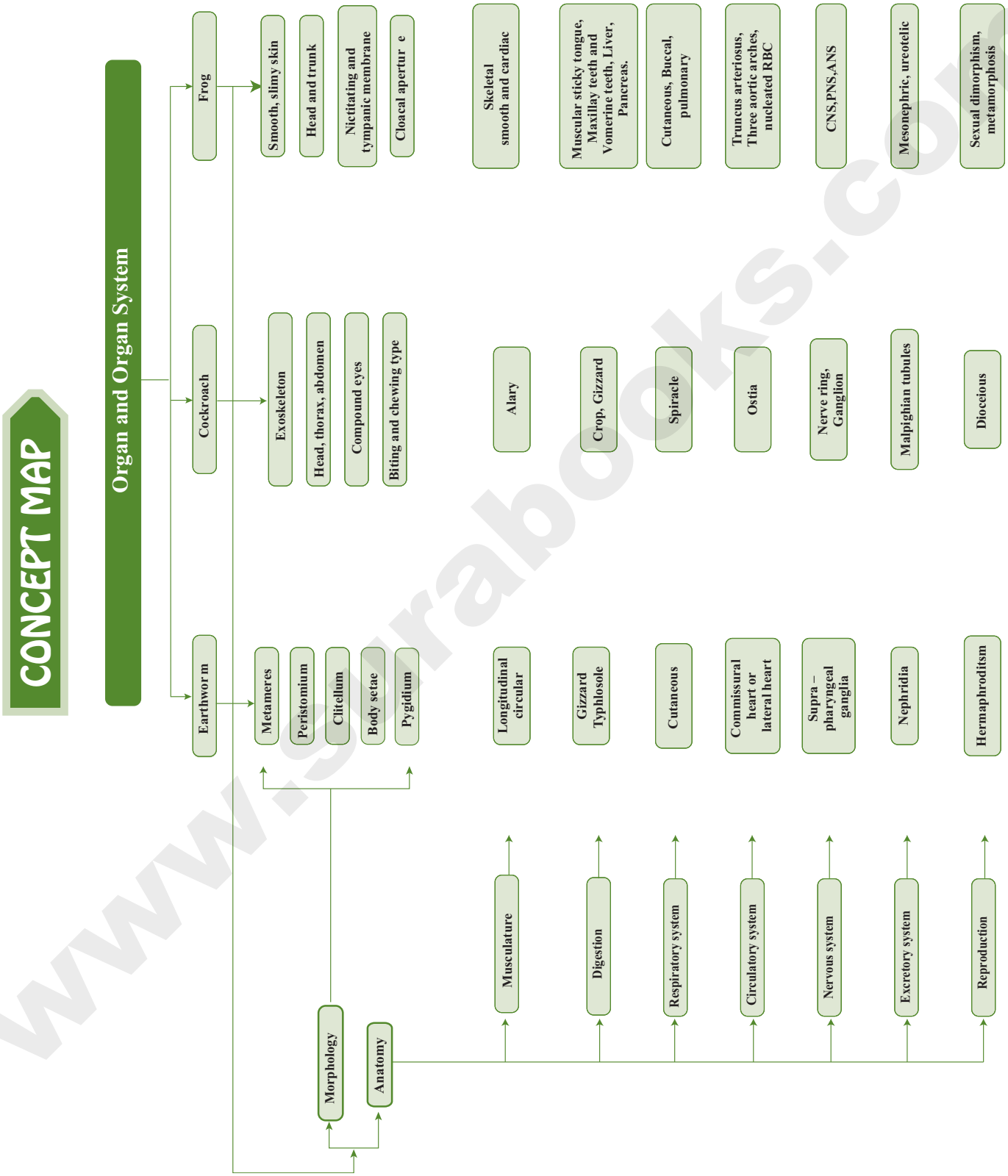
3. Identify the correct statements from the below about "Adipose tissue".
(I) Adipose tissue located beneath the skin.
(II) Adipocytes commonly called adipose or fat cells.
(III) Adipose tissue is called "White fat".
(IV) The cells of this tissue do not store fat.

UNIT - II

Chapter 4

ORGAN AND ORGAN SYSTEMS IN ANIMALS

CHAPTER SNAPSHOT



UNIT - III

Chapter 5

DIGESTION AND ABSORPTION

CHAPTER SNAPSHOT

VERY SHORT ANSWERS 2 MARKS

1. What is heterodont dentition?

Ans. In humans the permanent teeth are of four different types, namely, Incisors (I) chisel like cutting teeth, Canines (C) dagger shaped tearing teeth, Pre molars (PM) for grinding, and Molars (M) for grinding and crushing. This is described as heterodont dentition.

2. What is epiglottis and what does it do?

Ans. A cartilaginous flap called epiglottis prevents the entry of food into the glottis (opening of trachea) during swallowing.

3. Name the tissue in the small intestine which has a 'immune' function.

Ans. Lymphoid tissue known as Peyer's patches produce lymphocytes. They are found in the mucosa of the ileum.

4. What is succus entericus and name the enzymes present in it?

Ans. The secretions of the Brunner's gland along with the secretions of the intestinal glands constitute the intestinal juice or **succus entericus.** The enzymes in the intestinal juice such as *maltase, lactase, sucrase (invertase), dipeptidases, lipases, nucleosidases* act on the breakdown products of bile and pancreatic digestion.

5. What does GERD stand for? What is it commonly known as?

Ans. GERD - Gastro Oesophagus Reflex Disorder. It is commonly known as **Heart burn.**

6. Name the salivary glands.

Ans. There are three pairs of salivary glands in the mouth. They are the largest parotids gland in the cheeks, the sub-maxillary/sub-mandibular in the lower jaw and the sublingual beneath the tongue.

7. Name the endocrine part of the pancreas.

Ans. Islets of Langerhans form the endocrine part of the pancreas. They produce hormones called insulin and glucagon.

8. What is chyme?

Ans. Food remains in the stomach for 4 to 5 hours. The rhythmic peristaltic movement churns and mixes the food with gastric juice and makes it into a creamy liquid called **chyme.**

9. What is oral rehydration therapy?

Ans. Treatment for diarrhoea is known as **oral hydration therapy.** This involves drinking plenty of fluids-sipping small amounts of water at a time to rehydrate the body.

10. Name the bacteria which causes peptic ulcer.

Ans. *Helicobacter pylori.*

11. What is obesity?

Ans. It is caused due to the storage of excess of body fat in adipose tissue. It may induce hypertension, atherosclerotic heart disease and diabetes.

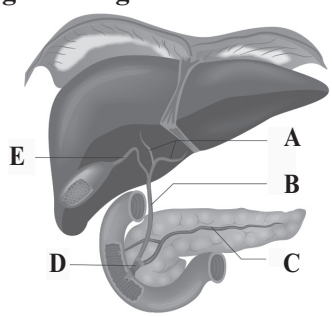
12. What is BMI?

Ans. Degree of obesity is assessed by **Body Mass Index (BMI).** A normal BMI range for adult is 19-25. Above 25 is considered as obese. BMI is calculated as body weight in Kg, divided by the square of body height in meters.

13. Define Thecodont and Diphyodont.

Ans. Each tooth is embedded in a socket in the jaw bone. This type of attachment is called **thecodont.** Human beings and many mammals form two sets of teeth during their life time. A set of 20 temporary milk teeth (deciduous teeth) which gets replaced by a set of 32 permanent teeth (adult teeth). This type of dentition is called **diphyodont.**

14. Label the given diagram.



Liver and Pancreas

Ans.
- **A.** Common hepatic duct
- **B.** Common bile duct
- **C.** Pancreatic duct (duct of Wirsung)
- **D.** Sphincter of Oddi
- **E.** Cystic duct.

UNIT - III

Chapter 6

RESPIRATION

CHAPTER SNAPSHOT

IV. Identify the wrong statements :

1. Identify the wrong statement from the below.

(a) Type I cells are very thicker.
(b) The lungs are light spongy tissues.
(c) The lungs are covered by double walled pleural membrane.
(d) Pleural fluid reduces friction when the lungs expand and contract.

[Ans. (a) Type I cells are very thicker.]

2. Identify the wrong statement from the below about "During inspiration".

(a) Diaphragm contracts
(b) Sternum is pulled downwards
(c) Volume of thoracic chamber increases
(d) External intercostal muscles contract

[Ans. (b) Sternum is pulled downwards]

3. Identify the wrong statement from the below

(a) Forceful expiration is an active process.
(b) Mammals have negative pressure breathing.
(c) Internal intercostal and abdominal muscles are muscles of forceful inspiration.
(d) Respiration excretes CO_2 water etc.

[Ans. (c) Internal intercostal and abdominal muscles are muscles of forceful inspiration]

4. Identify the wrong statement from the below

(a) Gaseous exchange continues in the lungs because some air remains inside the lungs even after deepest exhalation.
(b) The blood in the tissue capillaries contains higher pO_2 than tissue fluid.
(c) Deoxygenation of blood promotes the release of carbon di oxide from the blood in the lungs.
(d) All the above

[Ans. (b) The blood in the tissue capillaries contains higher pO_2 than tissue fluid]

V. Match the following:

1.

1. Surfactants	-	(i)	Premature babies
2. Low level of surfactants	-	(ii)	Protein & Phospholipids
3. Healthy lungs	-	(iii)	Emphysema
4. Difficulty in exhaling	-	(iv)	Elastic connective tissue

	1	2	3	4
(a)	iv	iii	ii	i
(b)	iii	iv	i	ii
(c)	i	ii	iii	iv
(d)	ii	i	iv	iii

[Ans. (d) 1 - ii, 2 - i, 3 - iv, 4 - iii]

2.

1. Pulmonary embolism	-	(i)	Inflammatory condition
2. Pleurisy	-	(ii)	Blood clot
3. Pulmonary edema	-	(iii)	Pleura inflammation
4. Pnemonia	-	(iv)	fluid aumulation

	1	2	3	4
(a)	iv	iii	ii	i
(b)	iii	iv	i	ii
(c)	ii	iii	iv	i
(d)	ii	i	iv	iii

[Ans. (c) 1 - ii, 2 - iii, 3 - iv, 4 - i]

3.

1.	Artherosclerosis	(i)	Congestion of lungs
2.	Angina	(ii)	Systolic pressure above 140mmHg and diastolic.
3.	Heart failure	(iii)	Insufficient oxygen supply to heart muscle.
4.	Hyper tension	(iv)	Due to the deposition of calcium, fat, cholesterol and fibrous tissue in the arteries

	1	2	3	4
(a)	iii	i	iv	ii
(b)	iv	i	ii	iii
(c)	iv	iii	i	ii
(d)	iv	i	iii	ii

[Ans. (b) 1-iv, 2-i, 3-ii, 4-iii]

4.

1. Human breathe cycle	-	(i)	Spirometer
2. Volume of air	-	(ii)	12-16 times / minute
3. Ventilation	-	(iii)	Sheet of tissue
4. Diaphragm	-	(iv)	Breathing

	1	2	3	4
(a)	iv	iii	ii	i
(b)	iii	iv	i	ii
(c)	i	ii	iii	iv
(d)	ii	i	iv	iii

[Ans. (d) 1 - ii, 2 - i, 3 - iv, 4 - iii]

UNIT - III

Chapter 7

Body Fluids and Circulation

CHAPTER SNAPSHOT

1. Heart's pumping action maintains balance between cardiac output and venous return, Heart is a double pump.
2. Each side of the heart can fail independently of the other.
3. Increase in EDV can increase SV. On the other hand decrease in venous return and EDV can decrease SV.
4. Similarly changes of EDV and ESV on SV are not independent.

Activity :

6. Ramu was 45 years old when he went to a doctor to check his blood pressure. His pressure was around 158/98mmHg. The doctor advised him to measure his blood pressure at home for two weeks. He came to the doctor saying his average blood pressure was around 160/100mmHg. Doctor concludes that Ramu has high blood pressure or hypertension. If not controlled, hypertension can lead to heart failure, stroke and kidney failure. He returned to the doctor after two months after taking the drug, ACH inhibitor. This chemical blocks the production of angiotensin II, a powerful vasoconstrictor, so his blood pressure returned back to normal.

1. **Why are people with high blood pressure at greater risk for having a hemorrhagic stroke?**
2. **Without medication Ramu's blood pressure was around 160/100mmHg after two weeks. Why this pressure was referred to as hypertension by the doctor.**
3. **Blocking the action of vasoconstrictor lower the blood pressure? Give reasons.**
4. **What is the role of ACH inhibitor in reducing blood pressure?**
5. **What conditions one might expect if the blood pressure is not controlled? (HOTS)**

Ans. 1. Haemorrhage means "bleeding caused due to rupture of blood vessels". High blood pressure can lead to rupture of blood vessel and such people are more prone to haemorrhage.

2. In cases when the diastolic pressure exceeds 90 mm Hg and the systolic pressure exceeds 150 mm Hg persistently, the condition is called **hypertension.**
3. Vasoconstrictors are drugs which cause vasoconstriction or constriction of blood vessels thus raising blood pressure. Hence blocking the action of vasoconstrictors reduces blood pressure.
4. ACE inhibitor - (Angiotension Converting Enzyme) inhibitors reduce systemic blood pressure and reduce angiotensin-II thereby protecting the kidneys also from damage.
5. If blood pressure is not controlled it can lead to heart attack, stroke, aneurysm, heart failure etc

HOTS (ADDITIONAL)

1. People living in high altitudes have an increased RBC count. Give reason.

Ans. In high altitudes, the concentration of oxygen in the air is less. Hence the RBC is able to take up less oxygen only. Therefore the RBC count increases in people living in high altitude.

2. Renal portal system is absent in mammals. Give Reason.

Ans. 1. Fishes and amphibians have a well developed renal portal system. This is reduced in reptiles. In mammals it ultimately dissappears.

2. In mammals there is complete separation of oxygenated and deoxygenated blood. Posterior portion of the body gets oxygenated blood from the heart and after oxidation etc the blood does not contain much of impurities. Hence it is not sent to kidneys for filtration.

UNIT - III

Chapter 8

EXCRETION

CHAPTER SNAPSHOT

4. Give an examples for stenohaline and euryhaline.

Ans. **Examples:** *[June-2019]*

Stenohaline - Gold fish

Euryhaline - *Artemia, Tilapia* and Salmons.

5. Write a note on positive feedback action of ADH.

Ans. **Positive feedback action of ADH:** *[HY-2019]*

1. When there is excessive loss of fluid from the body or when there is an increase in the blood pressure, the osmoreceptors of the hypothalamus respond by stimulating the neurohypophysis to secrete the antidiuretic hormone (ADH) or vasopressin (a positive feedback).
2. ADH facilitates reabsorption of water by increasing the number of aquaporins on the cell surface membrane of the distal convoluted tubule and collecting duct.
3. This increase in aquaporins causes the movement of water from the lumen into the interstitial cells, thereby preventing excess loss of water by diuresis.

Long Answers 5 MARKS

1. Kidney functioning is regulated by hormonal feedback control mechanism. Explain this mechanism. *[June-2019]*

Ans.

1. The functioning of kidneys is efficiently monitored and regulated by hormonal feedback control mechanism involving the hypothalamus, juxta glomerular apparatus and to a certain extent the heart.
2. Osmoreceptors in the hypothalamus are activated by changes in the blood volume, body fluid volume and ionic concentration.
3. When there is excessive loss of fluid from the body or when there is an increase in the blood pressure, the osmoreceptors of the hypothalamus respond by stimulating the neurohypophysis to secrete the antidiuretic hormone (ADH) or vasopressin (a positive feedback).
4. ADH facilitates reabsorption of water by increasing the number of aquaporins on the cell surface membrane of the distal convoluted tubule and collecting duct.
5. This increase in aquaporins causes the movement of water from the lumen into the interstitial cells, thereby preventing excess loss of water by diuresis.

ADDITIONAL

Choose the Correct Answers 1 MARK

I. Choose the Correct options for the below Questions:

1. Which is not a waste product?

(a) Guanine (b) Creatinine
(c) Urea (d) Ribose

[Ans. (d) Ribose]

2. Which part of nephron has evolved to form hypertonic urine?

(a) Glomerulus (b) Loop of Henle
(c) Proximal convoluted tubule
(d) Collecting duct **[Ans. (b) Loop of Henle]**

3. Which is not a excretory organ?

(a) Kidney (b) Lungs
(c) Heart (d) Liver **[Ans. (c) Heart]**

II. Choose the Correct options for the below Fill in the blanks:

1. The ureter, blood vessels enter the kidney through _____.

(a) Hilum
(b) Renal column of Bertini
(c) Hilus
(d) Renal pelvis **[Ans. (a) Hilum]**

2. The glomerular hydrostatic pressure is estimated to be _____.

(a) 60 mm / Hg (b) 55 mm / Hg
(c) 110 mm / Hg (d) 75 mm / Hg

[Ans. (b) 55 mm / Hg]

3. The major function of Henle's loop is to concentrate _____

(a) Na^+ and $C1^-$ (b) K^+ ions
(c) Na^+ and K^+ ions (d) Na^- and $C1^+$ ions

[Ans. (a) Na^+ and $C1^-$]

4. Counter current multiplier mechanism is possible because of the presence of _____

(a) Nephron (b) Collecting duct
(c) Bowman's Capsule (d) Henle's Loop

[Ans. (d) Henle's Loop]

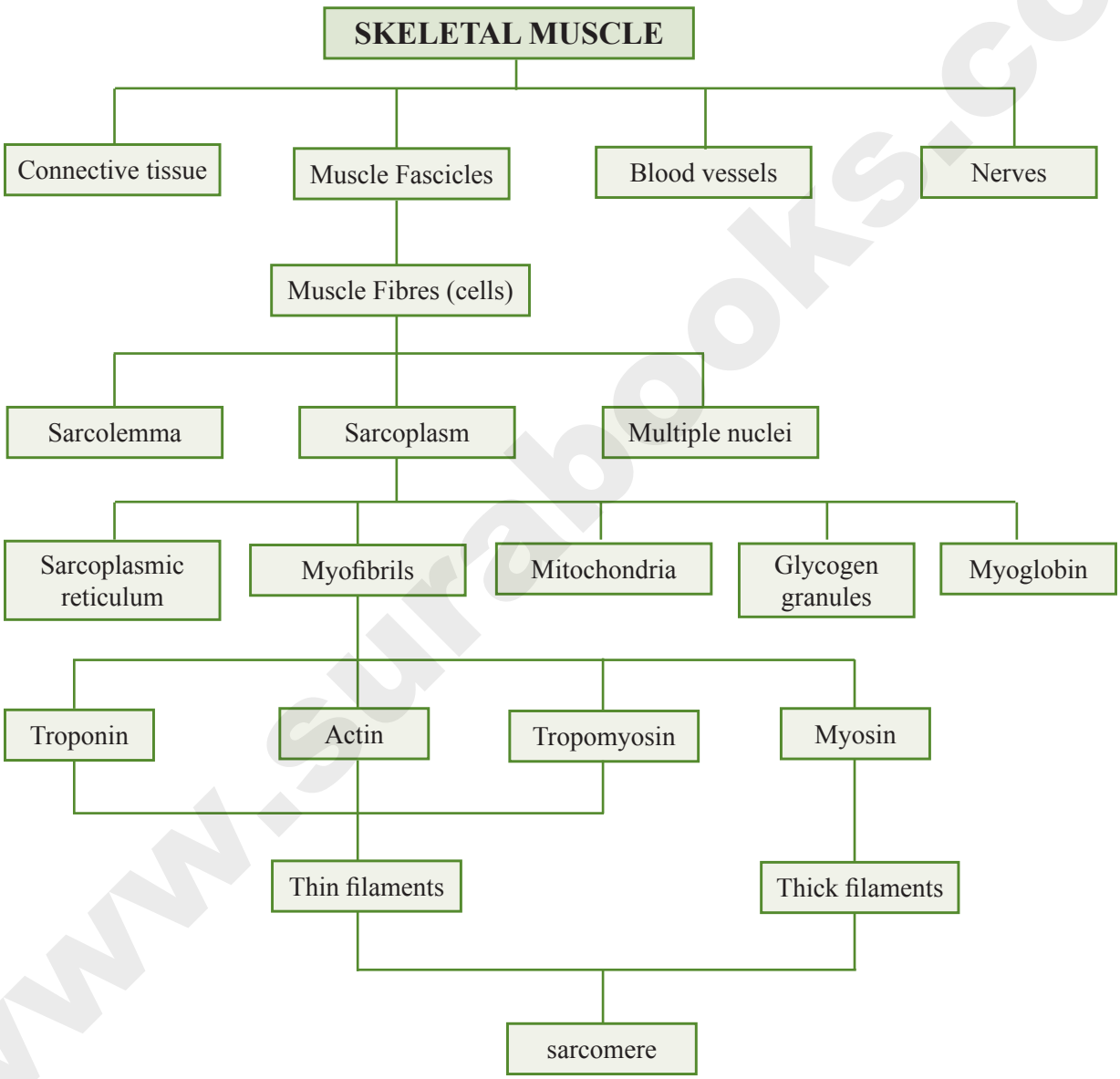
UNIT - IV

Chapter 9

LOCOMOTION AND MOVEMENT

CHAPTER SNAPSHOT

CONCEPT MAP



SHORT ANSWERS 3 MARKS

1. Distinguish Red muscle fibres and White muscle fibres.

Ans.

S.No.	Red muscle fibres	White muscle fibres
1.	They are dark red in colour due to presence of abundant myoglobin.	They are whitish since they have less myoglobin.
2.	Mitochondria are more in number but they have less Sarcoplasmic reticulum.	Mitochondria are less in number but they have more of Sarcoplasmic reticulum.
3.	They depend on aerobic process for energy.	They depend on anaerobic process for energy.

2. Name the regions of the vertebral column and the number of vertebrae present in them.

Ans.
Cervical - 7 vertebrae
Thoracic - 12 vertebrae
Lumbar - 5 vertebrae
Sacrum - 5 fused vertebrae
Coccyx - 4 fused vertebrae
A total of 33 Vertebrae are present in vertebral column.

3. What are the functions of the vertebral column?

Ans. The vertebral column protects the spinal cord, supports the head and serves as the point of attachment for the ribs and musculature of the back.

4. What are Cartilaginous joints?

Ans. **Cartilaginous joints or Amphiarthroses:** They are slightly movable joints in which the joint surfaces are separated by a cartilage and slight movement is only possible.

5. Differentiate pelvis of male and female.

Ans. The pelvis of male is deep and narrow with larger heavier bones and the female is shallow, wide and flexible in nature, and this helps during pregnancy which is influenced by female hormones.

6. What are Synovial joints?

Ans. **Synovial joints or Diarthroses joints:** They are freely movable joints. The articulating bones are seperated by a cavity which is filled with synovial fluid. **Eg: Pivot joint** – between atlas and axis.

7. Differentiate between Actin and Myosin filament.

Ans.

S.No.	Actin Filament	Myosin Filament
1.	They are thin	They are thick.
2.	Cross-bridges are not seen.	Cross-bridges are seen.
3.	They occur in I-band.	They occur in A - band.
4.	It has low molecular weight	It has high molecular weight
5.	It is a globular protein	It is an polymerized protein.

8. Differentiate between A - band and I - band.

Ans.

S.No.	A-Band	I-Band
1.	It consists of myosin filament	It consists of actin filament.
2.	It has a dark appearance.	It has a light appearance.
3.	It is a anisotropic band.	It is a isotropic band.

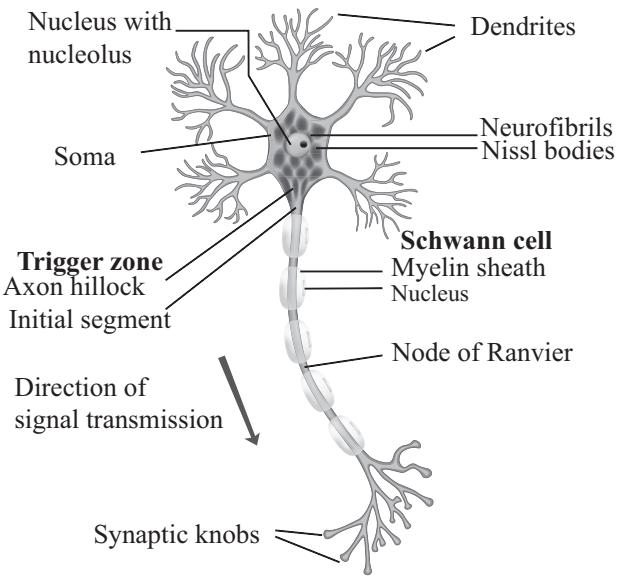
LONG ANSWERS 5 MARKS

1. List the bones of the Pectoral girdle.

Ans.
1. The upper limbs are attached to the pectoral girdles.
2. The girdle is formed of two halves. Each half of the pectoral girdle consists of a **clavicle** or **collar bone** and a **scapula**.
3. Scapula has a slightly elevated ridge called the **spine** which projects as a flat, expanded process called the **acromion**.

MUST KNOW DEFINITIONS

Neurons	:	The neural system comprises of highly specialized cells called **neurons**.
Neuroglia	:	The non-nervous special cells are called **neuroglia**. They form the supporting cells of the nervous tissue.
Resting membrane potential	:	The electrical potential difference across the plasma membrane of a resting neuron is called the **resting potential**.
Action membrane potential	:	An action potential occurs when a neuron sends information down an axon, away from the cell body.
Synapse	:	The junction between two neurons is called **Synapse**.
Brain	:	The brain acts as the command and control system and is the site of information processing in the nervous system.
Brain stem	:	Brain stem is the part of the brain between the spinal cord and the diencephalon.
Corpora quadrigemina	:	The dorsal portion of the midbrain consists of four rounded bodies called **Corpora quadrigemina**.
Cerebellum	:	Cerebellum is the second largest part of the brain.
Medulla oblongata	:	It forms the posterior most part of the brain.
Cauda equina	:	The thick bundle of elongated nerve roots within the lower vertebral canal is called the **Cauda equina.**
Unconditional reflex	:	It is an inborn reflex for an unconditioned stimulus.
Conditioned reflex	:	This does not naturally exist in animals. Only experience makes it a part of the animal behaviour. The cerebral cortex controls the conditional reflex.
Autonomic Neural system	:	The autonomic neural system is auto functioning and self governed. This system controls and coordinates the involuntary activities of various organs.
Sensation	:	Awareness of the stimulus.
Perception	:	Interpretation of the meaning of the stimulus.
Myopia	:	Near sightedness.
Hypermetropia	:	Long sightedness.
Presbyopia	:	Due to aging, the lens loses elasticity and the power of accommodation.
Astigmatism	:	It is a refractive error of the eye caused due to rough curvature of **cornea** or **lens**.
Cataract	:	Due to the changes in nature of protein, the eye lens becomes opaque.



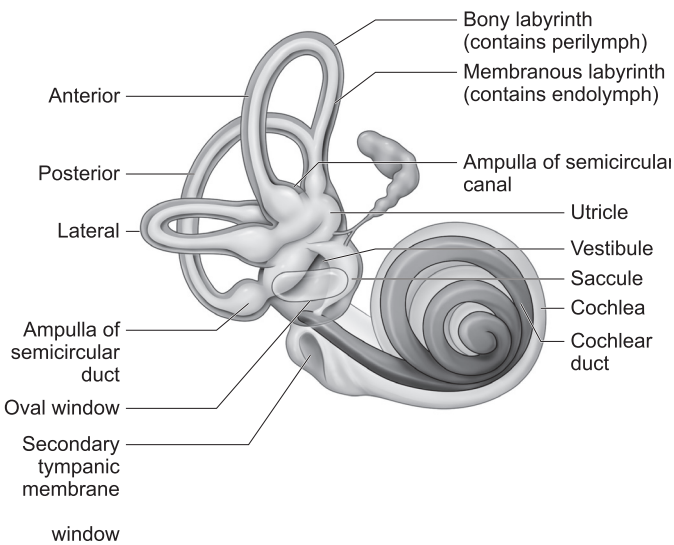
Neuron

6. An axon is a long fibre that arises from a cone shaped area of the cell body called the **Axon hillock** and ends at the branched distal end.
7. The axon of one-neuron branches and forms connections with many other neurons. An axon contains the same organelles found in the dendrites and cell body but lacks Nissl's granules and Golgi apparatus.
8. The axon, particularly of peripheral nerves is surrounded by **Schwann cells** (a type of glial cell) to form myelin sheath, which act as an insulator.
9. **Myelin sheath** is associated only with the axon; dendrites are always non-myelinated.
10. Schwann cells are not continuous along the axon; so there are gaps in the myelin sheath between adjacent Schwann cells. These gaps are called **Nodes of Ranvier**.
11. Each branch at the distal end of the axon terminates into a bulb like structure called **synaptic knob** which possesses **synaptic vesicles** filled with **neurotransmitters**.
12. The axon transmits nerve impulses away from the cell body to **inter neural space** or to a **neuro-muscular junction**.

8. How does the ear act as an organ of equilibrium?

Ans. **Organ of Equilibrium :**

1. Balance is part of a sense called proprioception, which is the ability to sense the position, orientation and movement of the body. The organ of balance is known as the **vestibular system** which is located in the inner ear next to the cochlea.
2. The vestibular system is composed of a series of fluid filled sacs and tubules.These sacs and tubules contain endolymph and are kept in the surrounding perilymph.
3. These two fluids, perilymph and endolymph, respond to the mechanical forces, during changes occurring in body position and acceleration.
4. The utricle and saccule are two membranous sacs, found nearest the cochlea and contain equilibrium receptor regions called **maculae** that are involved in detecting the linear movement of the head. The maculae contain the hair cells that act as mechanorecptors.
5. These hair cells are embeded in a gelatinous otolithic membrane that contains small calcareous particles called **otoliths**. This membrane adds weight to the top of the hair cells and increase the inertia.



UNIT - IV

Chapter 11

CHEMICAL COORDINATION AND INTEGRATION

CHAPTER SNAPSHOT

EVALUATION

1. The maintenance of constant internal environment is referred as
(a) Regulation (b) Homeostasis
(c) Co-ordination (d) Hormonal control
[Ans. (b) Homeostasis]

2. Which of the following are exclusive endocrine glands?
(a) Thymus and testis (b) Adrenal and ovary
(c) Parathyroid and adrenal
(d) Pancreas and parathyroid
[Ans. (c) Parathyroid and adrenal]

3. Which of the following hormone is not secreted under the influence of pituitary gland?
(a) thyroxine (b) insulin
(c) oestrogen (d) glucocorticoids
[Ans. (b) insulin]

4. Spermatogenesis in mammalian testes is controlled by
(a) Luteinising hormone
(b) Follicle stimulating hormone
(c) FSH and prolactin
(d) GH and prolactin
[Ans. (b) Follicle stimulating hormone]

5. Serum calcium level is regulated by
(a) Thyroxine (b) FSH
(c) Pancreas
(d) Thyroid and parathyroid
[Ans. (d) Thyroid and parathyroid]

6. Iodised salt is essential to prevent
(a) rickets (b) scurvy
(c) goitre (d) acromegaly
[Ans. (c) goitre]

7. Which of the following gland is related with immunity?
(a) Pineal gland (b) adrenal gland
(c) thymus (d) parathyroid gland
[Ans. (c) thymus]

8. Which of the following statement about sex hormones is correct?
(a) Testosterone is produced by Leydig cells under the influence of luteinizing hormone.
(b) Progesterone is secreted by corpus luteum and softens pelvic ligaments during child birth.
(c) Oestrogen is secreted by both sertoli cells and corpus luteum.
(d) Progesterone produced by corpus luteum is biologically different from the one produced by placenta. **[Ans. (a) Testosterone is produced by Leydig cells under the influence of luteinizing hormone]**

9. Hypersecretion of GH in children leads to
(a) Cretinism (b) Gigantism
(c) Graves disease (d) Tetany
[Ans. (b) Gigantism]

10. A pregnant female delivers a baby who suffers from stunted growth, mental retardation, low intelligence quotient and abnormal skin. This is the result of
(a) Low secretion of growth hormone
(b) Cancer of the thyroid gland
(c) Over secretion of pars distalis
(d) Deficiency of iodine in diet.
[Ans. (d) Deficiency of iodine in diet]

11. The structure which connects the hypothalamus with anterior lobe of pituitary gland is the
(a) Dendrites of neuro hypophysis
(b) Axons of neurohypophysis
(c) Bands of white fibers from cerebellar region
(d) Hypophysial portal system
[Ans. (d) Hypophysial portal system]

12. Which one of the following statement is correct
(a) Calcitonin and thymosin are thyroid hormones
(b) Pepsin and prolactin are secreted in stomach
(c) Secretin and rhodopsin are polypeptide hormones
(d) Cortisol and aldosterone are steroid hormones
[Ans. (d) Cortisol and aldosterone are steroid hormones]

UNIT - V

Chapter 12

TRENDS IN ECONOMIC ZOOLOGY

CHAPTER SNAPSHOT

1. The adult *Bombyx mori* is about 2.5 cm in length and pale creamy white in colour.
2. Due to heavy body and feeble wings, flight is not possible by the female moth. This moth is unisexual in nature and does not feed during its very short life period of 2-3 days.
3. Male moth copulates with female for about 2-3 hours and if not separated, they may die.
4. A single female moth lays 400 to 500 eggs depending upon the climatic conditions. Two types:
   - **(i) Diapause type:** Laid by silkworms inhabiting the temperate regions
   - **(ii) Non-diapause type:** Laid by silk worms inhabiting subtropical region like India.
5. The eggs after ten days of incubation hatch into larva called as caterpillar.
6. The newly hatched caterpillar is about 3 mm in length and is pale, yellowishwhite in colour.
7. The caterpillars are with well developed mouth-parts to feed easily on the mulberry leaves.
8. After 1st, 2nd, 3rd and 4th moultings caterpillars get transformed into 2nd, 3rd, 4th and 5th instars respectively. It takes about 21 to 25 days after hatching.
9. The fully grown caterpillar is 7.5 cm in length with salivary glands and undergoes pupation.
10. The caterpillars stop feeding and move to the corner of the leaves and secretes a sticky fluid by their silk gland.
11. The secreted fluid comes out through spinneret (a narrow pore situated on the hypopharynx) and forms silk thread which hardens on exposure to air and is wrapped around the body of caterpillar in the forms of a covering called as cocoon.
12. The length of thread for the formation of cocoon is about 1000-1200 metres which takes 3 days to complete.
13. The pupal period lasts for 10 to 12 days and the pupae comes out as a adult moth.

GOVERNMENT EXAM QUESTIONS

Bio-Zoology (Short version)

Choose the Correct Answers — 1 MARK

1. Which of the statements regarding lac insect is True? *[March-2019]*

(i) Microscope resinous crawling scale insect
(ii) Inserts its proboscis into plant tissue, such juices and grows
(iii) Secretes lac from the hind end of the body
(iv) The male lac insect is responsible for large scale production of lac

(a) (ii), (i) and (iv) are correct
(b) (i), (iii) and (iv) are correct
(c) (i), (ii) and (iii) are correct
(d) (ii), (iii) and (iv) are correct

[Ans. (d) (ii), (iii) and (iv) are correct]

2. Which one of the following is correct pair?

(a) Exotic breed – Cyprinus Carpio *[March-2019]*
(b) Apiculture – Reeling
(c) Sericulture – Propolis
(d) Milch breed – Malvi

[Ans. (a) Exotic breed – Cyprinus Carpio]

3. The good egg layers and delicious breed is:

(a) Chittagong (b) Leghorn *[June-2019]*
(c) Plymouth (d) Aseel

[Ans. (a) Chittagong]

Very Short Answers — 2 MARKS

1. At Tuticorin region, the pearl oyster diving people have some changes in their blood. State the reasons for it. *[June-2019]*

Ans. Pearl oyster diving people who search in cold water are taking the risk of getting hypothermia. Hypothermia occurs when body temperature falls below 95 F (35C) and cause reduced blood circulation.

Short Answers — 3 MARKS

1. Enumerate the benefits of Poultry Farming.

Ans. **Benefits of poultry farming :** *[March-2019]*

1. It does not require high capital for construction and maintenance of the poultry farming.
2. It does not require a big space.

UNIT - IV

Chapter 12

BASIC MEDICAL INSTRUMENTS AND TECHNIQUES

This Chapter is for only long version not for short version

CHAPTER SNAPSHOT

IX. IDENTIFY THE INCORRECT PAIR FROM THE BELOW :

1. (a) Hypotension - Low blood pressure
   (b) Sick sinus syndrome - Sinoatrial node
   (c) 18F-FDG - Radio labelled sugar
   (d) PET - Photo emission Technology

[Ans. (d) PET - Photo emission Technology]

2. (a) Normal blood pressure - 120/80 mm Hg
   (b) Normal glucose value - 80-120 mg/dL
   (c) Systolic pressure - 120 mm Hg
   (d) Diastolic pressure - 80 mm Hg

[Ans. (b) Normal glucose value - 80-120 mg/dL]

X. IDENTIFY THE ODD-MAN OUT FROM THE BELOW :

1. (a) Glucometer (b) blood glucose
   (c) Blood pressure (d) disposable test strip

[Ans. (c) Blood pressure]

Reason: Except blood pressure, all are related to Glucometer.

2. (a) Clinical stethoscope (b) Heart beat
   (c) Internal sounds (d) Auto analyser

[Ans. (d) Auto analyser]

Reason: Autoanalyser is a computer controlled device. Others are related to stethoscope.

VERY SHORT ANSWERS 2 MARKS

1. What is haematology?

Ans. Haematology, is the branch of medicine concerned with the study of the cause, prognosis, treatment, and prevention of diseases related to blood.

2. What is the name of the study used to know the effects of chemical substances on living organisms?

Ans. Toxicology is a discipline that involves the study of the adverse effects of chemical substances on living organisms and the practice of diagnosing and treating exposures to toxins and toxicants.

3. Name the types of sphygmomanometer.

Ans. 1. Manual sphygmomanometer.
   a) Mercury sphygmomanometer
   b) Aneuroid sphygmomanometer
2. Digital sphygmomanometer.

4. Name the two important aspects of diagnosis and treatment?

Ans. Diagnosis involves identifying or determining the nature of disease. While treatment involves the curative aspects in order to eliminate the disease causing agent.

5. What is glucometer?

Ans. Glucometer is a simple and portable medical device used to record the approximate levels of blood glucose.

6. Name the biochemical parameters which can be estimated by autoanalyser?

Ans. Autoanalyser is used for quick estimation of several bio-chemical parameters like glucose, urea, cholesterol, enzymes and other proteins present in body fluids.

7. What is piezo-electric effect?

Ans. Ultrasound waves are produced by a physical phenomenon known as Piezo-electric effect.

8. How the laboratory tests are useful for the physician?

Ans. Clinical laboratory tests help a physician in correct diagnosis and treatment, coupled with advanced communication technology, telemedicine, an emerging area are vital especially in rural health care.

9. Why sphygmomanometer is called as blood pressure meter?

Ans. Sphygmomanometer is a device that measures the blood pressure hence known as blood pressure meter.

10. What is modern electronic stethoscope? And write its uses.

Ans. The modern electronic stethoscope is a high precision instrument used to hear with clarity the internal sounds of the human body even in a noisy environment or through the heavy clothing of the patient.

11th STD.

GOVT. MODEL QUESTION PAPER-1

TIME ALLOWED : 1 ¼ HOURS

BIO- ZOOLOGY

MAXIMUM MARKS : 35

Instructions:

i. Check the question paper for fairness of printing.

ii. Use **Blue** or **Black** ink to write and underline and **pencil** to draw diagrams.

SECTION - I

Note : (i) Answer **all** the questions: **(8 × 1 =8)**

(ii) Each question carries 1 mark.

Choose the most suitable answer from the given four alternatives and write the option code and the corresponding answer or **Write the answer.**

1. Molecular taxonomic tool consists of
   (a) DNA and RNA
   (b) Mitochondria and ER
   (c) Cell wall and membrane protein
   (d) All the above

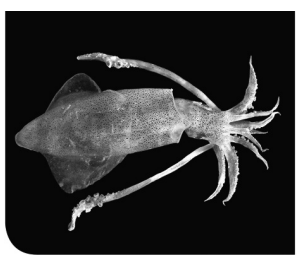
2. Lateral line sense organs is seen
   (a) salamander (b) frog
   (c) water snake (d) fish

3. Select the wrongly matched pair
   (a) Exocrine gland – Salivary gland
   (b) Endocrine gland – Hormones
   (c) Bones – Adipose tissue
   (d) Blood – Fluid connective tissue

4. Kidney of frog is
   (a) Archinephric (b) pnonephric
   (c) mesonephric (d) metanephric

5. Which one of the following is incorrectly matched?
   (a) Succus entericus – Intestine
   (b) Renin – Kidney
   (c) Rennin – Stomach
   (d) Ptyalin – Mouth

6. Write the name of the animal in the given diagram



7. The plasma proteins involved in the coagulation of blood is
   (a) globulin (b) fibrinogen
   (c) albumin (d) globin

8. Write the name of the enzyme involved in the given reaction at X

   $CO_2 + H_2O$ $\xrightarrow{X}$ HCO_3

SECTION - II

Write **any four** of the following: **(4 × 2 =8)**

9. Expand the abbreviations DAISY and ABIS.

10. Compare Schizocoelomate with Enterocoelomate.

11. List any two characteristics of Hemichordate.

12. How emphysema occur?

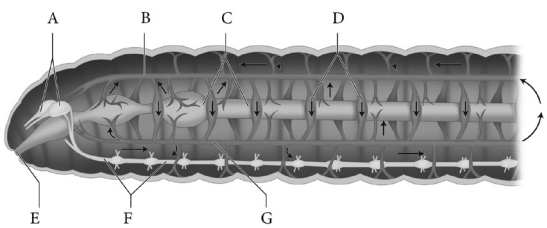
13. Write the significance of the followings. i. Microvilli ii. Goblet cells.

14. State the deficiency disease caused by less intake of iron in our diet.

SECTION - III

Write any three of the following in which question No. **18 is compulsory.** **(3 × 3 =9)**

15. Label the parts A, B, C, D, E and F in the given diagram



16. List out the diagnostic features of Phylum Ctenophora.

17. Write the systematic positions of cockroach and frog.

18. Construct a cladogram with the given examples. (Catfish, Frog, Crocodile, Crow, Rabbit and Monkey)

19. Tabulate the agglutinogens and agguitinins present in the different groups of human blood.

11th STD.

Register Number | | | | | | |

QUARTERLY EXAMINATION - 2019-20

BIOLOGY

TIME ALLOWED : 2.30 Hours MAXIMUM MARKS : 70

Only Bio-Zoology questions are given here for 35 Marks. Refer to our Bio-Botany guide for Bio-Botany questions (for another 35 Marks)

BIO-ZOOLOGY

(35 MARKS)

Instructions:

i. Check the question paper for fairness of printing. If there is any lack of fairness, inform the Hall Supervisor immediately.

ii. Use **Blue** or **Black** ink to write and underline and **pencil** to draw diagrams:

SECTION – I

Note : (i) Answer **all** the questions: (8 × 1 = 8)

(ii) Choose the most appropriate answer from the given **four** alternatives and write the option code and the corresponding answer.

1. The cross between male lion and female tiger results in the production of

(a) Hinny (b) Mule

(c) Tigon (d) Liger

2. Match the following and choose the correct answer

A	Ctenophora	i	Trochophore larva
B	Mollusca	ii	Planula larva
C	Cnidaria	iii	Cydippid larva
D	Annelida	iv	Veliger Larva

(a) A (iii), B (iv), C (ii), D (i)

(b) A (iv), B (iii), C (i), D (ii)

(c) A (i), B (iii), C (iv), D (ii)

(d) A (ii), B (iv), C (iii), D (i)

3. Choose the correct pair

A Compound epithelium - Respiratory tract

B Ciliated epithelium - Kidney

C Columnar epithelium - Digestive tract

D Pseudo stratified epithelium - Heart

4. Choose incorrect pair

Earth worm Reproductive system		Segments
(a) Prostate gland	-	18 and 19
(b) Spermathecae	-	7, 8 and 9
(c) Oviducts	-	13 and 14
(d) Vasa deferentia	-	upto 10

5. **Assertion (A) :** Maximum absorption takes place in the small intestine.

Reason (R) : Absorption of simple sugars, alcohol and medicine etc take place in small intestine.

(a) Both (A) and (R) are true, (R) is the correct explanation of (A).

(b) Both (A) and (R) are true, (R) is the incorrect explanation of (A).

(c) (A) is a true statement buy (R) is false.

(d) (A) and (R) both are false.

6. Total lung capacity (TLC)

(a) TV + IRV (b) VC + RV

(c) ERV + TV + IRV (d) TV + ERV

7. Which one is the correct route through which impulses travel in the heart?

(a) SA node - AV node - Bundle of His - Purkinje fibers - Heart Muscle.

(b) AV node - Bundle of His - SA node - Heart Muscle - Purkinje fibers.

(c) SA node - AV node - Purkinje fibers - Bundle of His - Heart Muscle.

(d) AV node - SA node - Bundle of His - Purkinje fibers - Heart Muscle.

8. Angiotensinogen is secreted by

(a) Kidney (b) Liver

(c) Vasa Recta (d) Glomerulus