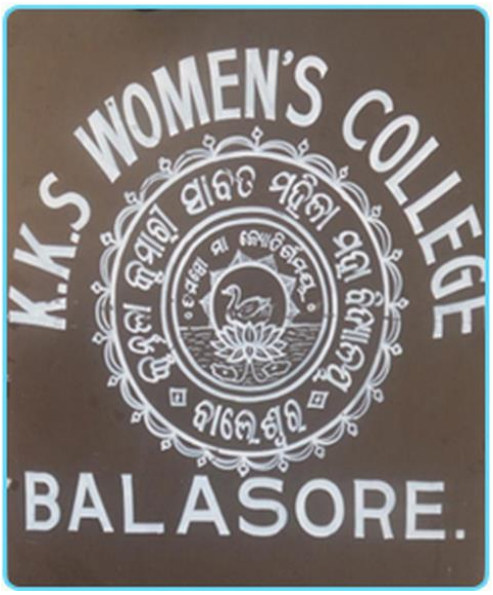

K.K.S. WOMEN'S COLLEGE, BALASORE.

DEPARTMENT OF ZOOLOGY

SUBJECT: ZOOLOGY (HONS.) CC-V, CC-VI & CC-VII

(IIIRD SEMESTER)

QUESTION BANK: PREVIOUS YEAR QUESTIONS WITH MODEL QUESTIONS

2021

Full Marks - 60

Time - 3 hours

The figures in the right-hand margin indicate marks

Answer *all* questions

Part-I

1. Answer the following : 1×8

   a) In the developemt of Balanoglossus ___ is the larva developed.

   b) In class thaliocea of sub-phyllum urochordata ___ is the example.

   c) Retrogressive metamorphosis is the characteristics of ___ .

   d) In fish migration, the movement of individuals from fresh water to sea water is called ___ .

   e) ___ are the animals who are unable to control osmotic state of their body fluids but confirms to the osmolarity of the ambient medium.

   f) ___ is the survial species of the order Rhycocephalia of class-Replilia.

Part-IV

4. a) What is retrogressive metamorphosis ? Explain the process of retrogressive metamorphosis in Urochordata. 6

OR

b) Discuss the auricularian hypothesis of origin of Chordates.

5. a) Enumerate the differences between perfromyzon and myxine. 6

OR

b) Discuss the affinities and phylogenetic position of petromyzon.

6. a) Discuss the affinities of sphenodon. 6

OR

b) Give an account of flight adaptation in birds.

7. a) Briefly describe the affinities and phylogenetic position of prototheria. 6

OR

b) Giva an account of adaptive radiation in mammals with respect to Locomotary appendages.

Part-III

Answer any *eight* of the following : 2×8

a) Describe the characters of tornaria larva of Balanoglossus.

b) Describe the affinities of Cephalochordata and annelida.

c) Give the concept of protochordates and urochordates.

d) Write the characters of living fossils.

e) What are the advantages of the pneumatic bone in birds ?

f) Describe the features linking birds and dinosaurs.

g) What is erracfic migration ?

h) Describe the specialised characters of prototheria.

i) What is adaptive Radiation ?

j) What is Continental Drift theory ?

g) ___ is the connecting link between reptiles and the birds.

h) ___ continent is included in the oriental founal realm.

Part-II

2. Answer any ***eight*** of the following : $1\frac{1}{2} \times 8$

a) Why Balanoglossus is called ciliary feader ?

b) What is the function of solenocytes ?

c) What is Neotenous larva theory ?

d) Differentiate between catadromous and anadromous migration.

e) Write the important characters of amphibia.

f) What is synapsid skull ?

g) What is snake venom ?

h) What are the disadvantages of bird migration ?

i) What is dental formula ?

j) Write the vertebrates present in the palaearotic region.

2021

Full Marks - 60

Time - 3 hours

The figures in the right-hand margin indicate marks

Answer *all* questions

Part-I

1. Answer the following by fill in the blanks or one word answer : 1×8

   a) A group of similar cells specified for a common function is called ___ .

   b) The process of formation of erythrocyte is called ___.

   c) What is ossification ?

   d) The segment between two adjacent Z-line in a myofibril is called ___.

   e) Name the enzyme which separates myosin into LMM and HMM.

   f) The photosentitive pigment of rod is ___ .

   g) After ovulation the ruptured follicle is transformed into a body called ___ .

   h) FSH and LH are released under the influence of which hormone ?

d) What is membrane potential ?

e) What is neurotransmitter ? Describe the role of Acctylcholine of it.

f) Describe the Role of Graffian follicle ?

g) What is the function of Epididymis of testis ?

h) Why pancreas is called a heteocrine gland ?

i) Give the histology of ovary.

j) Describe the structure and function of adrenal gland.

Part-IV

4. a) Describe the structure and function of simple epithelium. 6

OR

b) Describe the structure and function of Leukocytes.

5. a) What is muscle contraction ? Explain the chemical basis of muscle contraction. 6

OR

b) Describe the structure and function of neuron.

6. a) Describe the physiology of human male reprodcutive system. 6

OR

b) Describe the methods of contraception in male and female.

7. a) Describe the structure and function of thyroid hormones. 6

OR

b) Give an account of different hormones and their function, synthesized by Islets cells of Langerhans.

Part-II

2. Answer any ***eight*** of the following : $1\frac{1}{2} \times 8$

a) Where is the location and function of Germinal epithelium ?

b) What are macrophages ?

c) What do you mean by resting membrane potential ?

d) What is function of tympanic membrane ?

e) What is ovarian cycle ?

f) What is spermeogenesis ?

g) What is the function of testosterone ?

h) What is intrauterine Device (IUD) ?

i) What is the function of Relaxin ?

j) What is the function of ACTH ?

Part-III

. Answer any ***eight*** of the following : 2×8

. a) What is a cartilage ? Give its function.

. b) Describe the role of calcium in muscle contraction.

. c) What is function of neurons ?

2021

Full Marks - 60

Time - 3 hours

The figures in the right-hand margin indicate marks

Answer *all* questions

Part-I

1. Fill in the blanks : 1×12

a) The monosaccharide is called a ketose when it has a ___ group at carbon-2.

b) The empirical formula of carbohydrate is ___ .

c) The -COOH groups of aminoacids react with alcohol to form ___.

d) ___ are known as biocatalysts.

e) The problein part of a holoenzyme is called ___.

f) The only prokaryotes that perform oxygenic photosynthesis are ___.

g) A plasmid when temporarily integrate or detech from the main chromosome is called ___ .

h) The enzyme ___ helps the release of new flu virus particles from the infected cells.

5. a) Describe the secondary structure of Proteins. 6

OR

b) Describe the basic structure of Immumoglobulins with reference to IgG.

6. a) What is enzyme kinetics ? Explain the kinetics of single substrate reaction. 6

OR

b) What is enzyme inhibition ? How do different types of enzyme inhibitors act ? Explain with example.

7. a) Differentiate Gram-negative and gram-positive walls of bacteria. 6

OR

b) Explain the viral reproduction cycle.

Part-II

2. Answer any *eight* of the following : $1\frac{1}{2} \times 8$

a) What are micro an macromolecules ?

b) What is the biological importance of triases ?

c) What is the composition of Glycolipids ?

d) What is esterification ?

e) Write at least two Biological function of IgA.

f) What is wobble base pairing ? Give one example of it.

g) What is melting temperature of DNA ?

h) What is the function of CoA ?

i) What is F-prime plasmid ? How is it formed ?

j) Differentiate between virus and viroid.

Part-III

3. Answer any *eight* of the following : 2×8

a) Draw the molecular structure of Chitin.

b) Hyaluronic acid.

c) Purine bases.

d) Km and its significance.

e) Effect of pH on enzyme action.

f) Antigenic determinants.

g) Properties of allosteric enzymes.

h) Explain the process of bacterial transformation.

i) How plus-strand RNA is different from minus-strand RNA ?

j) Enumerate the steps taken by WHO to control AIDs.

Part-IV

4. a) Define polysaccharides and describe the structure and biological importance of three homopolysaccharides. 6

OR

b) Define phospholipids. Classify them with suitable examples and state their functions.

IIIRD SEMESTER

SUBJECT: ZOOLOGY (HONS.) CC-V, CC-VI & CC-VII

OTHER QUESTIONS: PREVIOUS YEAR QUESTIONS WITH MODEL QUESTIONS

+3 3rd Sem

Zoo (H) – V

2017

Full Marks : 50

Time : 2½ hours

The figures in the right-hand margin indicate marks

Answer **all** questions

Draw labelled diagrams wherever necessary

1. Write short notes on the following : 4×2½

(a) Characters of chordates

(b) Ammocoetes larva

(c) Squamata

(d) Archaeopteryx.

2. What is 'retrogressive metamorphosis' ? Describe the phenomenon with reference to ascidian tadpole larva. 10

Or

Write notes on the following :

(a) Tornaria larva

(b) Dipleurula concept.

3. Give an account of parental care in amphibia. 10

Or

Give an account of migration in fishes.

4. Classify class Reptilia up to orders with distinguishing features and examples from each order. 10

Or

Describe flight adaptations in birds.

5. Give an account of affinities of Prototheria. 10

Or

Write notes on the following :

(a) Adaptive radiation in mammals

(b) Continental drift theory.

***

+3 3rd Sem

Zoo (H) – VI

2017

Full Marks : 50

Time : 2½ hours

The figures in the right-hand margin indicate marks

Answer **all** questions

Draw labelled diagrams wherever necessary

1. Write short notes on the following : 4×2½

(a) Structure of bone

(b) Reflex action

(c) Muscle twitch

(d) Anti-diuretic hormone.

2. Give the structure, classification and functions of Epithelial tissue. 10

Or

Give an account of origin of action potential and its propagation across the nerve fibre.

3. What is synapse? Give an account of synaptic transmission. 10

Or

Describe the molecular and chemical basis of muscle contraction.

4. Give an account of the ultrastructure and functions of skeletal muscle fibre. Add a note on tetanus. 10

Or

Discuss the physiology of female reproduction.

5. Describe the structure of adenohypophysis and mention the functions of the hormones secreted from it. 10

Or

Describe the mechanism of hormone action with suitable example.

* * *

+3 3rd Sem

Zoo (H) – VII

2017

Full Marks : 50

Time : 2½ hours

The figures in the right-hand margin indicate marks

Answer **all** questions

Draw labelled diagrams wherever necessary

1. Write short notes on the following : 4×2½

(a) Phospholipids

(b) Amino acids

(c) *t*-RNA

(d) Isoenzymes.

2. Describe the chemical structure and function of monosaccharides, disaccharides and polysaccharides with example. 10

Or

Write the structure and significance of saturated fatty acids.

3. Write the structure and physiological importance of essential amino acids. 10

Or

Write the basic structure, classes and functions of immunoglobulins.

4. Give an account of Watson and Crick's DNA model with suitable diagram. 10

Or

What are enzymes? Give the classification of enzymes. Add a note on the specificity of enzyme action.

5. Derive Michaelis-Menten equation. Mention the significance of K_m and V_{max}. 10

Or

What is enzyme inhibition? Discuss different types of enzyme inhibition.

* * *

+3(IIIS)CBCS-Sc.(H) —
Core – 5 (Zool)

2017

Time : As in Programme

Full Marks : 50

The figures in the right-hand margin indicate marks.

*Answer **all** questions from both the Groups.*

Group – A
କ – ବିଭାଗ

1. Define the following words : 1×10 = 10
ନିମ୍ନ ଶବ୍ଦଗୁଡ଼ିକର ସଂଜ୍ଞା ନିରୂପଣ କର :
(a) Echinoderm
କଣ୍ଟକତ୍ୱକ
(b) Urochordata
ପୁଚ୍ଛମେରୁଦଣ୍ଡୀ
(c) Cyclostome
ଗୋଲମୁଖୀ
(d) Reptile
ସରୀସୃପ
(e) Connecting link
ସଂଯୁକ୍ତ ଯୋଗାଯୋଗ

(f) Migration
প্রবাহ

(g) Scale
কাঠি

(h) Adaptive radiation
উপযোজন বিকিরণ

(i) Parental care
অপত্য যত্ন

(j) Fang
বিষদান্ত

Group – B
খ – বিভাগ

Answer **all** the questions : 8×5 = 40
সমস্ত প্রশ্নর উত্তর দিଅ :

2. Explain retrogressive metamorphosis in detail.
বিশদ ভାବରେ ପଶ୍ଚାତ୍ ରୂପାନ୍ତର ବ୍ୟାଖ୍ୟା କର ।

OR
ଅଥବା

Write notes on the following :
ନିମ୍ନଲିଖିତଗୁଡ଼ିକର ବିବରଣୀ ପ୍ରଦାନ କର :

(a) Hemichordata
ଅର୍ଦ୍ଧଆଦିମେରୁଦଣ୍ଡୀ

(b) Larva of Protochordata
ଆଦିମେରୁଦଣ୍ଡୀମାନଙ୍କର ଲାର୍ଭା

3. Discuss structural peculiarities of **Myxine**.

ମିକ୍‌ସିନ୍‌ର ଗଠନଗତ ସ୍ୱାତନ୍ତ୍ର୍ୟ ଆଲୋଚନା କର ।

OR

ଅଥବା

Write notes on the following :

ନିମ୍ନଲିଖିତଗୁଡ଼ିକର ବିବରଣୀ ପ୍ରଦାନ କର :

(a) Characters of Cyclostomata

ଗୋଲମୁଖୀମାନଙ୍କ ବୈଶିଷ୍ଟ୍ୟ

(b) Affinities of Petromyzon

ପେଟ୍ରୋମାଇଜନ୍‌ର ସମୀପନତା

4. Characterise and classify both extinct and living Amphibia.

ଗୁଣାବଳୀ ସହ ଲୋପପାଇଯାଇଥିବା ଓ ବଞ୍ଚିଥିବା ଉଭୟଚରଙ୍କ ବର୍ଗୀକରଣ କର ।

OR

ଅଥବା

Write notes on the following :

ନିମ୍ନଲିଖିତଗୁଡ଼ିକର ବିବରଣୀ ପ୍ରଦାନ କର :

(a) Parental care in fishes

ମତ୍ସ୍ୟମାନଙ୍କର ଅପତ୍ୟ ଯତ୍ନ

(b) Scales in fishes

ମତ୍ସ୍ୟମାନଙ୍କ କାତି

5. Explain skull in Reptilia with illustration.

ଚିତ୍ର ସହ ସରୀସୃପମାନଙ୍କ ଖପୁରି ବ୍ୟାଖ୍ୟା କର ।

OR

ଅଥବା

Write notes on the following :

ନିମ୍ନଲିଖିତଗୁଡ଼ିକର ବିବରଣୀ ପ୍ରଦାନ କର :

(a) **Archaeopteryx**

ଆର୍କିଓପ୍ଟେରକ୍ସ୍

(b) Poisonous apparatus of snakes

ସର୍ପମାନଙ୍କ ବିଷଗ୍ରନ୍ଥି

6. Give an account of dentition in mammals.

ସ୍ତନ୍ୟପାୟୀମାନଙ୍କ ଦନ୍ତବିନ୍ୟାସର ଏକ ବିବରଣୀ ପ୍ରଦାନ କର ।

OR

ଅଥବା

Write notes on the following :

ନିମ୍ନଲିଖିତଗୁଡ଼ିକର ବିବରଣୀ ପ୍ରଦାନ କର :

(a) Distribution of animals

ଜୀବମାନଙ୍କ ବିସ୍ତୃତି

(b) Prototheria

ଆଦିସ୍ତନ୍ୟପାୟୀ

2017

Time : As in Programme

Full Marks : 50

The figures in the right-hand margin indicate marks.

*Answer **all** questions from both the Groups.*

Group – A

କ – ବିଭାଗ

(Short-answer Type Questions)

(କ୍ଷୁଦ୍ର-ଉତ୍ତରମୂଳକ ପ୍ରଶ୍ନ)

1. Answer the following questions to the point : 1×10 = 10

ନିମ୍ନଲିଖିତ ପ୍ରଶ୍ନଗୁଡ଼ିକର ସଂକ୍ଷିପ୍ତ ନିର୍ଦ୍ଦିଷ୍ଟ ଉତ୍ତର ପ୍ରଦାନ କର :

(a) Name the inner epithelial lining of blood vessel.

ରକ୍ତନଳୀର ଭିତର ପାର୍ଶ୍ୱରେ ଥିବା ଅଧିଚ୍ଛଦର ନାମ ଲେଖ ।

(b) What is the function of Osteoclasts ?

ଓଷ୍ଟିଓକ୍ଲୋଷ୍ଟର କାର୍ଯ୍ୟ କ'ଣ ?

(c) Define a multipolar neuron.

ବହୁମେରୁୟ ସ୍ନାୟୁକୋଷର ସଂଜ୍ଞା ଲେଖ ।

(d) Sequentially name the bones present in middle ear.

ମଧ୍ୟକର୍ଣ୍ଣରେ ଥିବା ଅସ୍ଥିଗୁଡ଼ିକର ନାମ କ୍ରମାନ୍ୱୟରେ ଲେଖ ।

(e) Why can cardiac muscle fibres contract for longer period than skeletal muscle fibres ?

ହୃତ୍‌ପିଣ୍ଡରେ ଥିବା ପେଶୀତନ୍ତୁଗୁଡ଼ିକ କଙ୍କାଳପେଶୀଠାରୁ କାହିଁକି ଅଧିକ ସମୟ ପର୍ଯ୍ୟନ୍ତ ସଂକୋଚନ ହୋଇପାରେ ?

(f) Differentiate between red muscle and white muscle.

ଲୋହିତ ପେଶୀ ଓ ଶ୍ୱେତ ପେଶୀ ମଧ୍ୟରେ ପାର୍ଥକ୍ୟ ଦର୍ଶାଅ ।

(g) What is the name of the sac that protects the testicles ?

ଅଣ୍ଡକୋଷକୁ ସୁରକ୍ଷା ଦେଉଥିବା ଥଳୀର ନାମ ଲେଖ ।

(h) What is the contraceptive of choice in a lactating female ?

କ୍ଷୀର କ୍ଷରିତ ହେଉଥିବା ମହିଳାମାନଙ୍କ ପାଇଁ ସବୁଠାରୁ ଭଲ ଗର୍ଭନିରୋଧକ ଉପାୟ କ'ଣ ?

(i) Which cells of testis secrete the hormone testosterone ?

ଟେଷ୍ଟୋଷ୍ଟିରନ ହରମୋନ୍ ଶୁକ୍ରାଶୟର କେଉଁ କୋଷରୁ କ୍ଷରିତ ହୁଏ ?

(j) Which is the main second messenger for a large number of hormones ?

ଅନେକଗୁଡ଼ିଏ ହରମୋନ୍ ପାଇଁ କିଏ ମୁଖ୍ୟ ଦ୍ୱିତୀୟ ବାର୍ତ୍ତାବହ ?

Group – B

ଖ – ବିଭାଗ

2. Define tissue. Give an account of structure, classification and function of epithelial tissue. 1+7 = 8

ଟିସୁର ସଂଜ୍ଞା ଲେଖ । ଅଧିଚ୍ଛେଦୀୟ ଟିସୁର ଗଠନ, ଶ୍ରେଣୀ ବିଭାଗ ଓ କାର୍ଯ୍ୟ ସମୂହର ଏକ ବିବରଣୀ ପ୍ରଦାନ କର ।

OR

ଅଥବା

Write notes on the following :

ନିମ୍ନଲିଖିତଗୁଡ଼ିକର ବିବରଣୀ ପ୍ରଦାନ କର :

(a) Bone resorption

ଅସ୍ଥିର ପୁନର୍ଲୟନ

(b) Neuron

ସ୍ନାୟୁକୋଷ

3. Explain the origin and propagation of action potential along a myelinated nerve fibre. 2+6 = 8

କାର୍ଯ୍ୟଦକ୍ଷର ଉତ୍ପତ୍ତି ଓ ପ୍ରସାର ଏକ ମଜ୍ଜାସ୍ନାୟୁ ବେଷ୍ଟକ ନଥିବା ସ୍ନାୟୁ ତନ୍ତୁର ବର୍ଣ୍ଣନା କର ।

OR

ଅଥବା

Write notes on the following :

ନିମ୍ନଲିଖିତଗୁଡ଼ିକର ବିବରଣୀ ପ୍ରଦାନ କର :

(a) Reflex action

ପ୍ରତିବର୍ତ୍ତୀ କ୍ରିୟା

(b) Structure of internal ear

ଅନ୍ତଃ କର୍ଣ୍ଣର ଗଠନ

4. Discuss the molecular and chemical basis of contraction of skeletal muscle. 8

କଙ୍କାଳପେଶୀର ସଂକୋଚନର ଆଣବିକ ଓ ରାସାୟନିକ ଆଧାର ଆଲୋଚନା କର ।

OR

ଅଥବା

Write notes on the following :

ନିମ୍ନଲିଖିତଗୁଡ଼ିକର ବିବରଣୀ ପ୍ରଦାନ କର :

(a) Cardiac muscle

ହୃତ୍ ପେଶୀ

(b) Muscle twitch

ପେଶୀ ଟ୍ୱିଚ୍

5. Give an account of the physiology of human male reproductive system. 8

ମାନବର ପୁଂଜନନ ତନ୍ତ୍ରର କ୍ରିୟାବିଜ୍ଞାନ ସମ୍ବନ୍ଧରେ ଏକ ବିବରଣୀ ପ୍ରଦାନ କର ।

OR

ଅଥବା

Write notes on the following : 4×2 = 8

ନିମ୍ନଲିଖିତଗୁଡ଼ିକର ବିବରଣୀ ପ୍ରଦାନ କର :

(a) Methods of contraception

ଗର୍ଭନିରୋଧକ ଉପାୟ ସମୂହ

(b) Histology of Ovum

ଡିମ୍ବାଶୟର ଟିସୁ ବିଜ୍ଞାନ

6. Discuss the signal transduction pathways utilized by Steroidal and non-steroidal hormones.

4+4 = 8

ଷ୍ଟିରଏଡ୍ ଓ ଅଣଷ୍ଟିରଏଡ୍ ହରମୋନର ସଂକେତ ପରିବହନର ଧାରା ବର୍ଣ୍ଣନା କର ।

OR

ଅଥବା

Write notes on the following :

ନିମ୍ନଲିଖିତଗୁଡ଼ିକର ବିବରଣୀ ପ୍ରଦାନ କର :

(a) Mode of hormone action

ହରମୋନ୍ କାର୍ଯ୍ୟପ୍ରଣାଳୀର ଧାରା

(b) Placental hormones

ଭ୍ରୂଣବନ୍ଧୀୟ ହରମୋନ

2017

Time : As in Programme

Full Marks : 50

The figures in the right-hand margin indicate marks.

*Answer **all** questions from **both** the Groups.*

Give necessary diagram.

Group – A

କ – ବିଭାଗ

1. Comment on : 10

ଉଲ୍ଲେଖ କର :

(a) Mucous gland

ମ୍ୟୁକସ୍ ଗ୍ରନ୍ଥି

(b) Air sac

ବାୟୁ ଥଳି

(c) Aortic arch

ଆଓର୍‌ଟିକ୍ ଆର୍‌ଚ୍

(d) Pronephros

ପ୍ରୋନେଫ୍ରୋସ୍

(e) Spinal chord

ସ୍ନାୟୁ ଦଣ୍ଡ

Group – B

ଖ – ବିଭାଗ

2. Describe the exoskeletal structures in vertebrates. 10

ମେରୁଦଣ୍ଡୀମାନଙ୍କର ବାହ୍ୟ କଙ୍କାଳ ବର୍ଣ୍ଣନା କର ।

OR

ଅଥବା

Discuss the structure and arrangement of air sacs in birds. 10

ପକ୍ଷୀମାନଙ୍କର ବାୟୁ ଥଳିର ଗଠନ ଓ ସଜ୍ଜା ଆଲୋଚନା କର ।

3. Give an account of aortic arches of reptile and mammal. 10

ସରୀସୃପ ଏବଂ ସ୍ତନ୍ୟପାୟୀର ଆଓରଟିକ୍ ଆର୍ଚ୍‌ର ଏକ ବିବରଣୀ ପ୍ରଦାନ କର ।

OR

ଅଥବା

Describe structural anatomy of hearts in vertebrates. 10

ମେରୁଦଣ୍ଡୀମାନଙ୍କର ହୃତ୍‌ପିଣ୍ଡର ଅନ୍ତଃ ଗଠନର ତୁଳନାତ୍ମକ ବିବରଣୀ ପ୍ରଦାନ କର ।

4. Discuss the structure and function of autonomic nervous system in mammal. 10

ସ୍ତନ୍ୟପାୟୀ ସ୍ୱେଚ୍ଛାଚାଳିତ ସ୍ନାୟୁର ଗଠନ ଏବଂ କାର୍ଯ୍ୟ ଆଲୋଚନା କର ।

OR

ଅଥବା

Give suitable description of a vertebrate eye. 10

ମେରୁଦଣ୍ଡୀ ଚକ୍ଷୁର ଉପଯୁକ୍ତ ବର୍ଣ୍ଣନା ପ୍ରଦାନ କର ।

5. Give an account of accessory respiratory organs of fishes. 10

ମାଛମାନଙ୍କର ସହାୟକ ଶ୍ୱସନାଙ୍ଗ ବିଷୟରେ ଏକ ବିବରଣୀ ପ୍ରଦାନ କର ।

OR

ଅଥବା

Describe the different types of jaw suspension in vertebrates. 10

ମେରୁଦଣ୍ଡୀ ପ୍ରାଣୀମାନଙ୍କର ବିଭିନ୍ନ ପ୍ରକାର ମାଢି ସଂଯୋଗ ବିଷୟରେ ବର୍ଣ୍ଣନା କର ।

2018

Full Marks : 50

Time : $2\frac{1}{2}$ Hours

The figures in the right-hand margin indicate marks.

Answer all the questions.

Draw labelled diagrams wherever necessary.

1. Write short notes on the following: $2\frac{1}{2}\times4=10$
   a) Anamniotes and Amniotes
   b) Cephalo Chordata
   c) Chondrichthyes
   d) Platetectonics Theory

2. Give an account of parental care in fishes. 10

OR

Write notes on the following: 5×2=10

a) Echinoderm theory of origin of chordates
b) Advance features of vertebrates over protochordates

[Turn over]

3. Discuss the origin and ancestory of tetrapoda. 10

OR

Write notes on the following: 5×2=10

a) Give an account of general characteristics and classification of cyclostomes upto class with examples
b) Osmoregulation in fishes

4. Discuss migration in birds. 10

OR

Discuss general characteristics and classification of class, aves upto order with examples. 10

5. Discuss poisonous apperatus and biting mechanism in snakes. 10

OR

Write notes on the following: 5×2=10

a) Affinities of metatheria
b) Zoogeographical realms

2018

Full Marks : 50

Time : $2\frac{1}{2}$ Hours

The figures in the right-hand margin indicate marks.

Answer all the questions.

Draw labelled diagrams wherever necessary.

1. Write short notes on the following: $2\frac{1}{2} \times 4 = 10$

   a) Ossification

   b) Glial cells

   c) Motor unit

   d) Adrenal hormones

2. Give an account of the structure, classification, location and function of muscular tissue. 10

OR

Discuss the structure and function of vertebrate neuron. 10

3. What do you mean by reflex action? Explain the mechanism of simple reflex action by showing the path of reflex arc in a vertebrate giving suitable example. Add a note on types of reflex action. https://www.odishastudy.com 10

OR

Write notes on the following: $5 \times 2 = 10$

a) Structure and types of cartilages

b) Action potential

4. Discuss the structure, classification, location and function of connective tissues. 10

OR

Write notes on the following: $5 \times 2 = 10$

a) Explain the negative feedback mechanism in hormone action with example, to control metabolic rate in a vertebrate.

b) Structure and Function of thyroid gland.

5. Discuss the location, structure of pituitary gland with function of hormones secreted from it. 10

OR

Write notes on the following: 5×2=**10**

a) Histology of testis

b) Ovarian cycle

2018

Full Marks : 50

Time : $2\frac{1}{2}$ Hours

The figures in the right-hand margin indicate marks.

Answer all the questions.

Draw labelled diagrams wherever necessary.

1. Write short notes on the following: $2\frac{1}{2} \times 4 = 10$

   a) Tri-Gcylglycerols

   b) m-RNA

   c) Structure of a nucleotide

   d) Lineweaver-Burk plot

2. Describe the chemical structure and biological importance of polysaccharides with examples. Add a note on glycoconjugates. 10

OR

Give an account of structure and significance of unsaturated fatty acids. Add a note on glycolipids.

[Turn over]

3. With reference to different bonds describe the primary, secondary, tertiary and quaternary structure of protein. 10

OR

Give an account of the structure and function of different types of RNA. 10

4. Discuss the structure, classification and general properties of non-essential amino acids. Add a note on their physiological importance. 10

OR

Write notes on the following: $5 \times 2 = 10$

a) Cot curves

b) Types of DNA

5. What are enzymes? Explain the mechanism of enzyme action with reference to Lock and Key theory and induced-fit theory. Add a note on effects of different factors on enzyme action. 10

OR

Write notes on the following: $5 \times 2 = 10$

a) Physiological importance of essential amino acids

b) Antigenic determinants

2018

Time : As in Programme

Full Marks : 50

The figures in the right-hand margin indicate marks.

Answer all questions.

1. Define each of the following questions in **one** sentence : 1×10 = 10

ନିମ୍ନଲିଖିତ ପ୍ରତ୍ୟେକର ସଂଜ୍ଞା ଗୋଟିଏ ବାକ୍ୟରେ ପ୍ରଦାନ କର :

(a) Metamorphosis

ରୂପାନ୍ତର

(b) Chordata

ମେରୁଦଣ୍ଡୀ

(c) Skull

ଖପୁରି

(d) Prototheria

ଆଦିସ୍ତନ୍ୟପାୟୀ

(e) Appendage

ଉପାଙ୍ଗ

(f) Living Fossil

ଜୀବନ୍ତ ଜୀବାଶ୍ମ

(g) Acrodont

ଆକ୍ରୋଡଣ୍ଟ

(h) Zoo-geography

ପ୍ରାଣୀ-ଭୂଗୋଳ

(i) Cetacea

ସିଟାସିଆ

(j) Shield

ଢାଲ

2. Discuss larval forms of Protochordata. 8

ଆଦିମେରୁଦଣ୍ଡୀମାନଙ୍କର ଲାର୍ଭାଗୁଡ଼ିକୁ ଆଲୋଚନା କର ।

OR

କିମ୍ବା

Describe echinoderm theory of origin of Chordates.

ମେରୁଦଣ୍ଡୀମାନଙ୍କର ଉତ୍ପତ୍ତିର ଇଚିନଡର୍ମ ତତ୍ତ୍ୱ ବର୍ଣ୍ଣନା କର ।

3. Explain structural peculiarities of **Petromyzon**. 8

ପେଟ୍ରୋମାଇଜନ୍‌ର ଗଠନଗତ ବୈଶିଷ୍ଟ୍ୟ ବ୍ୟାଖ୍ୟା କର ।

OR

କିମ୍ବା

Enlist advanced features of vertebrates over Protochordates. 8

ଆଦିମେରୁଦଣ୍ଡୀମାନଙ୍କ ତୁଳନାରେ ମେରୁଦଣ୍ଡୀମାନଙ୍କର ଉନ୍ନତ ବୈଶିଷ୍ଟ୍ୟଗୁଡ଼ିକର ତାଲିକା ପ୍ରସ୍ତୁତ କର ।

4. Give an account of migration of fish. 8

ମତ୍ସ୍ୟମାନଙ୍କ ପ୍ରବାଜର ଏକ ବିବରଣୀ ପ୍ରଦାନ କର ।

OR

କିମ୍ବା

Explain parental care in Amphibia. 8

ଉଭୟଚର ଅପତ୍ୟ ଯତ୍ନ ବ୍ୟାଖ୍ୟା କର ।

5. Write an account on poison apparatus and biting mechanism of snakes. 8

ସର୍ପମାନଙ୍କର ବିଷଗ୍ରନ୍ଥି ଓ କାମୁଡ଼ା ପଦ୍ଧତିର ଏକ ବିବରଣୀ ଉଲ୍ଲେଖ କର ।

OR

କିମ୍ବା

State flight adaptation in Aves. 8

ପକ୍ଷୀମାନଙ୍କର ଉଡ଼ନ୍ତା ଉପଯୋଜନ ଦର୍ଶାଅ ।

6. Enlist affinities of Prototheria. 8

ଆଦିସ୍ତନ୍ୟପାୟୀମାନଙ୍କ ସମ୍ପର୍କର ତାଲିକା ପ୍ରସ୍ତୁତ କର ।

OR

କିମ୍ବା

Discuss adaptative radiation in Mammals. 8

ସ୍ତନ୍ୟପାୟୀମାନଙ୍କର ଉପଯୋଜନ ବିଜିରଣ ଆଲୋଚନା କର ।

+3-IIIS-CBCS-Sc(H)
Core-6 — Zool
(R & B)

2018

Time : As in Programme

Full Marks : 50

The figures in the right-hand margin indicate marks.

*Answer **all** questions.*

1. Define each of the following in **one** sentence : 1×10 = 10

ନିମ୍ନ ପ୍ରତ୍ୟେକର ସଂଜ୍ଞା ଗୋଟିଏ ବାକ୍ୟରେ ପ୍ରଦାନ କର :

(a) Epithelial tissue
ଅଧିଚ୍ଛଦ ଟିସୁ

(b) Bone
ଅସ୍ଥି

(c) Neuron
ସ୍ନାୟୁକୋଷ

(d) Skeletal muscle
ଜଙ୍ଘାଡ ପେଶୀ

(e) White muscle
ଶ୍ୱେତ ପେଶୀ

(f) Cardiac muscle
ହୃତ୍ ପେଶୀ

(g) Hormone
ହରମୋନ୍

(h) Gland
ଗ୍ରନ୍ଥି

(i) Pituitary gland
ପୋଷ ଗ୍ରନ୍ଥି

(j) Reflex action
ପ୍ରତିକ୍ଷିପ୍ତ କ୍ରିୟା

2. **State structure, types and function of connective tissue.** 8

ସଂଯୋଜକ ଟିସୁର ଗଠନ, ପ୍ରକାର ଓ କାର୍ଯ୍ୟ ବର୍ଣ୍ଣାଅ ।

OR

କିମ୍ବା

Write notes on the following : 4×2 = 8

ନିମ୍ନଲିଖିତଗୁଡ଼ିକର ବିବରଣୀ ପ୍ରଦାନ କର :

(a) Nervous tissue
ସ୍ନାୟୁ ଟିସୁ

(b) Osteoblast
ଅସ୍ଥି ଓ ବ୍ଲାଷ୍ଟ

3. Discuss the physiology of vision. 8

ଦୃଷ୍ଟିର ଶରୀରତତ୍ତ୍ୱ ଆଲୋଚନା କର ।

OR

କିମ୍ବା

Write notes on the following : 4×2 = 8

ନିମ୍ନଲିଖିତଗୁଡ଼ିକର ବିବରଣୀ ପ୍ରଦାନ କର :

(a) Neuromuscular junction

ସ୍ନାୟୁପେଶୀ ସନ୍ଧି

(b) Synaptic Transmission

ସାଇନାପ୍ସ ସଂଚରଣ

4. Discuss muscle contraction. 8

ମାଂସପେଶୀ ସଂକୋଚନ ଆଲୋଚନା କର ।

OR

କିମ୍ବା

Write notes on the following : 4×2 = 8

ନିମ୍ନଲିଖିତଗୁଡ଼ିକର ବିବରଣୀ ପ୍ରଦାନ କର :

(a) Motor unit

ମୋଟର ଏକକ

(b) Tetanus

ଟିଟାନସ୍

5. Give an account of human male reproductive system. 8

ମନୁଷ୍ୟ ପୁରୁଷ ପ୍ରଜନନ ତନ୍ତ୍ରର ଏକ ବିବରଣୀ ପ୍ରଦାନ କର ।

OR

କିମ୍ବା

Write notes on the following : 4×2 = 8

ନିମ୍ନଲିଖିତଗୁଡ଼ିକର ବିବରଣୀ ପ୍ରଦାନ କର :

(a) Puberty

ବୟଃ ପ୍ରାପ୍ତ

(b) Structure of sperm

ଶୁକ୍ରର ଗଠନ

6. **Discuss the structure of pituitary and hormones of adenohypophysis.**

ପୋଷଗ୍ରନ୍ଥିର ଗଠନ ଓ ଏହାର ଅଗ୍ରଭାଗ ହରମୋନ୍‌ଗୁଡ଼ିକ ଆଲୋଚନା କର ।

OR

କିମ୍ବା

Write notes on the following : 4×2 = 8

ନିମ୍ନଲିଖିତଗୁଡ଼ିକର ବିବରଣୀ ପ୍ରଦାନ କର :

(a) Regulation of hormones

ହରମୋନ୍ ନିୟନ୍ତ୍ରଣ

(b) LH

ଏଲ୍. ଏଚ୍

+3-IIIS-CBCS-Sc(H)
Core-7 — Zool
(R & B)

2018

Time : As in Programme

Full Marks : 50

The figures in the right-hand margin indicate marks.

Answer all questions.

1. **Define each of the following in one sentence :** **1×10 = 10**

ନିମ୍ନଲିଖିତ ପ୍ରତ୍ୟେକଟିର ସଂଜ୍ଞା ଗୋଟିଏ ବାକ୍ୟରେ ପ୍ରଦାନ କର :

(a) Integument

ଆଚ୍ଛାଦ

(b) Skin

ଚର୍ମ

(c) Gill

ଗାଲି

(d) Air sac

ପବନ ଥଳି

(e) Kidney

ବୃକ୍କ

(f) Nerve

ସ୍ନାୟୁ

(g) Uterus

ଜରାୟୁ

(h) Receptor

ସଂବେଦକ

(i) Circulation

ସଂଚାଳନ

(j) Fish

ମତ୍ସ୍ୟ

2. Discuss the feathers of birds. 8

ପକ୍ଷୀମାନଙ୍କର ପର ବିଷୟରେ ଆଲୋଚନା କର ।

OR

କିମ୍ବା

Explain the structural details of human skin.

ମନୁଷ୍ୟ ଚର୍ମର ଗଠନ ବିଶଦ ଭାବରେ ବ୍ୟାଖ୍ୟା କର ।

3. Describe the accessory respiratory organs of fishes. 8

ମତ୍ସ୍ୟମାନଙ୍କର ସହାୟକ ଶ୍ୱସନାଙ୍ଗ ବର୍ଣ୍ଣନା କର ।

OR

ଜିୟା

Give an account of liver of man.

ମନୁଷ୍ୟ ଯକୃତର ଏକ ବିବରଣୀ ପ୍ରଦାନ କର ।

4. Mention general plan of blood circulation. 8

ରକ୍ତ ସଂଚାଳନର ସାଧାରଣ ପ୍ରକ୍ରିୟା ଦର୍ଶାଅ ।

OR

ଜିୟା

Discuss the aortic arches of reptiles.

ସରୀସୃପମାନଙ୍କର ମହାଧମନୀ ଚାପ ଆଲୋଚନା କର ।

5. Elaborate the types of mammalian uterus. 8

ସ୍ତନ୍ୟପାୟୀ ଜରାୟୁ ପ୍ରକାରଭେଦ ବ୍ୟାଖ୍ୟା କର ।

OR

ଜିୟା

Discuss the succession of kidney.

ବୃକ୍କର ପର୍ଯ୍ୟାୟ ଆଲୋଚନା କର ।

6. Narrate the cranial nerves of mammal with illustration. 8

ଚିତ୍ର ସହ ସ୍ତନ୍ୟପାୟୀମାନଙ୍କର କରୋଟି-ସ୍ନାୟୁ ବର୍ଣ୍ଣନା କର ।

OR

ଜିୟା

Give an account of chemoreceptors.

ରସାୟନ ସଂବେଦଜଗୁଡିକର ଏକ ବିବରଣୀ ପ୍ରଦାନ କର ।

2019

ZOOLOGY

(*Diversity and Distribution of Chordates*)

[Honours]

Paper—V

Full Marks : 60

Time : 3 hours

Answer **all** questions

The figures in the right-hand margin indicate marks

Draw labelled diagrams wherever necessary

GROUP – A

1. Answer any *nine* questions : 2×9

(*a*) What is stomochord and where is it located in Balanoglossus ?

(*b*) Where do we find the wheel organ, what is its function ?

(*c*) What are the two types of specules in Herdmania ?

(*d*) Define Agnatha and give examples.

(*e*) What is catadromous migration ?

(*f*) Name any two amphibians which belong to the order-Urodela.

(*g*) Name living reptiles one each of (*i*) diapsid skull and (*ii*) anapsid skull.

(*h*) Which organs of birds used as steering and balancing during flight ?

(*i*) What are the reptilian characters seen in Archaeopteryx ?

(*j*) Give two examples of monotremes and state where they are found.

(*k*) What is diphyodont dentition ?

(*l*) Name two mammals of cursorial form.

GROUP – B

Answer **all** questions 14×3

2. Give an account of structural peculiarities and affinities of cyclostomes. 14

Or

Write notes on the following : 7×2

(*i*) Tornaria larva

(*ii*) Matamorphosis of Ascidian tadpole.

3. Discuss the origin and ancestry of Amphibia. 14

Or

Write notes on the following : 7×2

(*i*) Sphenodon

(*ii*) Morphological adaptation for flight.

4. Describe the structural organization and affinities of prototheria. 14

Or

Write notes on the following : 7×2

(*i*) Dentition in mammals

(*ii*) Continental Drift theory.

2019

ZOOLOGY

(*Physiology Controling and Coordinating System*)

[Honours]

Paper – VI

Full Marks : 60

Time : 3 hours

Answer **nine** questions from Group-A
and **all** question from Group-B

The figures in the right-hand margin indicate marks

Draw labelled diagrams wherever necessary

GROUP–A

1. Answer any *nine* questions : 2 × 9

(*a*) What is squamous epithelium ? Where it is found.

(*b*) Mention three types of Cartilages.

(*c*) What do you mean by Reflex arc.

(*Turn Over*)

(*d*) What is saltatory propagation of impulse ?

(*e*) What are the contractile molecules of muscle fibre.

(*f*) What is puberty ?

(*g*) How and where corpus luteum is formed.

(*h*) Which hormones are secreted from ovary.

(*i*) Name steroidal hormones secreted from Adrenal gland.

(*j*) Compare physiological effect of insulin and glucagon.

(*k*) Which hormones are secreted from Adeno-hypophysis.

(*l*) Define muscle twitch.

GROUP–B

Answer **all** questions : 14 × 3

2. Discuss the origin of action potential and its propagation across the nerve fibres. 14

Or

Write notes on the following : 7 × 2

(*i*) Compound epithelium

(*ii*) Areolar conective tissue.

3. Explain molecular and chemical basis of muscle contraction. 14

Or

Write notes on the following : 7 × 2

(*i*) Histology of female reproductive system

(*ii*) Physiology of reproduction of male.

4. Give an account of structure and functions of hormones of thyroid gland. 14

Or

Write notes on the following : 7 × 2

(*i*) Mode of hormone action

(*ii*) Neurohypophysis.

+3 3rd Sem

Zoo(H)-VII

2019

Full Marks : 60

Time : 3 Hours

The figures in the right-hand margin indicate marks.

Draw labelled diagrams wherever necessary.

Answer all the questions.

1. Choose the right answer: 1×16=16

i) Sugars differing in configuration at a single asymmetric centre are called:

a) Isomers

b) Anomers

c) Epimers

d) None

ii) Lactose, a disaccharide commonly found in milk is made up of:

a) glucose and galactose

b) glucose and fructose

c) glucose and glucose

d) glucose and mannose

[Turn over]

iii) The storage form of glucose in animal cell is:

a) Starch

b) Cellulose

c) Hemicellulose

d) Glycogen

iv) Cellulose is a homopolymers of D-glucose residues linked together by :

a) α-1,4- glycosidic bonds

b) β-1,4-glycosidic bonds

c) α-1,6- glycosidic bonds

d) β-1,6-glycosidic bonds

v) The length of the fatty acid Palmitate is:

a) 12 carbons

b) 14 carbons

c) 16 carbons

d) 18 carbons

vi) Steroid hormones like testosterone are derived from:

a) phospholipid

b) glycolipid

c) cholesterol

d) sphingolipid

vii) Sulfur containing amino acids are:
- a) Cystein and Methionine
- b) Glycine and Alanine
- c) Aspartate and Asparagines
- d) Lysine and Arginine

viii) The antibody which are secreted in the mother's milk is:
- a) lgA
- b) lgD
- c) IgG
- d) IgM

ix) The bond that play key role in maintaining the three dimensional structure of a protein is:
- a) Hydrogen Bond
- b) Disulfide bond
- c) Vander waal interaction
- d) Peptide pond

x) Which of the following molecules possess highest antigenicity?
- a) DNA
- b) Carbohydrate
- c) Protein
- d) None

xi) The total number of standard amino acids found in human body is:
- a) 15
- b) 12
- c) 20
- d) 25

xii) The nitrogenous base that is found in DNA but not in RNA is:
- a) Cytosine
- b) Uracil
- c) Thiamine
- d) Guanine

xiii) Which of the following nitrogenous base is/ are pyrimidine type?
- a) Cytosine
- b) Uracil
- c) Thiamine
- d) All of the above

xiv) How many hydrogen bonds are found between Guanine and Cytosine in a double stranded DNA molecule?
- a) 2
- b) 1
- c) 3
- d) 0

xv) A co-enzyme or a metal ion that is very tightly or even covalently bound to the enzyme protein is called:

a) Holoenzyme
b) Apoprotein
c) Prosthetic group
d) None

xvi) Substrate analog inhibits enzyme activity through_____inhibition mechanism.

a) Competitive
b) Uncompetitive
c) Non-competitive
d) All of the above

2. Answer any **eight** questions from the following. Each question carries 1.5 marks. $1\frac{1}{2} \times 8 = 12$

i) Why we cannot digest cellulose found in vegetable?

ii) What are isozymes?.

iii) What is antigen?

iv) Write the chemical structure of triacylglycerol.

v) What is activation energy?

vi) What is the difference between Nucleoside and Nucleotide?

vii) Why is membrane lipids amphipathic in nature?

viii) What is Michaelis Menten constant K_m?

ix) What is Allosteric enzyme?

x) What is secondary structure of protein?

3. Answer any **eight** questions. Each question carries 2 marks: $2 \times 8 = 16$

i) Why sucrose is the transport form of carbohydrate in blood?

ii) Write the role of carbohydrate in ABO blood grouping. https://www.odishastudy.com

iii) Why linoleic and linolenic acid is considered as essential fatty acid?

iv) Write two physiological importance of cholesterol.

v) Why DNA has poor antigenecity compared to that of proteins?

vi) Write two physiological importance of Arachidonic acid.

vii) Write the physiological importance of SiRNA.

viii) Write two important differences between starch and glycogen.

ix) Write the Lineweaver-Burk equation and plot it.

x) Write in brief about the non-competitive inhibition of enzymes.

4. Answer any **two** questions. Each question carries 8 marks. 8×2 =16

i) Describe various classes of immunoglobulin and add a note on their functions.

ii) What is enzyme kinetics? Derive Michaelis-Menten Equation and plot the equation.

iii) What are homopolysaccharides? Describe the structure and biological importance of starch.

iv) What is Cot Curve? Discuss different types of DNA and add a note on their importance.

2019

Time : As in Programme

Full Marks : 50

*Answer **all** questions as per direction. The figures in the right-hand margin indicate marks.*

1. ନିମ୍ନଲିଖିତ ପ୍ରତ୍ୟେକର ସଂଜ୍ଞା ଗୋଟିଏ ବାକ୍ୟରେ ପ୍ରଦାନ କର : 1×10

(*a*) ଡାଇପ୍ଲିଯୁରୁଲା

(*b*) ଡିମ୍ବ

(*c*) ମାଡ଼ିହୀନ

(*d*) ମେରୁଦଣ୍ଡା

(*e*) କାତି

(*f*) ସିନାପ୍‌ସିଡ଼ା ଖପୁରି

(*g*) ବିଷଦାନ୍ତ

(*h*) ନଦୀମୁହାଁ ପ୍ରବାଜ

(*i*) ଉଷ୍ଣରକ୍ତବିଶିଷ୍ଟ

(*j*) ଆର୍କିଓପ୍ଟେରିକ୍‌ସ

Define each of the following in one sentence :

(*a*) Dipleurula

(*b*) Egg

(*c*) Agnatha

(*d*) Vertebrata

(*e*) Scale

(*f*) Synapsida skull

(*g*) Fang

(*h*) Anadromous migration

(*i*) Homeotherm

(*j*) *Archaeopteryx*

2. ଅର୍ଦ୍ଧ ମେରୁଦଣ୍ଡାଙ୍କ ସାଧାରଣ ବୈଶିଷ୍ଟ୍ୟ ଆଲୋଚନା କର । 8

Discuss general characters of Hemichordata.

ଅଥବା / OR

ନିମ୍ନଲିଖିତଗୁଡ଼ିକର ଟିପ୍ପଣୀ ଲେଖ : 4×2

(*a*) ପୁଚ୍ଛମେରୁଦଣ୍ଡା

(*b*) ଆଦିମେରୁଦଣ୍ଡାଙ୍କ ଲାର୍ଭା

Write notes on the following :

(*a*) Urochordata

(*b*) Larva of protochordatas

3. ଚକ୍ରମୁହଁଙ୍କର ସାଧାରଣ ବୈଶିଷ୍ଟ୍ୟର ତାଲିକା ପ୍ରସ୍ତୁତ କର । 8

Enlist the general characters of cyclostomata.

ଅଥବା / OR

ନିମ୍ନଲିଖିତଗୁଡ଼ିକର ଟିପ୍ପଣୀ ଲେଖ : 4×2

(*a*) ମିକ୍‌ସିନ୍‌ର ଗଠନ

(*b*) ଚକ୍ରମୁହଁଙ୍କର ବିଶେଷତ୍ୱ

Write notes on the following :

(*a*) Structure of *Myxine*

(*b*) Peculiarities of Cyclostomata

4. ମତ୍ସ୍ୟମାନଙ୍କର ଜାତି ସମ୍ବନ୍ଧରେ ବର୍ଣ୍ଣନା କର । 8

Describe scales in fishes.

ଅଥବା / OR

ନିମ୍ନଲିଖିତଗୁଡ଼ିକର ଟିପ୍ପଣୀ ଲେଖ : 4×2

(*a*) ଜୀବନ୍ତ ଉଭୟଚରଙ୍କ ବର୍ଗ

(*b*) ଉଭୟଚରଙ୍କ ବୈଶିଷ୍ଟ୍ୟ

Write notes on the following :

(*a*) Orders of living Amphibia

(*b*) Characters Amphibia

5. ସର୍ପମାନଙ୍କର ବିଷଦାନ୍ତ ବ୍ୟାଖ୍ୟା କର । 8

Explain the fangs of snakes.

ଅଥବା / OR

ନିମ୍ନଲିଖିତଗୁଡ଼ିକର ଟିପ୍ପଣୀ ଲେଖ : 4×2

(*a*) ସରୀସୃପମାନଙ୍କ ଖପୁରି

(*b*) ଉଡ଼ନ୍ତା ଉପଯୋଜନ

Write notes on the following :

(*a*) Skull in Reptilia

(*b*) Flight adaptation

6. ସ୍ତନ୍ୟପାୟୀଙ୍କ ସାଧାରଣ ବୈଶିଷ୍ଟ୍ୟର ତାଲିକା ପ୍ରସ୍ତୁତ କର । 8

Enlist the general characters of mammals.

ଅଥବା / OR

ନିମ୍ନଲିଖିତଗୁଡ଼ିକର ଟିପ୍ପଣୀ ଲେଖ : 4×2

(*a*) ଉପଯୋଜନ ବିକିରଣ

(*b*) ଥଳି ସ୍ତନ୍ୟପାୟୀ

Write notes on the following :

(*a*) Adaptive radiation

(*b*) Pouched mammal

2019

Time : As in Programme

Full Marks : 50

*Answer **all** questions as directed. The figures in the right-hand margin indicate marks.*

1. ନିମ୍ନଲିଖିତ ପ୍ରତ୍ୟେକର ସଂଜ୍ଞା ଗୋଟିଏ ବାକ୍ୟରେ ପ୍ରଦାନ କର : 1×10

(*a*) ଗଳଗ୍ରନ୍ଥି

(*b*) ଅନ୍ତଃସ୍ରାବୀଗ୍ରନ୍ଥି ବିଜ୍ଞାନ

(*c*) ସ୍ନାୟୁ

(*d*) ଭ୍ରୂଣପୁଷ୍ପ

(*e*) ବୟଃପ୍ରାପ୍ତ

(*f*) ପ୍ରଜନନ

(*g*) ପୁଷ୍ଟି ହରମୋନ୍

(*h*) ଶୁକ୍ରାଶୟ

(*i*) ପ୍ରତିକ୍ଷିପ୍ତ ଗୃପ

(*j*) ଅଧିବୃକ୍କ

Define each of the following in one sentence :

(*a*) Thyroid gland

(*b*) Endocrinology

(*c*) Nerve

(*d*) Placenta

(*e*) Puberty

(*f*) Reproduction

(*g*) Trophic hormone

(*h*) Testis

(*i*) Reflex arc

(*j*) Adrenal

2. ଅସ୍ଥି ଅଭିବୃଦ୍ଧିର ଏକ ବିବରଣୀ ପ୍ରଦାନ କର । 8

Give an account of growth of bone.

ଅଥବା / OR

ନିମ୍ନଲିଖିତଗୁଡ଼ିକର ଟିପ୍ପଣୀ ଲେଖ : 4×2

(*a*) ଅଧିଚ୍ଛଦ ଟିସ୍ୟୁ

(*b*) ମାଂସପେଶୀ ଟିସ୍ୟୁ

Write notes on the following :

(*a*) Epithelial tissue

(*b*) Muscular tissue

3. ଶ୍ରୁତିର ଶରୀରତତ୍ତ୍ୱ ଆଲୋଚନା କର । 8

Discuss the physiology of hearing.

ଅଥବା / OR

ନିମ୍ନଲିଖିତଗୁଡ଼ିକର ଟିପ୍ପଣୀ ଲେଖ : 4×2

(*a*) ସ୍ନାୟୁକୋଷ ଗଠନ

(*b*) ଶଙ୍କୁ

Write notes on the following :

(*a*) Structure of neuron

(*b*) Cones

4. କଙ୍କାଳ ମାଂସପେଶୀର ସୂକ୍ଷ୍ମଗଠନ ବ୍ୟାଖ୍ୟା କର । 8

Explain the ultrastructure of skeletal muscle.

ଅଥବା / OR

ନିମ୍ନଲିଖିତଗୁଡ଼ିକର ଟିପ୍ପଣୀ ଲେଖ : 4×2

(*a*) ମାଂସପେଶୀ ସଙ୍କୋଚନର ଅଣୁଭିତ୍ତି

(*b*) ସଞ୍ଜେସନ

Write notes on the following :

(*a*) Molecular basis of muscle contraction

(*b*) Summation

5. ମହିଳାମାନଙ୍କ ପ୍ରଜନନ ତନ୍ତ୍ରର ଏକ ବିବରଣୀ ପ୍ରଦାନ କର । 8

Give an account of human female reproductive system.

ଅଥବା / OR

ନିମ୍ନଲିଖିତଗୁଡ଼ିକର ଟିପ୍ପଣୀ ଲେଖ : 4×2

(*a*) ଗର୍ଭନିରୋଧ

(*b*) ଶୁକ୍ରାଶୟର ଟିସ୍ୟୁ ଅଧ୍ୟୟନ

Write notes on the following :

(*a*) Contraception

(*b*) Histology of testis

6. ଗଳଗ୍ରନ୍ଥିର ଗଠନ ଓ କାର୍ଯ୍ୟ ବର୍ଣ୍ଣନା କର । 8

Describe the structure and function of thyroid gland. https://www.odishastudy.com

ଅଥବା / OR

ନିମ୍ନଲିଖିତଗୁଡ଼ିକର ଟିପ୍ପଣୀ ଲେଖ : 4×2

(*a*) ଥାଇମସ୍

(*b*) ଭ୍ରୂଣପୁଷ୍ଟ ହରମୋନ୍

Write notes on the following :

(*a*) Thymus

(*b*) Placental hormones

2019

Time : As in Programme

Full Marks : 50

*Answer **all** questions as directed. The figures in the right-hand margin indicate marks.*

1. ନିମ୍ନଲିଖିତ ପ୍ରତ୍ୟେକର ସଂଜ୍ଞା ଗୋଟିଏ ବାକ୍ୟରେ ପ୍ରଦାନ କର : 1×10

(*a*) ରେଚନ

(*b*) ପର

(*c*) ସ୍କ୍ୟୁଟ୍

(*d*) ଶିଙ୍ଗ

(*e*) ଦଣ୍ଡ

(*f*) ସ୍ତନ୍ୟପାୟୀ

(*g*) ନ୍ୟୁରନ୍

(*h*) ଘ୍ରାଣ ସ୍ନାୟୁ

(*i*) ଆଦିବୃକ୍କ

(*j*) ଯକୃତ

Define each of the following in one sentence :

(*a*) Excretion

(*b*) Feather

(*c*) Scute

(*d*) Horn

(*e*) Rod

(*f*) Mammal

(*g*) Neuron

(*h*) Olfactory nerve

(*i*) Nephridia

(*j*) Liver

2. ସ୍ତନ୍ୟପାୟୀ ପ୍ରାଣୀଙ୍କ ଆଚ୍ଛାଦ ଆଲୋଚନା କର । 8

Discuss the integuments of mammals.

ଅଥବା / OR

ମେରୁଦଣ୍ଡୀ ପ୍ରାଣୀଙ୍କ ହନୁ ନିଲମ୍ବନ ବ୍ୟାଖ୍ୟା କର ।

Explain jaw suspensorium in vertebrates.

https://www.odishastudy.com

3. ପକ୍ଷୀମାନଙ୍କର ବାୟୁ ଥଳି ବର୍ଣ୍ଣନା କର । 8

Describe air sacs in birds.

ଅଥବା / OR

ମତ୍ସ୍ୟମାନଙ୍କର ଗାଲିର ଏକ ବିବରଣୀ ପ୍ରଦାନ କର ।

Give an account of gills of fishes.

4. ମେରୁଦଣ୍ଡୀମାନଙ୍କ ହୃତ୍‌ପିଣ୍ଡର ବିବର୍ତ୍ତନ ଦର୍ଶାଅ । 8

Project the evolution of heart in vertebrates.

ଅଥବା / OR

ବେଙ୍ଗ ଓ ମନୁଷ୍ୟ ରକ୍ତର ସଂଗ୍ଳନ ତୁଳନା କର ।

Compare the circulation of blood between frog and man.

5. ମେରୁଦଣ୍ଡୀମାନଙ୍କ ରେଚନ ପ୍ରଜନନ ନଳାଗୁଡ଼ିକର ବିବର୍ତ୍ତନ ଦର୍ଶାଅ । 8

State the evolution of urinogenital ducts in vertebrates.

ଅଥବା / OR

ସ୍ତନ୍ୟପାୟୀ ବୃକ୍‌କର ଗଠନଗତ ଆକୃତି ବିଶଦ ଭାବରେ ବର୍ଣ୍ଣନା କର ।

Describe the structural details of mammalian kidney.

6. ସ୍ତନ୍ୟପାୟୀ ପ୍ରାଣୀଙ୍କ ସୁଷୁମ୍ନା ସ୍ନାୟୁଗୁଡ଼ିକ ଦର୍ଶାଅ । 8

Mention the spinal nerves of mammal.

ଅଥବା / OR

ଦୃଶ୍ୟ ସବେଦକଗୁଡ଼ିକର ଏକ ବିବରଣୀ ଉଲ୍ଲେଖ କର ।

Write an account of visual receptors.

SH ZOO–05

3rd Semester Examination, 2020

Time : 3 hours

Full Marks : 60

Answer any **one** Group as per your syllabus

Answer from **all** the Sections as per direction

The figures in the right-hand margin indicate marks

Candidates are required to answer in their own words as far as practicable

GROUP – A

(MODEL SYLLABUS)

(DIVERSITY OF CHORDATES)

SECTION – A

1. Answer following questions using *one* word only: 1×8

(*a*) What type of metamorphosis is found in ascidian tadpole larvae ?

(*b*) Notochord develops from which germ layers of chordates.

(*c*) Write the name of accessory respiratory organ in *Anabas*.

(*d*) Give an example of Limbless amphibia.

(*e*) How many chambers are there in the heart of Crocodiles.

(*f*) Pygostyle in birds is the fusion product of _____ bones. (Fill up the blank with right term)

(*g*) Give an example of Sea cows.

(*h*) Brazilian sub-region belongs to which zoo-geographical realm.

SECTION – B

2. Answer any *eight* of the following questions within *two* to *three* sentences each : $1\frac{1}{2} \times 8$

(*a*) Why Urochordates are also known as tunicates ?

(*b*) Write down three important characteristics of chordates.

(*c*) What do you mean by ectothermic animals ?

(*d*) Why Petromyzon is classified as Agnatha ?

(*e*) Write down any two flight adoptive features of birds.

(*f*) Write one sentence each about neurotoxin and haemotoxin Venom.

(*g*) To which Zoogeographical realm India and Madagascar belongs.

(*h*) What do you mean by Dipleurula ?

(*i*) Write two important characteristics of Prototheria.

(*j*) What is Viviparity in amphibians ?

SECTION – C

3. Answer any *eight* of the following questions within *75* words each : 2 × 8

(*a*) Differentiate between Craniate and Acraniata.

(*b*) Write short notes on Cephalochordata.

(*c*) Differentiate between Chondrichthyes and Osteichthyes.

(*d*) Write short notes on Dipnoi.

(*e*) Why spherodon is considered as a living fossil ?

(*f*) Why Archaeopterix is a connecting link between reptiles and birds.

(*g*) Differentiate between arboreal and aerial mode of locomotion in mammals.

(*h*) Write short notes on metatherian mammals.

(*i*) Write short notes on Sinapsidon Reptiles.

(*j*) Write short notes on Hemichordata.

SECTION – D

4. Answer the questions within *500* words each with suitable diagrams wherever necessary : 6 × 4

(*a*) Write a note on Dipleurula concept and the origin of chordates.

Or

Give an account of retrogressive metamorphosis in urochordata.

(*b*) Describe Parental care in amphibia.

Or

Write a note on Migration in fishes.

(*c*) Describe biting mechanism in Snakes.

Or

Give an account of flight adoptations in birds.

(*d*) Write a note on Plate tectonic and Continental drift theory.

Or

Describe about Zoogeographical realms.

GROUP – B

(OLD SYLLABUS)

(BIOLOGY OF CHORDATA)

SECTION – A

1. Answer the following : 2 × 6

(*a*) Flight muscle

(*b*) Ascidian tadpole larva

(*c*) Bunodont

(*d*) Placoid scales

(*e*) Diurnal migration

(*f*) Flying mammals.

SECTION – B

Answer all questions : **12 × 4**

2. Describe the structural peculiarities and affinities of Petromyzon. **12**

Or

Write notes on : 2 × 6

(*i*) Retrogressive metamorphosis

(*ii*) General character Urochordata.

3. Discuss parental care in Amphibians. 12

Or

Write notes on : 2 × 6

(*i*) General character of Pisces

(*ii*) General character of Amphibians.

4. Discuss affinities of Sphenodon. 12

Or

Write notes on : 2 × 6

(*i*) *Archaeopteryx*

(*ii*) Poison apparatus.

5. Give an account of dentition in mammals. 12

Or

Write notes on : 2 × 6

(*i*) Prototheria

(*ii*) Metatheria.

SH ZOO—06

3rd Semester Examination, 2020

Time : 3 hours

Full Marks : 60

Answer any **one** Group as per your syllabus

Answer from **all** the Sections as per direction

The figures in the right-hand margin indicate marks

Candidates are required to answer in their own words as far as practicable

GROUP – A

(MODEL SYLLABUS)

(PHYSIOLOGY-CONTROLLING AND COORDINATING SYSTEM)

SECTION – A

1. Answer the following questions using only *one* word : 1×8

(*a*) Simple epithelium covering alveoli of lungs is _____ epithelium.

(*b*) Cells responsible for destruction of osteocytes in a bone is called _____ .

(*c*) Fluid present inside anterior chamber of eye is called _____ .

(*d*) Neuromuscular junction is the contact between muscle fibre and _____ neuron.

(*e*) Which cells provide nourishment to spermatozoa inside seminiferous tubule.

(*f*) During ovulation cell that sheds from the mammalian ovary is called ____ Oocyte.

(*g*) Enzyme that forms cyclic AMP from ATP is called _____ .

(*h*) Leaching of calcium from bones is due to a hormone called _____ .

SECTION – B

2. Answer any *eight* of the following questions within *two* to *three* sentences each : $1\frac{1}{2} \times 8$

(*a*) What is the role of Haversian canal in bone tissue ?

(*b*) Write two important characteristics of connective tissue.

(*c*) What is saltatory conduction ?

(*d*) What are ear ossicles ?

(*e*) How FSH and oestrogen are related ?

(*f*) What is menarche ?

(*g*) Write two point difference between insulin and glucagon.

(*h*) What is a neurohormone ?

(*i*) What is liquor folliculi ?

(*j*) Write two point difference between 'A'-band and 'I' band.

SECTION – C

3. Answer any *eight* of the following questions within *75* words : 2 × 8

(*a*) Differentiate between voluntary and involuntary muscle.

(*b*) Write short notes on neuron.

(*c*) Differentiate between sensory and motor nerve.

(*d*) Write short notes on reflex action.

(*e*) Write short notes on chorionic gonadotropin.

(*f*) Differentiate between Graafian follicle and Corpus luteum.

(*g*) Write short notes on adrenal cortex.

(*h*) Briefly describe structure of thyroid gland.

(*i*) Write short notes on organ of corti.

(*j*) Briefly describe the histology of seminiferous tubules.

SECTION – D

4. Answer the following questions within *500* words with suitable diagrams wherever necessary : 6 × 4

(*a*) Describe bone growth and resorption.

Or

Write a note on epithelial tissue.

(*b*) Describe molecular and chemical basis of muscle contraction.

Or

Write a note on synaptic transmission.

(*c*) Describe the role of Hypothalamus-Pituitary and gonadal axis in reproduction.

Or

Give an account of method of contraception in male and female.

(*d*) Describe the mechanism of hormone action with a suitable example.

Or

Describe Hypothalamus as the master of mastergland in endocrine system.

GROUP – B

(OLD SYLLABUS)

(CONTROLLING AND COORDINATING SYSTEM)

SECTION – A

1. Answer the following : 2 × 6

(*a*) Tendon

(*b*) *Beta*-Cells

(*c*) Muscle twitch

(*d*) Second messengers

(*e*) Resting potential

(*f*) Reflex arc.

SECTION – B

Answer **all** questions : 12 × 4

2. Give an account of the structure and function of epithelial tissue. 12

Or

Write notes on : 6 × 2

(*i*) Areolar tissue

(*ii*) Cartilage.

3. What is a synapse ? Discuss the mechanism of synaptic transmission. 12

Or

Write notes on : 6 × 2

(*i*) Structure of neuron

(*ii*) Neuromuscular junction.

4. Give an account of ultrastructure of skeletal muscles. 12

Or

Write notes on : 6 × 2

(*i*) Cardiac muscle

(*ii*) Muscle tetanus.

5. Discuss the structure and function of thyroid gland. 12

Or

Write notes on : 6 × 2

(*i*) Hypothalamus

(*ii*) Pineal gland.

SH ZOO—07

3rd Semester Examination, 2020

Time : 3 hours

Full Marks : 60

Answer any **one** Group as per your Syllabus

Answer from **all** the Sections as per direction

The figures in the right-hand margin indicate marks

Candidates are required to answer in their own words as far as practicable

GROUP – A

(MODEL SYLLABUS)

(FUNDAMENTALS OF BIOCHEMISTRY AND MICROBIOLOGY)

SECTION – A

1. Answer the following questions using only *one* word : 1×8

(*a*) Give an example of glycoconjugate.

(*b*) Common sugar is composed of glucose and _____.

(*c*) Give an example of sulphur containing amino acid.

(*d*) In immunoglobulins heavy chains and light chains are connected by _____ bonds.

(*e*) Only protein part of the enzyme is called as _____.

(*f*) In allosteric enzymes regulators bind to the _____ site of the enzyme.

(*g*) What is the genetic material of a viroid ?

(*h*) Give an example of gram negative bacteria.

SECTION – B

2. Answer any *eight* of the following questions within *two* or *three* sentences each : $1\frac{1}{2} \times 8$

(*a*) What is a tetrose sugar ?

(*b*) What is an unsaturated fatty acid ?

(*c*) What kind of weak interactions are there in beta sheet structure of protein ?

(*d*) How renaturation brings native conformation to proteins ?

(*e*) $K_m = [S]$ at $\frac{1}{2} V_{max}$, (Write this statement without using abbreviations).

(*f*) How temperature affects enzyme actions ?

(*g*) What is the genetic material of HIV ? What type of virus it is ?

(*h*) Which bacteria causes tuberculosis ? Structurally its cell wall is made up of _____ ?

(*i*) What is a Prion ?

(*j*) What do you mean by non-essential amino acid ?

SECTION – C

3. Answer any *eight* of the following within *75* words each : 2×8

(*a*) Differentiate between saturated and unsaturated fatty acids.

(*b*) Write short notes on steroids.

(*c*) Draw the labelled diagram of amino acids like alanine and proline or valine and serine.

(*d*) Briefly describe about conjugated proteins.

(*e*) Write short notes on Isozymes.

(*f*) Briefly describe about competitive inhibitor of enzyme action.

(*g*) Differentiate between gram +ve and gram –ve bacteria.

(*h*) Write short notes on swine flu.

(*i*) Draw a neat labelled diagram of λ-phage.

(*j*) Write short notes on Triacylglycerols.

SECTION – D

4. Answer the following questions within *500* words each with suitable diagram wherever necessary : 6×4

(*a*) Describe structure and biological importance of polysaccharides.

Or

Write notes on phospholipids and their importance in cell membrane.

(*b*) What are amino acids ? Describe their general properties.

Or

Write notes on structure and function of different types of immunoglobulins.

(*c*) Describe about mechanism of enzyme action with suitable examples.

Or

Derive Michaelis-Menten equation.

(*d*) Describe reproduction in Bacteria.

Or

Write short notes on Typhoid and Zika fever.

GROUP – B

(OLD SYLLABUS)

(COMPARATIVE ANATOMY OF VERTEBRATES)

SECTION – A

1. Answer the following : 2×6

(*a*) Pronephros

(*b*) Glenoid cavity

(*c*) Metachrosis

(*d*) Ductus caroticus

(*e*) External gills

(*f*) Rods and cones.

SECTION – B

Answer **all** questions : 12×4

2. Give an account of derivatives of integuments. 12

Or

Write notes on : 6×2

(*i*) Autostylic jaw suspensions

(*ii*) Appendicular skeleton of mammal.

3. Give an account of comparative anatomy of esophagus, stomach and intestine of birds and mammals. 12

Or

Write notes on : 6×2

(*i*) Air sacs

(*ii*) Internal gills.

4. Give an account of evolution of aortic arches in vertebrates. 12

Or

Write notes on : 6×2

(*i*) Metanephros

(*ii*) Double circuit heart.

5. Discuss the structure and function of mechanoreceptors. 12

Or

Write notes on : 6×2

(*i*) Diencephalon

(*ii*) Cranial nerves.

2020

Time : As in Programme

Full Marks : 60

The figures in the right-hand margin indicate marks.

Answer from ***all*** *the Parts as directed.*

Draw labelled diagram wherever necessary.

Part – I

1. Fill in the blanks (any **four**) : 2×4 = 8

   (a) The tissues that are sheets of cells covering the body surface is known as _____ tissue.

   (b) _____ connects muscles to bones.

   (c) Auto-rhythmicity is a special property of _____ muscles.

   (d) Part of neurons that receives impulses and convey it towards the cell body are known as _____.

   (e) Supporting cells present in seminiferous tubules are called _____ cells.

   (f) The process of expulsion of secondary oocytes from Graafian Follicle is known as _____.

   (g) The alpha cells of Islet of Langerhans produce _____.

   (h) Hormones produces by anterior pituitary is also known as _____ hormone.

Part – II

2. Answer any **four** of the following questions in **two** or **three** sentences each : 3×4 = 12

   (a) What is Haversian System ?

   (b) What are endocrine glands ? Give one example.

   (c) Define synapse.

   (d) What are photoreceptors ?

   (e) Name the three types of muscles. Where are they located ?

   (f) What is Graafian Follicle ?

   (g) Define puberty.

Part – III

3. Write notes on any **four** of the following within **50** words each and draw labelled diagrams wherever specified : 4×4 = 16

   (a) Connective tissue

   (b) Osteoclast

   (c) Sarcomere

   (d) Resting membrane potential

   (e) Seminiferous tubules

   (f) Placental hormones

   (g) Thyroid

   (h) Adenohypophysis

   (i) Draw a labelled diagram of neuron

   (j) Cartilage

Part – IV

4 Answer **three** following questions within **300** words each (draw diagram wherever necessary) : 8×3 = 24

   (a) Give an account of epithelial tissue.

OR

Describe the process of ossification of bones.

   (b) Describe the ultrastructure of skeletal muscle.

OR

Discuss generation and propagation of action potential across unmyelinated nerve fibre.

   (c) Describe the male reproductive system.

OR

Give a detailed account of ovarian cycle. What are the different methods of contraception in female ?

   (d) Discuss the histological structure of pancreas, hormone produced by pancreas and their functions.

OR

Mechanism of non-steroidal hormone action.

———— ❖ ————

2020

Time : As in Programme

Full Marks : 60

The figures in the right hand margin indicate marks
*Answer from **all** the Parts as directed*

Part – I

1. Fill in the blanks : 2×4 = 8

   (a) _____ is the main structural polysaccharide of the exoskeleton of arthropods.

   (b) _____ are made uncharged ester of three fatty acid and a glycerol.

   (c) The amino acids are held together in a protein by covalent _____ bonds.

   (d) _____ is the first immunoglobulin produced in a primary immune response.

   (e) James Sumner in 1926 isolated and crystallized _____ enzyme.

   (f) According to International Union of Biochemistry system of classification the enzymes are classified into _____ major classes

Part – II

2. Define any **four** of the following terms within **two** or **three** sentences each : 3×4 = 12

   (a) What are polysaccharides ?

   (b) What are the essential fatty acids ? Give one example.

   (c) What are antigenic determinants ?

   (d) Define tertiary structure.

   (e) What is Holoenzyme ?

   (f) Define allosteric effector

   (g) Define Isozymes.

Part – III

3. Write notes on any **four** of the following within **50** words each and draw labelled diagrams wherever specified : 4×4 = 16

   (a) Stereoisomerism in monosaccharide.

   (b) Phospholipids.

(c) General structure of amino acids.

(d) Conjugate proteins.

(e) Enzyme specificity.

(f) Classification of enzymes.

(g) Active site of enzyme.

Part – IV

4. Answer **three** questions within **300** words each. Draw diagram wherever necessary. $8 \times 3 = 24$

(a) Whar are carbohydrates ? Describe the various types of charbohydrates.

OR

Describe Fatty acids. Add a note on its biological significance.

(b) Describe the levels of organizations in protein.

OR

What are immunoglobulins ? Discuss the different classes of immunoglobulins and their functions.

(c) What is Michaelis-Menten Kinetics ? Derive the Michaelis-Menten's equation.

OR

Discuss the regulation of enzyme action in living system.

(d) Write, in detail, about classification of bacteria.

OR

Discuss the importance of microbes in the field of agriculture.

2020

Time : As in Programme

Full Marks : 60

The figures in the right-hand margin indicate marks.

*Answer from **all** the Parts as directed.*

Draw diagram wherever necessary.

Part – I

1. Fill in the blanks (any **four**) 2×4 = 8

   (a) The thick, yellowish fluid secreted by mammary glands of female soon after delivery is called _____.

   (b) _____ are substances that protect our body cells against the effect of free redicles.

   (c) Indigestible polysaccharide with high fibre content that help in elimination of faces are called _____ or dietary fibres.

   (d) _____ proteins are composed of simple protein combined with non-protein substance.

   (e) Xerophathalmia is caused due to deficiency of _____.

   (f) _____ is a form of severe malnutrition caused by deficiency of both protein and carbohydrate.

Part – II

2. Define any **four** of the following terms within two **or** three sentences each : 3×4 = 12

   (a) Nutrients

   (b) Phytochemicals

   (c) Compound lipids

   (d) Essential amino acids

   (e) Rickets

   (f) Endemic Goiter

   (g) Body Mass Index (BMI)

Part – III

3. Write notes on any **four** of the following within **50** words each : 4×4 = 16

   (a) Balance diet

   (b) Components of food

   (c) Mal-nutrition

(d) Compound lipids

(e) Biological functions of calcium

(f) Kwashiorkor

(g) Obesity

Part – IV

4. Answer **three** questions within **300** words each : 8×3 = 24

(a) Discuss nutrient needs and dietary patterns of school going children.

OR

Discuss nutrient needs and dietary patterns of pregnant and nursing mothers.

(b) Write in detail the classification, dietary source and role of carbohydrates.

OR

Discuss in detail the various fat-soluble vitamins, their dietary sources and importance.

(c) What is diabetes mellitus ? Discuss its cause and its prevention (through dietary and lifestyle modifications).

OR

What is Acquired Immuno Deficiency Syndrome ? Describe their cause, prevention and treatments.

(d) Describe in detail the various sources of potable water and its methods of purification at domestic level.

OR

Discuss the transmission, causative agent, sources of infection, symptoms and prevention of Poliomyelitis.

SH ZOO—05

3rd Semester Examination, 2021

Time : 3 hours

Full Marks : 60

Answer from **all** the Parts as per direction

The figures in the right-hand margin indicate marks

Candidates are required to answer in their own words as far as practicable

(MODEL CBCS)

(DIVERSITY AND DISTRIBUTION OF CHORDATES)

PART – I

1. Answer the following questions in *one* word or fill in the blanks : 1×8

(*a*) The common name of Balanoglossus is _____.

(*b*) All the sea squirts belong to the sub-phylum _____.

(*c*) Tail of cyclostomes is _____.

(*d*) South African lungfishes belong to the genus _____.

(*e*) All snakes belong to the order_____.

(*f*) The Experiment with Starlings to show that day migrants use sun as a compass was done by_____.

(*g*) Whales and dolphins belong to the order _____.

(*h*) _____ postulated plate tectonic theory.

PART – II

2. Answer any *eight* questions within *two* to *three* sentences each: $1\frac{1}{2} \times 8$

(*a*) Differentiate between acrania and craniata.

(*b*) Write three common fundamental Chordate characters.

(*c*) What represents the highest degree of parental care in fishes ?

(*d*) What are regarded as the possible ancestors of modern amphibia ?

(*e*) What is Archaeopteryx ? From where was it first discovered ?

(*f*) What is the basis of reptilian classification ?

(*g*) What are regarded as the unifinished mammals and why ?

(*h*) What are the theories pertaining to the distribution of animals ?

(*i*) Distinguish between Lampray and Hagfish ?

(*j*) Why sphenodon is regarded as a living fossil ?

PART – III

3. Write notes on any *eight* of the following questions within *75* words each : 2 × 8

(*a*) Dipleurura concept

(*b*) General characters of Cephalochordata

(*c*) Chondrichthyes

(*d*) Agnatha

(*e*) Branchial diverticula

(*f*) Affinities of Sphenodon

(*g*) Types of fangs

(*h*) Problems of bird migration

(*i*) Affinities of Prototheria

(*j*) Continental Drift Theory

PART – IV

Answer the following questions within *500* words each : 6 × 4

4. Give an account of retrogressive metamorphosis in Herdmania.

Or

Discuss general characteristics of chordates. Give an outline classification of it.

5. Write an essay on fish migration.

Or

Give an account of parental care in amphibia.

6. Briefly describe the biting mechanism of snakes.

Or

Give an account of flight adaptations in birds.

7. Discuss the adaptive radiations with reference to locomotory appendages in mammals.

Or

What are zoogeographical realms ? Mention the distribution of vertebrates in these realms.

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1. The ciliated columnar epithelium is present in _____ .

Ans: bronchioles and Fallopian tube

2. _____ types of cells line blood vessels.

Ans: Squamous Epithelium

3. Gap, tight and adhering junctions are found in _____ .

Ans: Epithelial Tissue

4. _____ types of epithelial cells form Stratum germinativum.

Ans: Columnar

5. An epithelial tissue having thin flat and closely packed cells that are arranged edge to edge are found in _____ .

Ans: the inner lining of cheeks

6. _____ layer has actively dividing cells.

Ans: Malpighi

7. Tissue having very less or no intercellular matrix is _____ .

Ans: Epithelial

8. The inner lining of the vagina, urethra and oesophagus is made up of _____ .

Ans: Stratified squamous epithelium

9. Simple cuboidal epithelium is found in _____ , _____ and _____ .

Ans: Thin bronchioles, Choroid of eye and Sweat gland

10. Lining layer of fallopian tubes, bronchi and bronchioles consists of _____ .

Ans: Ciliated epithelium

11. Transitional epithelium is found on _____ .

Ans: Urinary bladder

12. Lining of intestine of man is _____ .

Ans: Brush bordered

13. Compound tubular gland is _____ .

Ans: Brunner's gland

14. Globet cells of intestinal epithelium are examples of _____ .

Ans: Columnar epithelium

15. Epithelium of bronchi is _____ .

Ans: Pseudo stratified ciliated columnar

16. Compound tissue is defined as _____ .

Ans: Different types of cells performing one function

17. Curved portion of the Henle's loop of the nephrons are lined by _____ .

Ans: Squamous Epithelium

18. Endothelium blood vessels is made up of _____ .

Ans: Simple squamous epithelium

19. Non keratinized stratified epithelium occurs in _____ .

Ans: Vagina, cervix, buccal cavity and anus

20. Gap, tight and adhering junctions are found in _____ .

Ans: Epithelial tissue

21. _____ types of epithelial cells form Stratum germinativum.

Ans: Columnar

22. An epithelial tissue having thin flat and closely packed cells that are arranged edge to edge are found in _____ .

Ans: the inner lining of cheeks

23. _____ layer has actively dividing cells.

Ans: Stratum malpighi

24. Tissue having very less or no intercellular matrix is _____ .

Ans: Epithelial

25. The inner lining of the vagina, urethra and oesophagus is made up of _____ .

Ans: Stratified squamous epithelium

26. In comparison to human erythrocytes, frog's erythrocytes are _____ .

Ans: nucleated and with haemoglobin

27. Tip of the nose and external ears have _____ .

Ans: cartilage

28. Mast cells contain _____ .

Ans: heparin and histamine

29. The largest extracellular material present in the _____ .

Ans: Areolar tissue

30. Peptidoglycan present in the cartilage is _____ .

Ans: chondroitin

31. Antibodies are secreted by _____ .

Ans: plasma cells

32. Histamine is secreted by _____ .

Ans: mast cells

33. Ligament is a modified _____ .

Ans: yellow elastic fibrous tissue

34. Collagen is _____ protein.

Ans: fibrous protein

35. _____ contains the largest quantity of extracellular material.

Ans: Areolar tissue

36. When collagen fibres are removed from the areolar tissue, tissue becomes _____ and _____ .

Ans: loose and elastic

37. Body's weight is formed by connective tissue occupying _____%.

Ans: 30%

38. The types of fibres found in connective tissues are _____ , _____ , and _____ .

Ans: Collagan fibres, Elastic fibres and Reticular fibres

39. Below the skin, the fat is in the form of _____ .

Ans: Adipose tissue

40. Whale is a warm-blooded animal which lives in cold sea. Which organ of its body makes it hot _____ .

Ans: Blubber

41. Primary function of subdermal fat in the skin of mammals is _____ .

Ans: To act as a heat proof matter

42. _____ is not a fibrillar protein.

Ans: Albumin

43. Camel's hump is made up of _____ .

Ans: Adipose tissue

44. The giant cell is formed by the fusion of _____ .

Ans: Macrophage

45. _____ cells of connective tissue secrete antibodies.

Ans: Plasma cells

46. The areolar tissue connects _____ .

Ans: Muscles and their compound

47. Debove's membrane is a layer of _____ .

Ans: Connective tissue

48. Histiocyte is a connective tissue cell, the function of which is _____ .

Ans: Phagocytic

49. The main function of connective tissue is _____ .

Ans: Binding together other tissues / Supporting various parts of the body / Forming a packing around organs

50. Connective tissue is _____ .

Ans: Mesodermal in origin with intercellular spaces

51. Ligaments and tendons are _____ .

Ans: Fibrous connective tissue

52. The main difference in white and yellow fibres is of _____ and _____ .

Ans: Protein and colour of the fibres

53. _____ cells is phagocytic in nature.

Ans: Macrophages

54. Vitreous humor is a _____ connective tissue.

Ans: Mucoid connective tissue

55. Function of adipose tissue is _____ .

Ans: Fat storing tissue, Helps in homeothermy, Acts as shock absorber (can write any one of the function)

56. _____ helps in maintaining body hot.

Ans: Adipose tissue

57. _____ tissue helps in maintaining body hot.

Ans: Adipose tissue

58. The ground substance of connective tissue is basically composed of _____ .

Ans: Mucopolysaccharides

59. Adipocytes are mainly found in _____ .

Ans: Connective tissue

60. The connective tissue that connects the skin to the underlying structures is _____ .

Ans: Areolar tissue

61. Ligament is a modifed _____ .

Ans: yellow elastic fibrous tissue

62. Rapid healing of wounds is found in _____ .

Ans: Epithelial tissue

63. _____ characteristic of yellow fibres of connective tissue.

Ans: Provide toughness and strength

64. _____ is a loose connective tissue.

Ans: Areolar

65. In mammals, histamine is secreted by _____ .

Ans: Mast cells

66. Reticular connective tissue is found in _____ .

Ans: Spleen

67. White adipose tissue contains _____ .

Ans: Unilocular fat cells

68. Mast cells are found in _____ .

Ans: Connective tissue

69. New born mammals generally do not shiver inspite of lower temperature outside because of _____ .

Ans: Brown fat which has larger capacity for generating heat

70. Cartilage are present in the _____ ear.

Ans: outer

71. The cartilage is composed of cells called _____ .

Ans: chondrocytes

72. Bone cells are called _____ .

Ans: osteocytes

73. The matrix which surrounds bone cells is heavily impregnated with _____.

Ans: calcium phosphate

74. _____ suspends specialized red and white blood cells and platelets.

Ans: Plasma

75. _____ function is/are performed by blood connective tissue.

Ans: Transports various substances throughout the bodies of animals

76. Division of joints allowing ample movement between 2 or more specific heads of bones are grouped as _____ .

Ans: Diarthrosis

77. Ligaments restrict this action _____ .

Ans: hyper extension and hyper flexion

78. In muscle contraction, this ion is essential _____ .

Ans: Ca

79. This is an example of stretch reflex stimulated by passive muscle movement _____ .

Ans: patellar reflex

80. This is a major energy source in a hurdle race to the leg muscles _____ .

Ans: oxidative metabolism

81. Muscles utilized for controlling the flow of all substances within lumen are grouped as _____ .

Ans: smooth muscles

82. Division of joints fibrous in nature permitting no movement is _____ .

Ans: synarthroses

83. A small band of dense, white and fibrous elastic tissue is grouped as _____ .

Ans: ligament

84. In the striated muscles, the functional unit of contractile system is _____ .

Ans: sarcomere

85. The tissue which is composed of excitable cells is _____ .

Ans: Muscles tissues

86. The structure of muscle cells have ability to _____.

Ans: contract

87. Composition of microfilaments is _____ , _____ , and _____ .

Ans: Contractile proteins, Actin and myosin

88. _____ types of muscles tissue are present in the body of vertebrate animals.

Ans: 3

89. Skeletal muscles are also called _____ .

Ans: Striated muscles

90. _____ type of muscles is responsible for the voluntary movements of the body.

Ans: Skeletal muscles

91. The type of muscles which form the contractile wall of the heart is _____ .

Ans: Cardiac muscles

92. Like skeletal muscles, cardiac muscles are also called _____ .

Ans: Striated muscles

93. The ends of _____ muscle cells are joined by structures called intercalated discs.

Ans: Cardiac muscles

94. _____ tissue is responsible for the control of the body and also for communication among different body parts.

Ans: Nervous tissues

95. In _____ and _____ the nervous tissue found in the body of eukaryotes.

Ans: Central nervous system and
Peripheral nervous system

96. The two categories of cells found in nervous tissue are _____ and _____ .

Ans: neurons and neuroglia

97. Among the different types of nervous tissue's cells, _____ cell is highly specialized nerve cell that generate and conduct nerve impulses.

Ans: Neuron

98. A typical neuron consists of _____ , _____ , and _____ .

Ans: Dendrites, an axon and the cell body

99. _____ are responsible for responding to stimuli.

Ans: Dendrites

100. In contrast to dendrites, _____ are responsible for transmitting impulses over long distances from cell body.

Ans: Axons

101. The cell body is like a factory for the _____.

Ans: Neuron

102. Cell body produces all the proteins and contains specialized organelles such as _____ , _____ and _____ .

Ans: nucleus, Nissl bodies and granules

103. There is a cellular layer, outside the _____ called the neurilemma.

Ans: myelin sheath

104. In the peripheral nervous system, _____ cells are neuroglia cells that support neuronal function by increasing the speed of impulse propagation.

Ans: Schwann cells

105. Neuronal cell body consists of a/an _____ and rough endoplasmic reticulum or Nissl Bodies.

Ans: nucleus

106. The two types of neuron processes are _____ and _____ .

Ans: dendrites and axons

107. _____ type of neuron convey incoming messages towards the cell body and is therefore called the receptive input region.

Ans: Dendrite

108. The axon can have terminal branches _____ .

Ans: many

109.

Unit 3: Reproductive System
Group-A

I. Fill in the blanks. [carrying 1mark each

1. _____ is the structural and functional unit of testis?

Ans: Seminiferous tubule

2. Interstitial cells produce _____ hormone.

Ans: Testosterone

3. _____ hormone is responsible for the development of male secondary sexual characters?

Ans: Testosterone

4. The mature ovum passes into the fallopian tube through_____ .

Ans: Ostium

5. Sertoli cells are found in _____ organ of mammals.

Ans: Testis

6. Sertoli cells provide nutrition to _____.

Ans: Sperm

7. The Leydig's cells in human are the secretory source of _____ hormone.

Ans: Androgen

8. In a sperm, mitochondria occurs in _____.

Ans: Middle piece

9. _____ hormone is responsible for the inhibition of ovulation.

Ans: Progesterone

10. Sertoli cells are found in _____.

Ans: Seminiferous tubules

11. The capsule enclosing testis of human is _____.

Ans: Tunica albuginea

12. _____ is the unpaired gland in male reproductive system.

Ans: Prostate gland

13. In many mammals, testes remain outside body cavity in scrotal sacs because _____.

Ans: Spermatogenesis occurs at a temperature lower than that of body

14. Scrotal sac of man is connected with abdominal cavity by _____.

Ans: Inguinal canal

15. The duct which carries sperms from testis and epididymis to penis is _____.

Ans: Vas deferens

16. The skin covering the glans penis is called _____.

Ans: Prepuce

17. The abdominal passage which connects the abdominal cavity with the scrotal sac in mammal is known as _____.

Ans: Inguinal canal

18. Capacitation occurs in _____.

Ans: Female reproductive tract

19. A temporary endocrine gland in the human female body is _____.

Ans: Corpus luteum

20. Gonadotrophic releasing hormone is a hypothalamic hormone needed in reproduction, acts on _____ .

Ans: Anterior pituitary and stimulates secretion of LH and FSH

21. _____ part of the epididymis receives Vasa Efferentia.

Ans: Caput epididymis

22. _____ is the chromosome number in the Sertoli cells of testis of human male.

Ans: 23 pairs

23. Fertilsation in humans is practically feasible only if _____ .

Ans: The ova and sperms are transported simultaneously to Ampullary-isthmic junction of the Fallopian tube

24. Location of Leydig cells and their secretion are _____ .

Ans: Testis- Testosterone hormone

25. _____ type of cells divide to form sperms and ova.

Ans: Cuboidal cells

26. _____ process is for the transfer of sperms into the female genital tract.

Ans: Insemination

27. _____ one is the male primary sex organ.

Ans: Testis

28. The region where the sperm enters the egg is called _____.

Ans: Reception cone

29. Gubernaculum is the ligamentous connective cord which connects _____.

Ans: Testis to scrotum

30. Spermatozoa matures in _____.

Ans: Epididymis

31. From _____ part of spermatid, acrosome is formed.

Ans: Golgi bodies

32. Cervix communicates with body of uterus through _____.

Ans: Internal os

33. _____ hormone promotes the accessory sexual characters in female.

Ans: Oestrogen

34. The product of 1st maturation division in testis is known as _____.

Ans: Secondary spermatocyte

35. Development of spermatozoa is stimulated by _____ hormone.

Ans: Follicle stimulating hormone

36. _____ number of spermatozoa are produced by a secondary spermatocyte.

Ans: Four

37. The shared terminal duct of the reproductive and urinary system in the human male is _____ .

Ans: Urethra

38. Middle piece of sperm contain _____ .

Ans: Mitochondria and axial filament

39. _____ hormone controls the proliferation of endometrium of uterus in human female.

Ans: Luteinizing hormone

40. _____ is the site of fertilization in human female.

Ans: Fallopian tube

41. Menstrual flow occurs due to the lack of _____ .

Ans: Progesterone

42. Mature ovum enters fallopian tube through _____ .

Ans: Ostium

43. In human menstrual cycle, ovulation occurs _____.

Ans: 14th day

44. _____ develops into corpus luteum after ovulation.

Ans: Graafian follicle

45. Graafian follicle is observed in the ovary of _____ .

Ans: Human female

46. The expanded proximal part of oviduct in female is _____ .

Ans: Fimbriated funnel

47. The part of fallopian tube closest to the ovary is _____ .

Ans: Infundibulum

48. _____ represents a condition where the motility of the sperms is highly reduced.

Ans: Asthenospermia

49. During which stage of oogenesis, the number of chromosomes is reduced to half _____.

Ans: Formation of 1st polar body

50. The first meiotic division occurs during oogenesis occurs in _____ .

Ans: Primary oocyte

51. In human _____ is the ratio of number of gametes produced from male primary sex cell to the number of gametes produced from one female primary sex cell.

Ans: 4:1

52. Extrusion of second polar body from egg nucleus occurs after _____ .

Ans: Entry of sperm but before fertilization

53. The path where male pronucleus fuses with female pronucleus is known as _____.

Ans: Copulation path

54. During fertilization, the sperm acrosome releases ____.

Ans: Hyaluronidase

55. The process of yolk synthesis is known as _____.

Ans: Vitellogenesis

56. During fertilization _____ part of the sperm enters into the egg during fertilization.

Ans: Head

57. Penetration of ovum by sperm during fertilization is assisted by _____ .

Ans: Acrosome

58. The fusion of pronuclei of sperm and ovum is known as _____.

Ans: Amphimixis

59. _____ type of cleavage occurs in the zygote of human female.

Ans: Holoblastic and equal

60. _____ type of extra-embryonic membrane in human female prevents the desiccation of the embryo inside the uterus.

Ans: Allantois

61. A change in amount of yolk and its distribution in the egg will affect ____.

Ans: Pattern of cleavage

62. Mammalian placenta is formed from____.

Ans: Chorionic-Allantois

63. Signals of parturition originates from _____ .

Ans: Both placenta as well as fully developed foetus

64. The first movement of foetus and appearance of hair on its head are usually observed during _____ month of pregnancy.

Ans: 5^{th} month

65. _____ , _____ , and _____ are formed during gastrulation.

Ans: Ectoderm, mesoderm and endoderm

66. Notochord develops from _____ embryonic membrane.

Ans: Mesoderm

67. _____ germ layers develop into liver and pancreas.

Ans: Endoderm

68. _____ initiates metamorphosis in frog.

Ans: Thyroxine

69. Colostrum is the yellowish fluid which is secreted by mother during the initial days of lactation is very essential to impart immunity to the new born infants because it contains _____ .

Ans: Immunoglobulin A

70. Artificial labour pain is created by _____ hormone.

Ans: Oxytocin and prostaglandin

71. The human sperm is ____.

Ans: Round

72. Polar bodies produce _____ .

Ans: Haploid cells

73. Fertilizin and Antifertilizin act as _____.

Ans: Lock and key

74. During cleavage eggs divide into

Ans: Blastomeres

75. Umbilical cord contains _____ .

Ans: Cord blood stem cells

76. Acrosome is filled with _____.

Ans: Digestive enzymes

77. The ____ is a temporary organ which connects a mammalian mother to its foetus.

Ans: Placenta

78. ____ type of asexual reproduction is seen in Paramecium.

Ans: Transverse binary fission

79. ____ type of fission is seen in Euglena.

Ans: Longitudinal Binary fission

80. ____ type of cell division forms the basis for asexual reproduction.

Ans: Mitotic

81. In sexual reproduction, _____ type of cell division is found.

Ans: Meiotic

82. First polar body is formed at _____ stage of oogenesis.

Ans: First meiosis

83. When two dissimilar gametes are fused with each other is called _____.

Ans: Anisogamy

84. The union of similar type of gametes called as _____.

Ans: Isogamy

85. The duration of gestation period in pregnant women is _____.

Ans: 280 days

86. _____ cells of testis secrete testosterone hormone.

Ans: Interstitial cells

87. Oestrogen hormone is secreted by _____ cells of Graafian follicles.

Ans: Follicular cells

88. _____ reproductive organ in woman is homologous to the penis of man.

Ans: Clitoris

89. _____ layer of uterus of woman undergoes significant changes during menstrual cycle.

Ans: Endometrium

90. The outer most layer of uterine wall is called _____.

Ans: Endometrium

91. _____ hormone regulates the changes of uterine endometrium during pregnancy.

Ans: Progesterone

92. The development of embryo occur inside the body of human female is _____.

Ans: Uterus

93. _____ hormone stimulates corpus luteum of ovary to produce progesterone.

Ans: Luteinizing hormone

94. _____hormone is responsible for the growth of mammary glands.

Ans: Oestrogen

95. _____structure of ovary produces Relaxin hormone.

Ans: Corpus luteum

96. _____ hormone of anterior pituitary is responsible for controlling the growth, maintenance and function of gonads.

Ans: Follicle Stimulating Hormone(FSH)

97. The proliferative phase extends up to _____.

Ans: 10-12 days

98. The abnormal small size of breast or mammary glands in female is called ____.

Ans: Hypomastia

99. The middle piece of human sperm is surrounded by a peripheral layer of cytoplasm called _____.

Ans: Manchette

100. Centrioles are located in __-__ part of the sperm.

Ans: Neck

101. The sperm donates _____ to the egg during fertilization which takes part in the formation of nuclear spindle.

Ans: Centriole

102. The acrosome contains _____ enzyme in mammals which helps in penetration of sperm.

Ans: Hyaluronidase

103. _____ hormone regulate the growth, maintenance and function of secondary male sex organs.

Ans: Testosterone

104. _____ hormone regulates the puberty in male

.Ans. Testosterone

105. The presence of functional mammary glands in male is called _____.

Ans: Gynaecomastia

106. Sertoli cells are regulated by _____ hormone of pituitary gland.

Ans: Follicle Stimulating Hormone(FSH)

107. _____ is the Structural and functional unit of Testis.

Ans: Seminiferous tubule

108. Inhibin hormone is secreted from the _____ cell of testis.

Ans: Sertoli cells

109. The process of release of spermatozoa from the seminiferous tubule is called _____.

Ans: Spermiation

110. The beginning of production of sperm in boys is called _____.

Ans: Spermarche

111. In the male reproductive system, sperms are concentrated in the _____.

Ans: Epididymis

112. The absence of living sperms in semen of male is called _____.

Ans: Azoospermia

113. The normal duration of menstrual cycle in human female is _____.

Ans: 28 days

114. The entry of sperm into the vagina is called _____.

Ans: Insemination

115. In females, fertilization takes place in _____ of fallopian tube.

Ans: Ampullary-isthmic junction

116. The germ hill is found in _____ of the ovary.

Ans: Graafian follicle

117. The starting stage of menstruation in girls called _____.

Ans: Menarche

118. A clot of blood found in the remnants of the ruptured Graafian follicle after ovulation to form corpus luteum is called _____.

Ans: Corpus haemorragium

119. _____ produced after the fertilization of ova.

Ans: Zygote

120. The ploidy of first polar body is _____.

Ans: Haploid

121. Human egg undergoes _____ cleavage after fertilization.

Ans: Holoblastic

122. The covering of egg is called _____ membrane.

Ans: Vitelline membrane

123. Polar bodies are formed during the process of _____.

Ans: Oogenesis

124. The cell organelle responsible for the formation of acrosome in sperm is _____.

Ans: Golgi complex

125. The cells formed by the division of zygote are called _____.

Ans: Blastomeres

126. The unicellular zygote undergoes cleavages to form a solid ball of cells called _____.

Ans: Morula

127. The cavity of gastrula is called _____.

Ans: Archenteron

128. The process of union of sperm and ovum is called _____.

Ans: Fertilization

129. The process of acquiring the capacity to fertilize the egg by the sperm is called _____.

Ans: Capacitation

130. Female gametes in human are conveyed from the ovary to the uterus through _____.

Ans: Fimbriated funnel

131. In the cells of testis _____ type of cell division occurs at different phases during the process of spermatogenesis.

Ans: both mitotic and meiotic

132. The process of early mitotic division of zygote is called _____.

Ans: Cleavage

133. The primordial germ cells in the inner lining of seminiferous tubules undergo _____ divisions to form spermatogonia.

Ans: Mitotic

134. The morphogenetic cell movements occur during _____.
Ans: Gastrulation
135. The temporary association between the foetus and uterine wall of the mother is called _____.
Ans: Placenta
136. Labour pain can be induced by the injection of _____ hormone from the external source.
Ans: Oxytocin
137. _____ hormone stimulates lactation after parturition.
Ans: Prolactin
138. _____ number of ova are produced from a single primary oocyte.
Ans: One
139. _____ number of polar bodies are formed from a primary oocyte at the end of Oogenesis.
Ans: Three
140. _____ process establishes the diploid number of chromosomes.
Ans: Fertilization
141. The union of male and female pronuclei is called _____.
Ans: Amphimixis
142. _____ is the first stage of human development.
Ans: Zygote
143. Human Chorionic Gonadotropin is secreted from _____.
Ans: Placenta
144. _____ germ layer contributes to the formation of liver in humans.
Ans: Endoderm
145. The other name of trophoblast cells lying over the embryonic disc is _____.
Ans: Cells of Rauber
146. Cells of germinal epithelium which enter into multiplication phase during gametogenesis are _____.
Ans: Primordial Germ Cells
147. ___-__ name is given to human placenta.
Ans: Chorio-allantoic placenta
148. The outer surface of the Chorion, in humans, develops a number of finger like projections known as _____.
Ans: Chorionic villi
149. _____ foetal membrane takes part in the formation of placenta in man.
Ans: Chorion
150. The process of synthesis of yolk in the oocyte of female is known as _____.
Ans: Vitellogenesis
151. The process in which a zygote divides to form an embryo is called as _____.
Ans: Embryogenesis
152. _____ number of cleavages are completed in 16 celled stage in a human egg.
Ans: Four
153. _____ germ layer gives rise to internal ear.
Ans: Ectoderm
154. _____ type of fertilization occur in the uterus of a human female.
Ans: Internal
155. _____ fluid protects the human embryo.
Ans: Amniotic fluid
156. Central part of ovary is called _____.
Ans: Medulla of ovary / Zona vasculosa
157. Bartholin's gland of female is analogous to ___ ___ gland og male reproductive system.
Ans: Bulbo-urethral glands of male
158. In _____ Phylum, the organisms reproduce by Binary fission.
Ans: Phylum-Protozoa