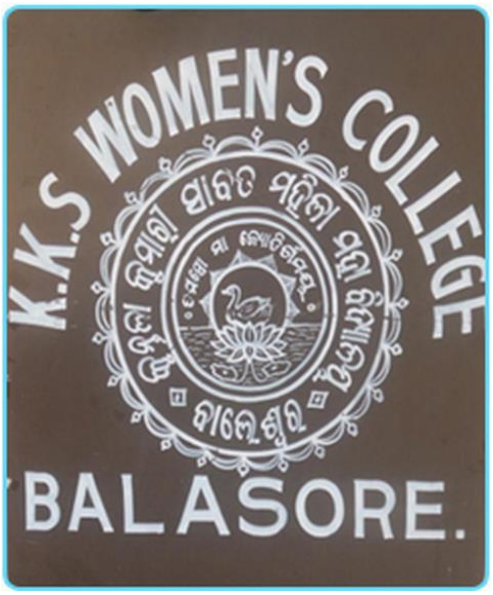

K.K.S. WOMEN'S COLLEGE, BALASORE.

DEPARTMENT OF ZOOLOGY

SUBJECT: ZOOLOGY (HONS.) CC-VIII, CC-IX & CC-X

(IVTH 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. Fill in the blanks : 1 × 8

   a) Ceruminous glands are modified ___ gland.

   b) Digital cernifications are modification of ___ layer.

   c) The Jaw suspension found in bony fishes and elasmobranchs are ___ .

   d) The eighth vertebra of frog is of ___ type.

   e) In ruminating mammal, gastric glands are present in ___ part of stomatch.

   f) In tetrapod embryos, lungs arises as a single midventral diverticulum from ___ .

   g) The Fossa ovalis of heart marks the site of ___.

   h) With the disappearance of pronephros, the old pronephric duct becomes ___ .

Part-II

2. Answer any ***eight*** of the following within two to three sentences each : 1½ × 8

   a) What are the different layers of epidermis in skin of mammal ?

   b) What is preen gland ?

   c) Write different type of dermal scales in fish.

   d) What are type of vertebral based on centrum ?

   e) Write about stomatch of cud-chewing mammal.

   f) Write about avian lungs.

   g) What is hepatic portal system ?

   h) Define pronephros kidney.

   i) Write about internal structure of spinal cord.

   j) What is proprioceptors ?

Part-III

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

   a) What are the different types of horns in mammals ?

b) Write about digital cornification in Mammals.

c) Write different type of process in vertebrae.

d) What are the accessory respiratory organs in vertebrates ?

e) Differentiate between opisthenephros and Holonephros.

f) Write about different type of Mammalian uteri.

g) Write about cranial nerves in Mammals.

h) Give different type of receptors in Vertebrate.

i) Write about auditory recepters in Man.

j) Write about vertebrate appendicular skeleton.

Part-IV

4. a) What is integument ? Describe various integument derivatives and their functions in vertebrates. 6

OR

b) Give an account of different types of Jaw suspensorium in vertebrates.

5. a) Give a comparative account of alimentary canal in Vertebrates. 6

OR

b) Give a comparative account of respiratory organs in Vertebrates.

6. a) Describe evolution of heart in Vertebrates. 6

OR

b) Discuss succession of kidney in Vertebrates.

7. a) Give a comparative account of brain in Vertebrates. 6

OR

b) Explain about visual receptors in man.

❐❐

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 × 8

   a) The first organ to receive the blood borne products of digestion is ___.

   b) ___ hormone contract the gall bladder to stimulate bile production.

   c) The volume of air breathed in and out during normal respiration is called ___ .

   d) The lungs function and volumes can be measured by ___ .

   e) ___ hormone promotes the reabsorption of water in DCT part of nephron.

   f) ___ is produced from atria of the heart in response of streching of the atrial wall by increased blood volume.

   g) The QRS wave of an ECG is produced by ___ .

   h) The 'dub' sound is produced by sudden closure of ___ valve.

Part-II

2. Answer any ***eight*** of the following within two to three sentences each : 1½ × 8

   a) Write different salivery glands and its ducts in buccal cavity.

   b) Define peristalysis.

   c) Write functions of success entricus.

   d) What is vital capacity ?

   e) Differentiate between Haldane effect and Bhor's effect.

   f) What is Ultrafiltration ?

   g) Write general mechanism of blood coagulation.

   h) Write effect of carbon monoxide poisoning.

   i) What is Frank-Starling law of heart.

   j) Define coronary circulation.

Part-III

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

   a) Give composition and function of Bile juice.

   b) Write about absorption of fat.

   c) Write mechanism of ventilation.

   d) Write about transport of oxygen in blood.

   e) Define Humbergur phenomenon.

   f) Write note on control of respiration.

   g) Write about counter current mechanism.

   h) Give RAA pathway that initiates by dehydration.

   i) Write about Electrocardiogram.

   j) Give neural regulation of blood pressure.

Part-IV

4. a) Describe digestion and absorption of Protein. 6

   OR

   b) Explain hormonal control of secretion of enzymes in G.I. tract.

5. a) Describe carbon dioxide transport in blood. 6

   OR

   b) What is dissociation curve ? Write the various factors influencing it.

6. a) Explain the structure of kidney. 6

   OR

   b) Describe mechanism of urine formation.

7. a) Describe structure of Mammalian heart. 6

   OR

   b) Explain in detail the cardia cycle.

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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 × 8

   a) The Pyruvate carboxylase requires ___ Vitamin to carry CO_2 group.

   b) ___ is serve as the ready source of phosphoryl group for quick synthesis of ATP in skeletal muscle.

   c) ___ Primer is used for initial synthesis of α-1, 4 glycosidic bond in glycogeh synthesis.

   d) $NADPH_2$ is synthesized mostly by ___ pathway.

   e) β-oxidation occurs in ___ of the cell.

   f) ___ is strong inhibitor of carnitine acyltransferase I.

   g) ω-oxidation occurs in ___ organelle of liver and kidney.

   h) ___ antibiotic blocks electron transfer from cyt b to cyt c1 in ETS.

Part-II

2. Answer any ***eight*** of the following within two to three sentenses each : : 1½×8

   a) Differentitate between anabolism and catabolism.

   b) What are reducing equivalents ?

   c) What is coupled reaction ? Give examples.

   d) Define glycogenolysis. Write its sequence of reaction.

   e) What are isozymes ? Give its examples.

   f) How pyruvate is converted into Lactic acid ?

   g) What is futile cycle ?

   h) Define Q cycle.

   i) Write about glycerol -3-phosphate shuttle.

   j) Define transamination reaction.

Part-III

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

   a) Write about compartmentalization of metabolic pathways.

   b) Write different stages of catabolism.

   c) Give regulation of glycolysis pathway.

   d) Write sequence of reactions that occur in glycogenesis.

   e) How glycogen metabolism is regulated ?

   f) Write about Anoplerotic reactions.

   g) What are ketone bodies ? How it formed in human body ?

   h) What is glucose-alanine cycle ?

   i) Write about chemiosmotic model ?

   j) How cytosolic NADH enter into mitochondria ?

Part-IV

4. a) Describe ATP as energy currency of cell. 6

   OR

   b) Give an account of various membrane transporters.

5. a) Give the sequence of reactions with its structure of citric acid cycle. 6

   OR

   b) Describe pathway of Gluconeogenesis.

6. a) Explain β-oxidation pathway of saturated fatty acid of even number of carbon atoms. 6

   OR

   b) Write pathway of urea cycle.

7. a) Describe mitochondrial respiratory chain. 6

   OR

   b) Write about inhibitors and uncouplers of Electron transport system.

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2021

Full Marks - 80

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) Cyanobacteria are used as bio-ferfilizers because they ___ .

   b) A nitrogen fixing microbe associated with the fern Azolla in rice fields is ___ .

   c) ___ is an aerobic nitrogen fixing bacterium ?

   d) The symbiotic association between fungi and roots of higher plants is reffered as ___ .

   e) ___ bacteria provides nitrogen to the plants from soil.

   f) Organic farming is the technique of raising crops through the usage of ___ and___.

   g) Full term of VAM is ___.

   h) ___ is an example of green manure.

   i) ___ bacterium is a non-symbiotic bio-fertilizer.

   j) The resting spores formed in the cyanobacteria is called as ___ .

   k) Organic farming does not include ___ .

   l) Rhizobium associated with ___ plants to fix atmospheric nitrogen.

Part-II

2. Write short notes on any ***eight*** of the following within two to three sentences each : 2 × 8

   a) What is bio-fertilizer.

   b) Give the classification of Azobacter.

   c) Give two examples of nitrogen fixing Blue-green-algae.

   d) Role of heterocyst.

   e) What do you mean by mycorrhiza.

   f) Taxonomy of mycorrhiza.

g) Give the examples of green manure.

h) Biodegradable wastes.

i) Biocompost.

j) Give three examples of microbes used as bio-fertilizers.

Part-III

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

a) Characteristics of Azotobacter.

b) Describe the Azosprillum multiplication.

c) Give a note on Anabaena azollae association.

d) Use of Azolla as biofertilizer.

e) Give a note on types of mycorrhizal association.

f) Effect of VAM on growth of the crop plants.

g) Give a note on green manure.

h) Agricultural wastes.

i) Biocompost.

j) Industrial wastes.

Part-IV

4. a) Describe the methods of isolation identification, mass-multiplication and inoculants of Rhizobium. 7

OR

b) Give a note on characteristics and crop response to Azotobacter inculants.

5. a) Describe the mechanism of nitrogen fixation by cyanobacteria. 7

OR

b) Describe the factors affecting the growth of BGA and Azolla in rice cultivation.

6. a) Describe about different types of mycorrhizal association. 7

OR

b) Give a note on influence of VAM on growth and yeild of crop plants.

7. a) What do you mean by organic farming ? Give a note on green manuring and organic fertilizers. 7

OR

b) Describe the process of recycling of bio-degradable municipal, agricultural and industrial wastes.

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2022

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) Ceruminous gland are modified ___ glands.

b) Vitamin D is synthesized from ___ during ultraviolet light in mammalian skin.

c) Based on the shape of centrum birds are ___ type of vertebra.

d) Pancreas is ___ in Origin from embryonic archenteron.

e) The peculiarity of respiratory, system of birds is occurence of ___ besides lungs.

f) ___ pours blood into the right atrium from the wall of the heart.

g) With the dissappearance of pronephoros the old pronephric duct becomes ___.

h) A nutritive fan like organ in the lumen of birds eye is called ___.

Part-II

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

a) Give important functions of vertebrate integument.

b) Describe dermal derivatives of vertebrates.

c) Describe the significance of branchial basket.

d) What are the peyers patches ?

e) Which animals has external as well as internal gills and why ?

f) Differentiate between internal and external respiration ?

g) How does the heart of dipnoi differ from that of teleost ?

h) What do you understand by archinephros ?

i) Explain functions of crure cerebri.

j) Briefly describe the type of teeths in vertebrates.

Part-III

3. Write notes on any ***eight*** of the following : 2×8

a) Keratinization

b) Appendicular jew

c) Ruminart stomach

d) Air bladder

e) Swim bladder

f) Truncus arteriosus

g) Archinephros

h) Renal corpuscles

i) Cranial nerves in mammals

j) Auditory receptors.

Part-IV

4. a) Give an account on the derivatives of Integuments of Vertebrates. 6

OR

b) Discuss the Axial and Appendicular skeletal system of mammal.

5. a) Compare the digestive system of Aves with mammals and give reasons of their difference. 6

OR

b) Discuss in brief the accessory respiratory organs in Vertebrates.

6. a) Discuss the evolution of heart and aortic arches in Vertebrates. 6

OR

b) Explain the evolution of kidney in Vertebrates.

7. a) Give a comparative account of brain in mammals. 6

OR

b) Discuss in brief on visual and auditory receptors in man.

2022

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 : 1×8

   a) ___ stimulate the production of gastric juice in the stomach.

   b) Enterokinase helps in the conversion of ___.

   c) In ___ part of the respiratory system, gaseous exchange takes place.

   d) ___ is located in between pleural sacs and is central compartment of the thoracic cavity.

   e) The structural and funcional unit of kidney is called ___.

   f) Blood is poured into left atrium through ___.

g) Bicuspid and tricuspid values are closed during ___.

h) Blood group ___ is called universal donner.

Part-II

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

a) Describe the function of pepsin and trypsin in the alimentary canal.

b) What is the function of cholecystokinin ?

c) What is the path of inspired air in the human respiratory tract ?

d) What are the respiratory pigments ?

e) Differentiate between inspiration and exspiration.

f) What is the role of Glomerulus during urine formation ?

g) Draw the structure of oxyhaemoglobin.

h) What is Rh factor ?

i) Differentiate between S.A. node and A.V. node.

j) What is Blood pressure ?

Part-III

3. Write short notes on any ***eight*** of the following : 2×8

a) Mechanical digestion

b) Role of Gastrin

c) Respiratory pigments

d) Tissue Respiration

e) Carbon monoxide poisoning

f) Function of ADH

g) ABO blood groups

h) Blood clotting

i) Cardiac output

j) Electrocardiogram.

Part-IV

4. a) Describe the chemical digestion in the elementary canal of man and add a note on abserbtion of carbohydrate. 6

OR

b) Give an account on structural organisation and function of associated glands in digestive tract.

5. a) Describe the mechanism of transport of oxygen and carbon dioxide in Blood of pulmunary respiration. 6

OR

b) What is respiratory pigment ? Discuss various types of respiratory pigments.

6. a) Give an account on mechanism of urine formation and add a note on regulation of water balance. 6

OR

b) Define haemopoiesis and discuss the mechani of blood coagulation system.

. a) Describe the structure of mammalian heart and give a note on cardiac cycle. 6

OR

b) Give an account on chemical regulation of heart rate and give a note on Blood pressure.

2022

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) The glycerol phosphate shuttle functions in ___.

   b) What is the net gain of ATP during the conversion of glucose to pyruvate ?

   c) Glycogen synthesis increases in presence of ___ hormone.

   d) The first product of Glycogenolysis is ___.

   e) Fatty acids are activated to acyl COA by ___.

   f) Acetyle COA converted into Malonyl COA in presence of enzyme __ in fatty acid synthesis.

   g) Coenzyme Q is involved in Electron Transport as a ___.

h) The complete oxidation of glucose yields usable energy in the form of ___.

Part-II

2. Answer any ***eight*** of the following : 1½×8

a) What is Anabolism ?

b) Why ATP is called the energy currency of a cell ?

c) What is phosphorylation ?

d) Write the significance of PP pathway.

e) What is Ketogenesis.

f) What is the role of Acetyl CO-A carboxylase ?

g) What is oxydative deamination ?

h) Describe the regulation of urea cycle.

i) What is chemiosmotic hypothesis ?

j) What is the role of complex-I of the respiratory chain.

Part-III

3. Write notes on any ***eight*** of the following : 2×8

a) Energy yielding phase of glycolysis

b) Regulation of TCA cycle

c) Cori cycle

d) Glycogenesis

e) Ketogenesis

f) Reactions of urea cycle

g) Glucogenic aminoacids

h) Omega oxidation

i) ATP synthase

j) Chemiosmotic hypothesis.

Part-IV

4. a) Explain the shuttle mechanisms and add a note on their significance. 6

OR

b) ATP as "energy currency of cell"-Justify

5. a) Describe the sequence reaction and regulation of glycolysis. 6

OR

b) Give an account on citric acid cycle.

6. a) Explain the β-oxidation of saturated fatty acids. 6

OR

b) Give an account on urea cycle.

7. a) Explain the Electron Transport system and it's significance. 6

OR

b) What are the major redox players in electron transport chain.

IVTH SEMESTER

SUBJECT: ZOOLOGY (HONS.) CC-VIII, CC-IX & CC-X

OTHER QUESTIONS: PREVIOUS YEAR QUESTIONS WITH MODEL QUESTIONS

2018

Full Marks : 50

Time : 2½ hours

The questions are of equal value

Answer **all** questions

1. Write short notes on the following :

(a) Ruminant stomach

(b) Air sacs

(c) Receptor potential

(d) Cranial nerves in vertebrates.

2. Describe the structure and function of integument in vertebrates.

Or

Write notes on the following :

(a) Epidermal glands

(b) Horns in mammals.

3. Give an account of different types of jaw suspensorium in vertebrates.

2019

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

Full Marks : 50

The questions are of equal value.

*Answer **all** questions.*

1. Describe the structure and function of vertebrate integument highlighting its derivatives.

OR

Write notes on the following :

(a) Visceral arches

(b) Secretory glands in alimentary canal

2. Brielfy discuss the evolution of heart in vertebrates with suitable diagrammatic presentation.

OR

Write notes on the following :

(a) Air sacs and its importance

(b) Arotic arches in mammal

3. Give a comparative account of brain in vertebrates with suitable diagram.

OR

Write notes on the following :

(a) Cranial nerves in vertebrates

(b) Types of mammalian uteri

4. Write notes on any **two** of the following :

(a) Jaw suspensorium

(b) Evolution of urinogenital ducts

(c) Conic and phasic receptors

2019

ZOOLOGY

(*Comparative Anatomy of Vertebrates*)

[Honours]

Paper – VII

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* of the following : 2 × 9

(*i*) What is venous heart ?

(*ii*) What is saltatory conduction ?

(*iii*) What is the function of chromatophores ?

(*iv*) How does Keratinisation take place in integument ?

(*v*) What is the function of spleen ?

(*vi*) What is closed type circulatory system ?

(*vii*) What is arbor vitae ?

(*viii*) What is the basic function of kidney ?

(*ix*) Define role of hepatic portal system.

(*x*) Distinguish between corpus callosum and corpus striatum.

(*xi*) How does the arrangement of white and gray matter differ in brain and spinal cord ?

(*xii*) What are the basic structure of a vertebra ?

GROUP – B

Answer **all** questions : 14 × 3

2. Describe the epidermal derivatives of vertebrates. 14

Or

Write notes on any *two* of the following : 7 × 2

(*i*) Liver

(*ii*) Ruminant stomach

(*iii*) Synapse.

3. Describe the evolution of heart in vertebrates. 14

Or

Write notes on any *two* of the following : 7 × 2

(*i*) Metanephros

(*ii*) Renal portal system

(*iii*) Mullerian duct.

4. Describe the structure of eye and discuss the focussing mechanism in vertebrates. 14

Or

Write notes on any *two* of the following : 7 × 2

(*i*) Organ of corti

(*ii*) Chemoreceptors

(*iii*) Autonomic nervous system.

+3 4th Sem
Zoo (H) – IX

2018

Full Marks : 50

Time : 2½ hours

The questions are of equal value

Answer **all** questions

1. Write notes on the following :

(a) Respiratory quotient

(b) Micturition

(c) Frank-Starling Law

(d) Electrocardiogram.

2. What is digestion? Describe the physiology of digestion of protein, and add a note on absorption of amino acid.

Or

Write notes on the following :

(a) Absorption of lipids

(b) Hormonal control of secretion of enzymes in gastrointestinal tract of mammal.

3. Describe the mechanism of transport of oxygen and carbon dioxide in blood of mammal.

Or

Write notes on the following :

(a) Pulmonary ventilation

(b) Dissociation curves and the factors influencing it.

4. Discuss the physiology of urine formation in mammal.

Or

Write notes on the following :

(a) Counter current mechanism

(b) Regulation of acid-base balance in mammal.

5. Describe the structure of mammalian heart.

Or

Discuss the composition and function of mammalian blood.

★★★

2019

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

Full Marks : 50

The questions are of equal value.

*Answer **all** questions.*

1. Discuss the physiology of digestion of carbohydrates highlighting the role of digestive enzymes. Add a note on its absorption.

OR

Write notes on the following :

(a) Respiratory pigments

(b) Factors influencing dissociation curve

2. Describe the mechanism of urine formation with suitable sketch.

OR

Write notes on the following :

(a) Regulation of acid-base balance

(b) ABO blood group

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3. Briefly discuss the cardiac cycle with suitable sketch. Add a note on its regulation.

OR

Write notes on the following :

(a) Structure of mammalian heart

(b) Electrocardiogram

4. Write notes on any **two** of the following :

(a) Hormonal control of digestive enzyme secretion

(b) Counter current mechanism

(c) Blood clotting factors

https://www.odishastudy.com

+3 4th Sem

Zoo (H) – X

2018

Full Marks : 50

Time : 2½ hours

The questions are of equal value

Answer **all** questions

1. Write notes on the following :

(a) Energy currency of cell

(b) Coupled reactions

(c) Intermediary metabolism

(d) Regulatory mechanism.

2. Explain citric acid cycle and add a note on how it is a common pathway of oxidative break down of carbohydrates, fatty acids and amino acid.

Or

Write notes on the following :

(a) Glycolysis

(b) Pentose phosphate pathway.

3. Discuss β-oxidation of lipid metabolism.

Or

Write notes on the following :

(a) Omega-oxidation of saturated fatty acids with even and odd number of carbon atoms

(b) Stages of catabolism.

4. Describe catabolism of amino acids.

Or

Write notes on the following :

(a) Urea cycle

(b) Deamination.

5. Explain mitochondrial respiratory chain.

Or

Write notes on the following :

(a) Inhibitors and un-couplers of electron transport system

(b) Shuttle system and membrane transporters.

★★★

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

IVth SEMESTER
CC VIII : Comparative Anatomy of Vertebrates
SECTION - A

1. The epidermis is of_____origin
2. The outer layer of a papilla is___tissue and the inside is _____
3. Name the one epidermal gland found in reptiles.
4. What kind of gland is associated with hair follicles of mammals?
5. Placoid scale found in __fish.
6. _____no of cranial nerves are present.
7. _____types of uterus found in Horse.
8. _____types of uterus found in Monkey.
9. Decidous type of placenta found in _____.
10. Parotid glands present in _____.
11. Bolus is _____.
12. SA node present in _____.
13. AV node helps in _____.
14. Synonyms of SA node is _____.

SECTION B

1. Describe the structure and function ofintegument.
2. What are accessory respiratory organs?
3. Discuss comparative account on alimentary canal and associated glands?
4. Write an Essay on evolution of Heart and aortic arch.
5. Describe different types of Mammalian uteri.
6. Discuss comparative structure of Brain of chodates.
7. Discuss about the Receptor and add note on Chemoreceptor.

IVth SEMESTER
CC IX : PHYSIOLOGY- LIFE SUSTAINING SYSTEMS
SECTION A

1. Duct leading from parotid gland and opening into vestibule is_____.
2. Wharton's duct is associated with?
3. Release of pancreatic juice is stimulated by?
4. Secretin stimulates production of_____.
5. Emulsification of fat is carried out by_____.
6. In man the zymogen or chief cells are mainly found in_____.
7. Pancreatic juice and hormones of pancreas are produced by _____.
8. Where is protein digestion accomplished?
9. Pancreas produces _____.
10. Brunner's glands occur in _____.
11. Kupffer's cells occur in _____.
12. Secretion of gastric juice is stopped by_____.
13. Vitamin K is required for_____.
14. Most of the fat digestion occurs in_____.
15. Prolonged deficiency of nicotinic acid causes_____.
16. What is the function of enterogastrone?
17. Calcium deficiency in the body occurs in the absence of_____.
18. A polysaccharide which is synthesized and stored in liver cells is _____.
19. In which part of the respiratory system, gaseous exchange takes place in _____.
20. _____is located between two pleural sacs and is the central compartment ofthe thoracic

cavity.

21. The tiny air sacs present in human lungs is called_____.
22. The exchange of gases between the external environment and the lungs_____.
23. The maximum volume of air contained in the lung by a full forced inhalation is called _____.
24. Exchange of gases between the bloodstream and tissue cells is _____.
25. In Aves, the exchange of gases occurs within the _____.
26. The windpipe is also called the _____.
27. Anincreasein the concentration of plasma potassium causes increase in_____.
28. Amino acids are almost completely reabsorbed from the glomerularfiltrate via active transport in the_____.
29. Glomerular filtration rate would be increased by_____.
30. The greatest amountofhydrogenion secreted by the proximal tubule is associated with _____.
31. In controlling the synthesis and secretion of aldosterone, which of the following factors is least important?
32. Renal correction of acute hyperkalemia will result in____.
33. The ventricular muscles accepts impulses directly from_____.
34. This is the similarity between pulmonary and systemic circulation_____.
35. On the heart, the impact of adrenaline is all of these except that _____. The amount of potassium excreted by the kidney will decreases if_____.
36. In the presence of ADH, The distal nephron is least permeable to_____
37. The effect of antidiuretic hormone (ADH) on the kidney is to_____.
38. The glomerular filtration rate will increase if_____.
39. The blood corpuscles are of_____kinds.
40. Blood is stained with_____stain.
41. Process of formation of blood corpuscles is called _____.
42. Graveyard of RBC is _____.
43. Which leucocytes release heparin and histamine in blood?
44. Which blood cells secrets antibody?
45. Absence of which clotting factor leads to Hemophilia-A?
46. What prevents the clotting of blood inside blood vessels?
47. Blood is five times more viscous than distilled water. (True/ false)
48. What is the reason why the SA node acts as heart's pacemaker?
49. The reason for the dicrotic notch on the aortic pressure curve is _____.
50. Rise in the carotid sinus pressure leads to_____.
51. Rise in the carotid sinus pressure leads to_____.

SECTION B

1. Describe the Structure and associated gland's function in detail?
2. Write down the Carbohydrate absorption process in G I Tract?
3. Write down in detail about the mechanism of respiration
4. Explain the Oxygen and carbon dioxide transport mechanism in blood.
5. Write down Urine Formation in detail .
6. What are the components of blood and add notes on the function of hemoglobin? Explain the Structure of heat and add notes on cardiac cycle.
7. How blood pressure is regulated? add note on Frank starling law of Heart.

IVth SEMESTER

CC X : Biochemestry of Metabolic Process

SECTION -A

1. Name the pathway for glucose synthesis by non-carbohydrate precursors?
2. Name the enzyme which is responsible for the conversion of pyruvate to phosphoenolpyruvate(PEP)?
3. Gluconeogenesis is also carried out in muscle and brain.
4. Which of the following are major sites for glycogen storage?
5. Which of the following is the precursor of glycogen?
6. The priming function in glycogen synthesis is carried out by_____.
7. Name the enzyme which is used for branching of glycogen?
8. Name the hormone which is secreted in an emergency or in stress condition.
9. Erythrocytes Undergo Glycolysis for Production of ATP. The Deficiency of Which Enzyme Leads to Hemolytic Anemia-
10. In the Liver, the Accumulation of which among the Following Metabolites Attenuates the Inhibitory of ATP on Phosphofructokinase?
11. The Most Active Site of Protein Synthesis is the-
12. How many Total Molecules of ATP are Synthesized from ADP via Glycolysis of a Single Molecule of Glucose?
13. The Rate of Absorption of Sugars by the Small Intestine is Highest for -
14. _____is not a Polymer of Glucose.
15. An Essential for the Conversion of Glucose to Glycogen in Liver is _____.
16. Which of the Following Glucose Transporter (GLUT) are Important in Insulin-Dependent Glucose Uptake?
17. Which of the Following Metabolites Negatively Regulates Pyruvate Kinase?
18. Which of the Following Glycolytic Enzymes is Inhibited by Accumulation of Long Chain Fatty Acid in the Liver?
19. Gluconeogenesis Occurs in the Liver and Which Organ ?
20. Adrenaline acts on which Enzyme in Glycogenolysis?
21. Which among the Following Hormones decreases Blood Glucose and Increases Uptake of Glucose in Various Tissues like Skeletal Muscle, Adipose Tissues?
22. The First Product of Glycogenolysis is -
23. Gluconeogenesis is the Production of Glucose from Non-Carbohydrate Molecules. Which of the Following is not Substrate for Gluconeogenesis?
24. Enzymes Concerned with the Citric Acid Cycle are Found in the -
25. What high Energy Phosphate Compound is formed in the Citric Acid Cycle through Substrate level Phosphorylation?
26. The Conversion of Glucose-6-Phosphate to Fructose-6-Phosphate is an Example of which of the Following Reactions?
27. The Net Gain of ATP during Conversion of Glucose to Pyruvate is -
28. During the Conversion of Glucose to Pyruvate, Two NADH Molecules are Generated. Which of the Following Steps Generates NADH?
29. _____is a Monosaccharide.
30. The End Product of Glycolysis under Anaerobic Conditions is - Gluconeogenesis is the Production of Glucose from Non-Carbohydrate Molecules. Which of the Following is not Substrate for Gluconeogenesis?

SECTION -B

1. Explain shuttle system and membrane transporters.
2. Describe Glycogenolysis in detail.
3. Describe Citric Acid Cycle.

4. Explain Glycogenesis in detail.
5. Describe the process of beta Oxidation.
6. Describe the fate of Glucogenic and ketogenic aids.
7. Describe the process of catabolism of Amino Acid.
8. Describe the process of Gluconeogenesis.
9. Explain the electron transport chain. Mention the sites of ATP synthesis.
10. Explain various enzymes, coenzymes and electron carriers involved in biological oxidation.