UNIT-III ESSENTIALS OF ZOOLOGY

TOPICS: DEVOLOPMENTAL BIOLOGY &ECONOMIC ZOOLOGY

MULTIPLE CHOICE QUESTIONS

1.Polar bodies are formed during

(A) Oogenesis (B) Spermatogenesis (C) Gametogenesis (D) Spermateleosis

2.The process of spermatogenesis is induced by

(A) TSH (B) FSH (C) MSH (D) ACTH

3.The number of spermatozoa from a single primary spermatocyte finally produced in spermatogenesis is

(A) 2 (B) 4 (C) 6 (D) 8

4.The acrosome of sperm is formed from

(A) Mitochondria (B) Golgi complex (C) Nucleus (D)Centrosome

5.The process of formation of a mature female gamete is called _____.

(A) spermatogenesis (B) menstruation (C) ovulation (D) oogenesis

6.One primary oocyte produces _____ female gamete.

(A) 4 (B) 2 (C) 3 (D) 1

7. **Organ Formation is known as**

(A) Organ lysis (B) organogenesis (C) Gametogenesis (D) Oogenesis

8.**One of the following is haploid cell**

(A) Primordial germ cell (B) Oogonium (C) Primary Oocyte (D) secondary Oocyte

9.Which of the following organ is formed during gastrulation?

(A) Gill (B) Vitelline membrane (C) Heart (D) Archenteron

10.Brain, nerve cells and spinal cord or the central nervous system develops from embryonic _____.

(A) Mesoderm (B) Endoderm (C) Ectoderm (D) Both (A) and (C)

11. Implantation is the process of_____.

(A) Attachment of blastocyst to the uterine wall (B) Egg movement

(C) Degeneration of egg (D) Egg fertilization

12.**Sense organs in vertebrates develops from**

(A) Endoderm (B) Ectoderm (C) Mesoderm (D) Endoderm and mesoderm both

13.When mouth develops from blastopore, the organism is called

(A) Deutrostomia (B) Protostomia (C) Blastostomia (D) None of these

14.Heart is developed from

(A) Ectoderm (B) Mesoderm (C) Endoderm (D) Ectoderm &Endoderm

15. Polar bodies are formed during

(A) Oogenesis (B) Spermatogenesis (C) Organogenesis (D) Cleavage

16. Which species produces silk of the superior quality

(A) Attacus atlas (B) Bombyx mori (C) Attacus ricini (D) Antheraea assamensis

17. The culture of oysters is called ( )

(A)Sericulture (B) Apiculture (C) Mariculture (D) finfish culture

18. The Acrosome of sperm is formed from ( )

(A) Mitochondria (B) Golgi complex (C) Nucleus (D) Endoplasmic reticulum

19. Silk is produced by ( )

(A) Cocoon (B) Adult moth (C) Larva (D) Larva& Adult moth

20. The Resinious substance collected by Bees from trees and plants is ( )

(A) Propolis (B) Sericin (C) Amber (D) Copal

21. The Culture of Simon, Tilapia and Trout fishes in ponds ( )

(A) Finfish culture (B) Shell fish culture (C) Shrimp culture (D) Integrated culture

22. Silkworm undergoes _____moulting to become adult ( )

(A) Two (B) Three (C) Four (D) Five

23._____allows Bees to build their Natural comb without the use of frames (

(A) Flow hive, (B) Warren hive (C) langstroth hive (D) Top bar hive

24. **Silk contains a protein known as**

(A) casein (B) fibroin (C) sericin (D) both (A) and (C)

25. **The generic name of which of these is Apis indica**

(A) Fish (B) Honey bee (C) Lac insect (D) Prawn

26.The hive which consists of boxes with removable frames is

*(A) Langstroth hive (B) Flow hi**ve** (C) Top bar hive (D)warre hive*

27. Royal jelly is a secretion produced by workers to feed

(A) jelly making by the use of honey (B) special honey for feeding the larva

(C) honey to feed drone (D)none of the above

28.The culture of fish and prawn is called as

(A) Fish cuture (B) Monoculture (C) Shellfish culture (D) Integrated culture

29.The process begins with the invagination of the blastocyst to form a two layered structure called

(A) morula (B) gastrula (C) blastulla (D) zygote

3o.The type of cleavage found in humans

(A)Mroblastic (B) Discoidal (C) Equatorial (D) Holoblastic

FILL IN THE BLANKS

1. spermatocyte: a male gametocyte, from which a spermatozoon develops.
2. oogenesis starts with a germ cell, called an oogonium
3. The cell produced at the end of meiosis in spermatogenesis is called a spermatid.
4. **The process of fusion of male and female gametes is called fertilization**
5. **External fertilization takes place in frog**
6. **The process begins with the invagination of blastocyst to form two layered structure called the gastrulla'.**
7. **Gastrulation is the process by which the three primary germ layers are formed.**
8. **Silkfibres come from cocoon of moth.**
9. **The silkworm excrement called frass can be used as fertilizer.**
10. **Cleavage is a series of divisions that lead to the formation of zygote.**

State true or false

1. In deuterostomes the blastopore develops into anus and mouth is formed at the opposite end. ( )
2. The embryo in the blastocyst stage gets implanted in the uterus. ( )

3.Drones are male bees whose sole purpose is to mate with anew queen during her nuptial flight. ( )

4.Oogenesis results in one haploid egg and 4 polar bodies. ( )

5.The cell produced at the end of meiosis is called a spermatid. ( )

Very short answers

1.what is gametogenesis ?

2.what are the two process of gametogenesis ?

3.what is ovulation ?

4.what is cleavage ?

5.what are the organs formed from mesoderm ?

6. what are the organs formed from endoderm ?

7.Give some examples of silk fabric produced by silkworm?

8. what is the use of Beeswax ?

9.What is shellfish culture ?

10.How is bee venom useful ?

Matchi the following

COLUMN A		**COLUMN B**
1.silk worm	( )	Apis indica
2.Honey bee	( )	Fertilizer
3.Frass	( )	Mulberry leaf
4.caterpillar	( )	Bivalves
5.Molluscans	( )	Bombyx mori

COLUMN A		COLUMN B
1.week 3	( )	Formation of Gonads and Glands
2. week 4 to 5	( )	Gastrulation
3 week 5 to 6	( )	Early Organogenesis
4. week 6 to 7	( )	Growth and Maturation of Organs
5. week 8	( )	Limb Development

key

MCQ

1.A	11.A	21.A
2.B	12.B	22.C
3.B	13. B	23.B
4.B	14. B	24. B
5.D	15. A	25.B
6.D	16. B	26. A
7.B	17. C	27. B
8.D	18.B	28. D
9.D	19.C	29. B
10.C	20.A	30. D

FILL IN THE BLANKS

1. Spermatocyte
2. Oogonium
3. Spermatid.
4. **Fertilization**
5. **External**
6. **Gastrulla'.**
7. **Gastrulation**
8. **Cocoon**
9. **Fertilizer.**
10. **Cleavage**

TRUE /FALSE

1.TRUE

2.TRUE

3.TRUE

4.FALSE

5.FALSE

VERY SHORT ANSWERS

1 FORMATION OF GAMETES. Fertilizer

2. SPERMATOGENESIS & OOGENESIS.

3. RELEASE OF OVA OR EGG.

4.DIVISIONS OF ZYGOTE.

5. HEART,KIDNEYS,BLOODVESSELS,SKELETAL MUSCLE.

6. DIGESTIVE TRACT, RESPIRATORY TRACT, THYROID, LIVER , PANCREAS.

7. satin, crepe,chiffon.

8. USED IN CANDLE MAKING,COSMETICS.

9. CULTIVATION OF OYSTERS,MUSSELS.

10. RHEUMATOID ARTHRITIS

MATCHING

1. Bombyx mori
2. Apis indica
3. Fertilizer
4. Mulberry leaf
5. Bivalves

1. Gastrulation
2. Early Organogenesis
3. Limb Development
4. Formation of Gonads and Glands
5. Growth and Maturation of Organs

UNIT – III

Topics : Kingdom Animalia, Animal Physiology, Hormones and their disorders

Multiple Choice Questions:

1. Closed type of blood vascular system is found in( )
    A. Arthropoda
    B. Annelida
    C. Nematoda
    D. Platyhelminthes
2. Which of the following animals have the cellular grade of body organisation( )
    A. Euspongia
    B. Hydra
    C. Aurelia
    D. Euglena
3. Which Phylum posses incomplete digestive system( )
    A. Mollusca
    B. Echinodermata
    C. Aschelminthes
    D. Platyhelminthes
4. The Middle layer of body wall in coelenterata is (
    A. Mesoderm
    B. Mesenchyme
    C. Mesoglea
5. Canal System is a characteristic feature of( )
    A. Pila
    B. Round worm
    C. Sycon
    D. Cockroach
6. Flame cells helps in ( )
    A. Excretion

B. Digestion
C. Respiration
D. Reproduction

7. Fasciola hepatica is a ( )
   A. Free living organism
   B. Endoparasite
   C. Ectoparasite
   D. Symbiotic
8. Elephantiasis is caused by ( )
   A. Ascaris
   B. Plasmodium
   C. Entamoeba histolytica
   D. Wuchereria
9. Which one of the following is not a Hermaphrodite ( )
   A. Earthworm
   B. Leech
   C. Ascaris
   D. Taenia solium
10. What are the locomotory structures in class polychaeta ( )
   A. Parapodia
   B. Flagella
   C. Pseudopodia
   D. Cilia
11. Excretory organ found in Arthropoda ( )
   A. Nephredia
   B. Malpighian tubules
   C. Kidneys
   D. None of the above
12. What is the respiratory pigment in Mollusca (
   A. Haemocyanin
   B. Hemoglobin
   C. Erythrocruorin

13. Water vascular system is a characteristic feature of( )
    A. Coelenterata
    B. Porifera
    C. Echinodermata
    D. Nematoda
14. Which is Sanguivorous( )
    A. Leech
    B. Balanoglossus
    C. Spider
    D. Female Mosquito
15. In which of the following the chordate characters are retained through out the life( )
    A. Amphioxus
    B. Frog
    C. Herdmania
    D. Dolphin
16. In Vertebrates, the vertebral column is replaced by( )
    A. Nerve cord
    B. Noto chord
    C. Spermatic cord
    D. Umbilical cord
17. Chordates with the back bone are called as( )
    A. Protochorda
    B. Vertebrata
    C. Gnathostomata
18. Which of the following is not a characteristic feature of cartilagenous fish( )
    A. Gills are not covered by operculum
    B. Vertebral column is cartilagenous
    C. Air bladder is present
    D. Skin is tough containing minute scales
19. Arceopteryx is a connecting link between( )
    A. Reptiles and birds

B. Amphibians and reptiles
C. Birds and Mammals
D. Fishes and Amphibians

20. Birds are( )
A. Uricotelic
B. Ureotelic
C. Ammonotelic

21. Entry of food into trachea is prevented by( )
A. Epiglottis
B. Glottis
C. Pharynx
D. All of the above

22. Complete digestion take place in which part of digestive system ( )
A. Pyloric stomach
B. Duodenum
C. Jejunum
D. Ileum

23. The function of villi in intestine is( )
A. Increases absorption area
B. Helps in digestion
C. Eliminate the undigested food

24. The process of conversion of complex food substances to simple absorbable form is called (
A. Assimilation
B. Defecation
C. Digestion

25. Which substance of saliva destroys the harmful bacteria( )
A. Amylase
B. Lingual lipase
C. Lysozyme
D. Secretin

26. What is the important function of bile juice( )
    A. Emulsification of fats
    B. Breakdown of proteins
    C. Digestion of carbohydrates
27. Glucose and Amino acid are absorbed into blood capillaries by the process called( )
    A. Active transport
    B. Facilitated transport
    C. Simple diffusion
    D. Osmo regulation
28. The process in which absorbed substances finally reach the tissue where they are utilised for energy production is called ( )
    A. Anabolism
    B. Catabolism
    C. Assimilation
    D. Transportation
29. The space between two lungs is called( )
    A. Thoracic cavity
    B. Pleural cavity
    C. Mediastinum
    D. Rib cage
30. The covering of the lung is called( )
    A. Pleural membrane
    B. Pericardial membrane
    C. Parietal membrane
    D. Peritoneal membrane
31. In mammals voice is produced by( )
    A. Bronchus
    B. Syrinx
    C. Larynx
32. External and internal intercoastal muscles are present in( )

A. Diaphragm
B. Lungs
C. Between ribs
D. Pleural cavity

33. A molecule of haemoglobin can carries how many O2 molecules( )
A. 1
B. 2
C. 3
D. 4

34. The process of respiration is under the control of which part of the brain ( )
A. Cerebellum
B. Cerebrum
C. Medulla oblongata
D. Crura cerebrum

35. Life span of RBC is( )
A. 120 days
B. 180 days
C. 90 days
D. 45 days

36. Sinus venosus in mammals is merged with the wall of( )
A. Right auricle
B. Left auricle
C. Right ventricle
D. Left ventricle

37. Chordae tendinae in the heart are found in( )
A. Ventricles
B. Auricle
C. Aorta
D. SA node

38. The bicuspid valve occurs between( )
A. The right and right ventricle

B. Left auricle and left ventricle
C. Left auricle and right ventricle
D. Right auricle and left ventricle

39. The first heart sound is ‘Lub’ produced due to(
A. The closure of atrioventricular valve
B. The closure of semilunar valves
C. The opening of auricloventricular
D. The opening of semilunar valves

40. Which one of the following cell lack nucleus ( )
A. Erythrocytes
B. Neutrophils
C. Eosinophils
D. Monocytes

41. Which cell is involved in antibody production(
A. B lymphocytes
B. Neutrophils
C. RBC
D. Basophils

42. Which hormone is concerned with the volume of urine? ( )
A. ADH
B. ACTH
C. TSH
D. Thymosin

43. Which hormone supports pregnancy? ( )
A. Progesterone
B. Oestrogen
C. Luteinizing hormone
D. Aldosterone

44. The largest endocrine gland in the body( )
A. Pituitary
B. Adrenal
C. Pancreas

D. Thyroid

45. Cushing syndrome is due to( )
   A. Increase in cortisol levels
   B. Decrease in cortisol levels
   C. Increase in Aldosterone level
   D. Decrease in Aldosterone level

Short Questions :

1. Which is the largest phylum in Kingdom Animalia?
2. Ascidians belongs to which Phylum?
3. What are the respiratory organs in hemichordata?
4. What are the four fundamental chordate characters?
5. What is the function of Nematoblast in coelenterata?
6. In which part of alimentary canal the food is converted in to chyme?
7. The formation of urea occurs in which organ?
8. where does the stimulation for heart contraction is initiated ?
9. Which gland produces T-lymphocytes?
10. Which hormone helps in uterine contraction during childbirth?
11. Name the two hormones releases from the adrenal medulla?
12. Which hormone is responsible for the regulation of blood calcium level?
13. Where is vitamin D synthesized in the body?
14. Where does haematopoiesis occur in the adult human?
15. What is the by product of anaerobic respiration?
16. Where does the foramen of ovale present in foetal heart?

II Fill in the Blanks :

1. Tissue level of body organisation is first seen in the phylum----------.

2. Water vascular system in echinodermata helps in-------.
3. The hormone responsible for normal sleep wake cycle is ---------.
4. Undersecretion of thyroid hormones results in---------syndrome.
5. Bioluminescence is well marked in the phylum ---------.
6. Insulin is produced by ---------- of pancreas.
7. ---------- is the largest organ in body.
8. Gases exchange takes place in--------- of respiratory system.
9. ---------- Carries oxygen molecule to tissues.
10. In urine formation the filtration of blood in nephron is carried out by the ----------.
11. Segmentation of body is first observed in the phylum--
12. Nerve cord is replaced by------- and------ in Vertebrates.

III True / False :

1. Bile juice is secreted by liver and stored in spleen ( )
2. Larynx is a cartilagenous box which helps in sound production ( )
3. The common passage for food and air is trachea ( )
4. The main function of lymphocytes is to clot the blood at the site of wound ( )
5. In mammals the heart receives both oxygenated and deoxygenated blood which are completely separated from each other(
6. Iodine is essential for the synthesis of thyroid hormones ( )
7. Somatostatin is a growth inhibitory hormone produced by hypothalamus ( )
8. Thymus gland becomes more active and increases immunity with age ( )

9. Acromegaly syndrome is due to hyposecretion of growth hormone from pituitary gland ( )
10. Neurons are excitable cells because their membranes are in polarized state ( )
11. In deuterostomes the blastopore develops into anus and mouth is formed at the opposite end ( )

IV Match the following :

I 1) Insulin ( ) a) Maintains healthy Reproductive system and helps in ovulation

2) Prolactin ( ) b) Decreases the loss of water through urine

3) FSH ( ) c) Control the blood sugar level

4) Vasopressin ( ) d) Responsible for normal sleep wake cycle

5) Melatonin ( ) e) Regulates the growth Mammary glands and milk formation in females

II 1) Chondrichthyes ( ) a) Air bladder

2) Ostichthyes ( ) b) Circular mouth

3) Cyclostomata ( ) c) Nacked gills

4) Aves ( ) d) Metameres

5) Porifera ( ) e) Canal system

6) Annelida ( ) f) Pneumatic bones

7) Mollusca ( ) g) Flame cells

8) Fasciola hepatica ( ) h) Radula

9) Jelly fish ( ) i) Nematocysts

10) Reptilia ( ) j) Scales

11) Physalia ( ) k) Diploblastic

Key :

MCQ :

1) B	17) B	33) D
2) A	18) C	34) C
3) D	19) A	35) A
4) C	20) A	36) A
5) C	21) A	37) A
6) A	22) B	38) B
7) B	23) A	39) A
8) D	24) C	40) A
9) C	25) C	41) A
10) A	26) A	42) A
11) B	27) C	43) A
12) A	28) C	44) D
13) C	29) C	45) A
14) A	30) A	
15) A	31) C	
16) B	32) C	

Short Answer :

1. Arthropoda
2. Chordata
3. Gill slits
4. Notochord, Nerve cord, Pharyngeal gill slits and Post anal tail.
5. Defence mechanism and feeding
6. Stomach
7. Liver
8. Sinoauricular node(SA node)
9. Thymus
10. Oxytocin
11. Adrenaline and nor Adrenaline
12. Parathyroid hormone
13. Skin
14. Bone marrow
15. Lactic acid
16. Between right and left atrium

Blanks :

1. Coelenterata
2. Locomotion
3. Melatonin
4. Hypothyroidism
5. Coelenterata
6. Beta cells of langerhans of pancreas

7. Liver
8. Alveoli
9. Hemoglobin
10. Glomerulus
11. Annelida
12. Brain and spinal cord

True/ False :

1) False
2) True
3) False
4) False
5) True
6) True
7) True
8) False
9) False
10) True
11) True

Match the Following

I.	**II.**	
1 – c	1 – c	6 – d
2 – e	2 – a	7 – h
3 – a	3 – b	8 – g
4 – b	4 – f	9 – k
5 – d	5 – e	10 – j
		11 – i