**Government college for women (A). Kumbakonam**

**DEPARTMENT OF ZOOLOGY**

**FUNCTIONAL MORPHOLOGY AND PHYLOGENY OF INVERTEBRATES AND CHORDATES**

**SUBJECT CODE: P21ZC101**

**UNIT – I**

1. Which phylam are radially symmetrical

1. Cnidaria and annelid
2. Echinodermata
3. Nematida

d) Cnidaria and protozoa

2 .Pseudocoelom develops from

1. Mesoderm
2. Blastocoels
3. Archenteron
4. Gut

3. Syncytial theory explains

1. Formation of coelom
2. Symmetry of animals
3. Origin of life
4. Origin of matazoa

4. Which animal transforms from bilateral to radial symmetry

1. Obelia
2. Starfish
3. Sponge
4. Hydra

5. Coelom produced from mesoderm cell is called

1. Hydrocoel
2. Enterocoel
3. Schizocoel
4. Pseudocoel

6..Radial symmentry occurs in

1. Fishes
2. Molluscus
3. Star fishes
4. Sponges

7. In Hydra, the symmetry is

1. Absent
2. Radial
3. Bilateral
4. Spherical

8. Majority of sponges are

1. Asymmetrical
2. Radially symmetrical
3. Spherically symmetrical
4. Bilaterally symmetrical

9. An enterocoelomate invertebrate group is

1. Annelida
2. Echinodermata
3. Arthropoda
4. Mollusca

10. Sea anemone has a symmetry of

1. Bilateral
2. Spherical
3. Pentamerons
4. Radial/biradial

11. True coelom appeared first in the course of evolution in

1. Aschelminthes
2. Chordate
3. Echinodermata
4. Annelid

12. True coelom is covered by

1. Mesoderm
2. Ectoderm and endoderm
3. Ectoderm
4. Endoderm

13. Body cavity lined by mesoderm is called

1. Coelenterons
2. Pseudoceal
3. Coelom
4. Blastocoels

14. Echinoderms and chordates have

1. Pseudocoelom
2. Schinzocoelom
3. Enterocoelom
4. Haemocoel

15.An animal with metameric segmentation metamerism

1. Housefly
2. Earthworm
3. Round worm
4. Planaria

16. Locomotory organs in protozoans are

1. Arcella and endamoeba
2. Leishmania and trypanosome
3. Paramecium and balantidium
4. All of these

17. Protozoa are classified on the basis of

1. Locomotory organ
2. Shape
3. Number of nuclei
4. Size

18. Which is not the locomotory organ of protozoa

1. Cilia
2. Flagella
3. Pseudopodia
4. Parapodia

19. The locomotory organelle of foraminifera are

1. Lobopodia
2. Filopodia
3. Axopodia
4. Reticulopodia

20. Amoeba locomotion is with

1. Pseudopodia
2. Filopodia
3. Flagella
4. cilia

21.Annelid locomotory organs are

1. Flagella
2. Setae
3. Cilia
4. Filopodia

22.Parapodium is one of the organ for

1. Locomotion
2. Feeding
3. Digestive
4. Cerutation

23. Looping or crawling movement is found in

1. Leech
2. Earthworm
3. Nereis
4. Chaetopterus

24.Which is the slowest mode of locomotions

1. Pseudopodia
2. Ciliary
3. Flagellar
4. Both a and c

25. Which is the fastest mode of locomotion

1. Wriggling
2. Pseudopodial
3. Ciliary
4. Flagellar

26. Pseudopodia are formed in amoeba by

1. Food particle
2. Surrounding water
3. Exchange of salt
4. Sol –gel transformation of the cytoplasm

27. Locomotion occurs in earthworm through

1. Setae
2. Parapodia
3. Setae and circular muscles
4. Setae and longitudinal muscles

28.Polychaete worms locomotion is by

1. Setae
2. Parapodia
3. Cilia
4. Flagella

29. Polychaetes are

a) Carnivores

b) Herbivores

c) Filter feeders

d) Sand feeders

30. Filter feeding is found in

a) Pelagic polycheates

b) Burrowing

c) Tubicolous polychaetes

d) Parasitic

31. Filter feeding animal is

a) Chaetopterus

b) Terebella

c) Glycera

d) Nereis

32.Sessile and filter feeders are

1. Prochordate
2. Mollusca
3. Insect
4. Fishes

33.Prochordata food habbit is

a) Non of this

b) Microphagus

c) Herbivores

d) Amnivore

34. Urochordata and cephalochordate has the course of feeding current as

a) Mouth- stigmata

b) Mouth – pharynx

c) Mouth – atrium

d) All of the above

35. Book- Lungs are respiratory organs which are found in

1. Insect
2. Crustaceans
3. Arachnids
4. Onychophores

36. Respiration in arthropods occurs through

1. Gills
2. Book - lungs
3. Trachea
4. All of the above

37. In insect, oxygen is carried out to different tissues by

1. Diffusion through surface
2. Tracheal tubes
3. Respiratory pigment
4. Gills

38. Hoemocyanin, the blue colour pigment of molluscan blood contains

1. Iron
2. Magnesium
3. Copper
4. Manganese

39. Open circulatory system is seen in

1. Molluscs
2. Arthropods
3. Annelids
4. Protozoan

40. Molluscs body fluid is

1. Haemocoel
2. Body fluid
3. Haemolymph
4. Blood liquid

41. Arthropods heart is surrounded by

a) Muscular

b) Triangular

c) Tissue

d) Pericardium

42. Anaerobic respiration in animal produces

1. Co2
2. Lactic acid and H2O
3. Glucose and O2
4. C2H5OH and CO2

43. Tracheoles are formed in

1. Insects
2. Fish gill
3. Yeast cells
4. Diaphragm

44. The respiratory pigment of prawn is

1. Haemoglobin
2. Haemocyanin
3. Cyanin
4. None of these

45. Respiratory organs of scorpion are

1. Coxal organs
2. Book – lungs
3. Anlenary organs
4. Trachea

46. In the following respiratory pigments which carry oxygen in the blood

1. Haemocyanin
2. Haemoglobin
3. Xanthophylls
4. Bilirubin

47. Aquatic respiration is carried out by

1. Gills
2. Book lungs
3. Trachea
4. Coxal organs

48. Insect larvae haas

1. Blood gills
2. Book gills
3. Rectal gills
4. Tracheal gills

49. Book gills are present in

1. Larvae
2. Insect
3. Limulus
4. Dragon

50. Tracheal gills are present in

1. Limulus
2. Aquatic larva
3. Dragon
4. Insect

51. The respiratory organs of rectal gills are present in

1. Limulus
2. Larvae
3. Insects
4. Dragon - fly

52. Trichobrance is present in

1. Limulus
2. Penaeus
3. Insects
4. Dragon fly

53. Arthrobranchs are present in

1. Side gills
2. Joint gills
3. Food gills
4. Blood gills

54. Podo branchs has

1. Joint gills
2. Rectal gills
3. Book gills
4. Side gills

55. Pleurobranchs are present in

1. Side gills
2. Foot gills
3. Rectal gills
4. Joint gills

56. Tracheal system is found in

1. Dragon
2. Insect
3. Limulus
4. Larvae

57. How many types of tracheal system

1. One
2. Two
3. Four
4. Three

58. Feeding is one of the stages in

1. Fragmentation
2. Adaptation
3. Nutrition
4. Respiration

59. Raptorial feeders are

1. Carnivores
2. Herbivores
3. Sand feeders
4. Mud feeders

60. Raptorial feeders are

1. Browsers
2. Crawlers
3. Filter
4. Eater

**ANSWERS** :

|  |
| --- |
| **1-d, 2- b, 3-d ,4 -a, 5 -c, 6 -c, 7 -b, 8-a, 9-b, 10 -d,11 -d,12 -a, 13 -c, 14-c, 15 -b, 16 -d, 17 -a, 18 -d, 19 -d, 20 -a, 21 -b,22-a, 23-a, 24-a, 25 -c, 26 -d,27 -a, 28 -b, 29-b, 30-c , 31-a, 32-a,33-b,34-d,35-c,36-d,37-b,38-c,39-b,40-c,41-d,42-b,43-a,44-b,45-b,46-b,47-a,48-a,49-c,50-b,51-d,52-b,53-b,54-c,55-a,56-b,57-d,58-c,59-a,60-b,** |

**Unit-II**

1. **In amoeba excretion takes place through the process of---- .**  
   A. Diffusion  
   B. Infusion  
   C. Uricotelic  
   D. None of the above
2. **Name the excretory organ present in earthworm through which excretion takes place?**  
   a. Moist Skin  
   b. Nephridia  
   c. Both A and B  
   d. Kidney
3. **What types of nitrogenous wastes are excreted by living organisms?**  
   A. Ammonia  
   B. Uric acid  
   C. Urea  
   D. All of the above
4. **Which organs act as excretion in paramecium?**  
   A. Contractile Vacuoles

**B.** Flame Cells

C. Organ of Bojanus

D. Malpighian Tubules

5. **Which organs act as a excretory organ in planeria?**

A. Contractile Vacuoles

**B.** Flame Cells

C. Organ of Bojanus

D. Malpighian Tubules

6. **Which organs act as a excretory organ in Cockroach?**

A. Contractile Vacuoles

**B.** Flame Cells

C. Organ of Bojanus

D. Malpighian Tubules

**7. Which organs act as a excretory organ in Prawn?**

a. Contractile Vacuoles

**b.** Flame Cells

c. Green gland

d. Malpighian Tubules

**8.** What type of excretory product is eliminated by pila in terrestrial phase ?

A. Ammonoa

B. Urea

C. Uric acid

D. None of the above

**9. The excretory organs of Lamellidens is**

A. Contractile Vacuoles

**B.** Flame Cells

C. Organ of Bojanus

D. Malpighian Tubules

10. **Which organs act as a excretion in** Taenia Solium

A. Contractile Vacuoles

**B.** Flame Cells

C. Organ of Bojanus

D. Malpighian Tubules

**11.** Flame cells function on the basis of

A. filtration and reabsorption

B. osmoregulation

C. filtration

D. reabsorption

12. The main function of Chloragogen Cells is

A. Reproduction

B .Digestion

C. Respiration

D. Deamination

13. Accessory Excretory Structures of Pericardial Cells in Cockroach is

A. Absorb excretory materials from haemolymph

B. Absorb excretory materials from blood

C. Absorb excretory materials from bladder

D. Absorb excretory materials from intestine

14. The main function of Fat Cells is

A. fat storing only

B. store uriate in the cytoplasm

C. both A & B

D. store protein

15. Amoeboid Cells main function in cockroach is:

A. store excretory material

B. store food material

C.store blood cells.

D. None of The above

16. The excretory waste of Asterias is

A. Uric acid

B. Urea

C. Ammonium

D. None of the above

17. Keber’s organ is present in

A. Cockroach

B. Bivalves

C. Earthworm

D. Amoeba

18. Excreatory organ of prawn is

A. Keber’s organ

B. Antennary glands

C. Flam cell

D. Keber’s organs

**19.** Nerve cell are interconnected with each other to form

A. Ectoderm

B. Mesogloea

C. Nerve net

D. Nerve cell

20. Each nerve cell has a cell body with a

A.Nucleus

B. Mitocondriya

C. Golgi apparatus

D. Endoplasmic reticulam

21. The sub-epidermal nerve net is located below the------- in Aurelia

A.Endoderm

B. Ectoderm

C. Mesogloea

D. None of the above

22. The sub-endodermal nerve net is located below the---- in Aurelia

A. Endoderm

B. Ectoderm

C. Mesogloea

D .None of these

23. Nervous system in Sea anemone is

A. Diffused type

B .Well developed

C. Partially developed

D. None of the above

24. Sea anemone have endodermal nerve net in

A. Mouth

B. Tentacles

C. Mesenteries

D. Gonads

25. Sea anemone have ectodermal nerve net between the

A. Ectodermal and the longitudinal muscles

B. Ectodermal and endodermal

C. Ectodermal and mesoderm

D. Endoderml and mesoderm

26. The nervous system in Pila is

A. well developed

B. well diffused

C .Partially developed

D. None of the above

27. The nervous system in Pila is twisted in the form of the figure

A. 2

B. 5

C. 3

D. 8

28. Nervous system of Pila have most of the ganglia are placed in the form of ring around the

A. Brain

B. Buccal mass

C. Viseral mass

D. Osphradium

29. In *Pila* the nerves connecting two dissimilar ganglia are called

A. Connectives

B. Commissure

C. Ganglia

D. Nerves

30. In *Pila* the nerves connecting two similar ganglia are called

A. Connectives

B. Commissure

C .Ganglia

D. Nerves

31. The nerves system of fresh water mussel is greatly reduced as a result of

A. sedentary mode of life

B. Pelagic mode of life

C. Floating mode of life

D. None of the above

32. The nervous system of sepia is an-----------

A. Developed type

B. Diffused type

C. Advanced type

D. Reduced type

33. In Fresh water mussel cerebral commissure which runs above the

A. Buccal mass

B. Osphradia

C. Oesophgus

D. Statocysts

34. In Fresh water mussel visceral ganglion innervate to the

A. Mantle, kidney , gill and adductor muscle

B. Stomach,intestine,oesophage

C. Liver,kidney,buccal mass

D. Intestine,Kidney,liver

35. In Fresh water mussel pedal ganglia lies in the

A. Brain

B. Foot

C. Eyes

D. Stomach

36. In Sepia at the base of each eye has an

A. Olfactory ganglion

B. Inferior buccal ganglion

C. Stellate ganglion

D. Optic ganglion

37. Sepia has the following commissures

A. Interbranchial commissure

B. Circum oesophageal commissure

C. Both A & B

D. None of above

38. In sepia the cerebral ganglia connect with the sub-oesophageal ganglia to form

A. Circum oesophageal connectives

B. Cerebro-branchial connectives

C. Cerebro-branchial connectives

D. Cerebrobuccal connectives

39. In sepia Sympathetic nerves arise from the inferior buccal ganglion and send nerves to

A. Buccal cavity, brain , trunk

B.Gills, arms, optic lense

C. Stomach, caecum, intestine

D. None of the above

40. In insect brain contains groups of glandular cells called

A. Neurosecretory cells

B. Nerve cell

C. Brain cell

D. None of the above

41. Neurosecretory cells secrete a hormones called

A. Brain hormones

B. Pheromone

C. Lutinishing hormone

D. Thyroid hormone

42. The corpus cardiacum releases brain hormone into the

A. Tissue

B. Blood

C. Lymph

D. Vein

43. Brain hormone act on a highly branched gland present in the prothorax called

a. Prothoracic gland

b.Thyroid gland

c. Adrenal gland

d. Pituitary gland

44. In insects the prothoracic gland secretes a hormone called

A. Juvenile hormone

B. Pheromone

C. Ecdyson

D. Alellochemicals

45. In insects the ecdyson bring about

A. Moulting

B. Growth

C. Metamorphosis

D .None of the above

46. The hormone secreted by the corpus allatum is called

A. Juvenile hormone

B. Ecdyson

C. Pheromone

D. Growth hormone

47. What is the nature of juvenile hormone?

A. Retain the larval characters

B. Retain the pupa characters

C. Retain the adult characters

D. None of the above

48. A Y-organ, which produces a moult accelerating hormone, has been described in some -----

a. Protozoan

b. Crustaceans

c. Mollus

d. Echinoderms

49. The interaction of the moult-preventing and moult-accelerating -------may be the regulatory device in the moulting process.

A. Hormones

B .Pheromones

C. Alleochemicals

D. Lymphoid fluid

50. Neurosecretory cells in the X-organ and in the brain produce a moult-preventing hormone which is stored in the-------.

A. Thyroid gland

B. Adrenal gland

C. Sinus gland

D. Pituitary gland

51. Example for secreation of moult-preventing and moult-accelerating hormone is---------

A. Crustaceans

B. Molluscs

C. Echinoderm

D.Protozovans

52. The chemical substances used for communication are called.

A. Pheromones

B. Allelochemicals

C. Hormones

D. Semiochemicals

53. Chemicals are used for communication between individuals of the same species.

A. Interspecific

B. Intraspecific

C. Isolation

D. speciation

54. Chemicals are used for communication between individuals of different species.

A. Interspecific

B. Intraspecific

C. Isolation

D. speciation.

55. Bombykol secreted by female silk moths in an important example for----

A. Pheromone

B. allelochemicals

C.Horomone

D. semiochemicals

56. Example for marker pheromones are produced by ------------

A. Tiger

B. Elephant

C. Goat

D. Cow

57. Pheromones bring about changes in the physiology of the animal which in turn changes the--

A. Feeding

B. Locomotion

C. Behavior

D. Respiration

58. Best Example for Trail pheromones are-------------

A. Termites

B. Dog

C. Tiger

D. Goat

59. Aldehydes and Ketones are common components of alarm pheromones. These are also reported in certain----------------.

A. Ambhibians

B.Birds

C. Fishes

D.Reptiles

60. Allelochemicals are released into the environment by

A. Animal organs

B. Bacteria

C. Virus

D. plant organs

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1-A | 2-C | 3-D | 4-A | 5-B | 6-D | 7-C | 8-C | 9-C | 10-B |
| 11-A | 12-D | 13-A | 14-C | 15-A | 16-C | 17-B | 18-B | 19-C | 20-A |
| 21-B | 22-A | 23-A | 24-C | 25-A | 26-A | 27-D | 28-B | 29-A | 30-B |
| 31-A | 32-C | 33-C | 34-A | 35-B | 36-D | 37-C | 38-A | 39-C | 40-A |
| 41-A | 42-B | 43-A | 44-C | 45-A | 46-A | 47-A | 48-B | 49-A | 50-C |
| 51-A | 52-D | 53-B | 54-A | 55-A | 56-A | 57-C | 58-A | 59-C | 60-D |

Unit-III (FM)

1. How many daughter individuals was produced by binary fission of Paramecium.

A. Two

B. one

C. Four

D. Eight

2. Binary fission is an------------------- reproduction

A. Sexual

B. Asexual

C. Parthinogenisis

D. None of the above

3. Conjugation is a -------------------reproduction in paramecium.

A. Sexual

B. Asexual

C.Parthenogenesis

D. None of the above

4. Which animal has palmella stage during reproduction?

A. Amoeba

B. Paramecium

C. Euglena

D. volvox

5. How many nuclei received by each daughter paramecium at the end of autogamy ?

A. Two macronucleus and two micronuclei

B. One macronucleus and one micronuclei

C. One macronucleus and two micronuclei

D. one macronucleus and three micronuclei

6. How many daughter individuals formed at the end of endomixis ?

A. Two

B. One

C.Three

D. Four

7. The development of an organism from an unfertilized egg is called

A. Conjugation

B. Parthenogenesis

C. Endomixis

D. Autogamy

8 Hemixis is a type of ------------------

A. Reproduction

B. Locomotion

C. Excreation

D. Digestion

9. Cytogamy is kind of---------------

A. Sexual reproduction

B. Asexual reproduction

C. Parthenogenesis

D. None of the above

10. Which animal has atoke and epitok in their body ?

A. Neries B. Heteroneries

C. Amoeba D. Euglena

11. ---------------- is the fundamental larva of all echinoderms

A. Bipinnaria

B. Brachiolaria

C. Dipleurula

D. Auricularia

12. The Dipleurula larva develops into the ------------------ larva.

A. Bipinnaria

B.Brachiolaria

C. Dipleurula

D. Auricularia

13. How many paired and unpaired arms has Bipinnaria larva?.

A. Two unpaired and five paired arms

B. Three unpaired and four paired arms

C. Four unpaired and two paired arms

D. Four unpaired and three paired arms

14. ----------------- is the second larva of starfish.

A. Bipinnaria

B.Brachiolaria

C.Dipleurula

D.Auricularia

15. ----------------- is the third larva of starfish.

A. Bipinnaria

B.Brachiolaria

C.Dipleurula

D.Auricularia

16. ----------------- is the larva of Ophiuroidea.

A. Ophiopluteus

B. Brachiolaria

C.Dipleurula

D. Auricularia

17. Ophiopluteus larva look like letter-------

A. B

B. A

C. V

D. O

18. ----------------- is the larva of Echinoidea.

A. Ophiopluteus

B. Echinopluteus

C. Dipleurula

D. Auricularia

19. ----------------- is the larva of Holothuroidea.

A. Ophiopluteus

B. Echinopluteus

C. Dipleurula

D. Auricularia

20. Doliolaria larva is also called a--------------

A. Adult

B. Young one

C. Pupa

D. Finger links

21. The shape of Doliolaria is-----------shaped

A. Square

B. Barrel

C. Round

D. Triangle

22. ----------------- is the larva of Antedon.

A. Ophiopluteus B. Echinopluteus

C. Dipleurula D. Pentacrinoid

23. The nautiloids are the primitive----------------------

A. Arthropods

B. Echinoderms

C. Cephalopods

D. Annelids

24. Nautiloids originated in the ----------------period of Palaeozoic era.

A. Cambrian

B. Ordovician

C. Silurian

D. Devinian

25. Most of the nautiloids became extinct during -------------- periods.

A. Cambrian

B. Ordovician

C. Triassic

D. Jurassic

26. Nautilus is------------------- animals.

A. Fresh water

B. Brackish water

C. Estuarine

D. Marine

27. Ammonoids originated in the -------------------- Period.

A. Cambrian

B. Ordovician

C. Devonian

D. Jurassic

28. Ammonoids flourished well in the -------------------- era.

A. Cenozoic

B. Mesozoic

C.paleozoic

D.Neoproterozoic

29. Ammonoids are---------------

A. Fossils

B. Living fossils

C. Extant animals

D. None of the above

30. Ammonoids originated from----------------

A. Echinoderms

B. Nautiloids

C. Annalids

D. Arthropods

31. Belemnites morphologically closely resembled with-----------------

A. Pila

B. Skates

C. shark

D. Sepia

32. Belemnites originated from ------------------

A. Ammonoids

B. Nautiloids

C. Annelids

D.Arthropods

33. Belemnites became extinct by the beginning of----------------- era.

A. Mesozoic

B. Cenozoic

C. Paleozoic

D. Neoproterozoic

34. Trilobites were abundant during the beginning of ---------------era

A. Mesozoic

B. Cenozoic

C. Palaeozoic

D. Mesoproterozoic

35. According to monophyletic theory-------- was the ancestor of Trilobita

A. Annelida

B. Arthropoda

C. Echinodermata

D. Protozova

36. Trilobite was definitely most primitive ----------------

A. Annelida

B. Arthropod

C. Echinodermata

D. Protozova

37. Chaetognatha is commonly known as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

A. Arrow-worms

B. Nematodes

C. Silk worms

D. Neries

38. Chaetognatha are primitive------------------------------

A. Protocoelomate

B. Pseudocoelomate

C. Eucoelomate

D. Acoelomate

39. The body shape of Chaetognatha is-----------------------

A. Torpedo-shaped

B. Spindle shaped

C. Square shaped

D. Triangle shaped

40. Chaetognatha has on either side of mouth ------------------ chitinous hooks

A. Sickle –shaped

B. Round shaped

C. Road shaped

D. Square shaped

41. An Unique feature of the Chaetognatha is the ----------

A. Hood

B. Spin

C. Bones

D. Nerves

42. How many pigmented cups are present in each eye of Chaetognatha ?

A.7

B.3

C.5

D.1

43. Chaetognatha Olfactory organs are-----------------------

A. Tactile

B. Thermo

C.Chemoreceptors

D.None of the above

44. Chaetognatha are------------------------------------------

A. Dioecious

B.Monocious

C. Hermaphrodite

D. Parthinogenesis

45 . Phoronids are----------------------------

A.Carnivores

B. omnivores

C. Filter feeder

D. Sanginivores

46. Phoronids excreatory system consists of------------------------

A. Protonephridia

B. Mesonephridia

C. Nephridia

D.Metanephridia

47. Phoronids circulatory system are--------------------- Type

A. Open Type

B. Closed type

C. Double circulation type

D. None of the above

48. Phoronids are-------------------------

A. Tubicolous

B. Burrowing

c. Aerial

D. Terrestial

49, Phoronids lophrophore are----------------------shaped

A. Horse-shoe

B. Camel-shoe

C. Elephant-shoe

D. Donkey-shoe

50. Phoronids is----------------------

A.Hermaphrodite

B. Dioecious

C. Atoke

D. Epitoke

51. Free swimming larva of Phoronis is called------------------------

A. Bipinnaria

B. Actinotrach

c.Brachiolaria

d.Dipleurula

52. Rotifera are---------------------------- animals

A.Acoelomate

B.Eucoelomate

C.Pseudocoelomate

D. None of the above

53. Corona organ is present in------------------- animals

A.Phoronida

B.Chaetognatha

C. Trilobites

D. Rotifer

54. The secretion of pedal gland in Rotifer is used for------------------------

A. Digestion

B. Attachment

C. Locomotion

D. Feeding

55. Which animal has trophi?

A.Phoronida

B.Chaetognatha

C. Trilobites

D. Rotifer

56. What is the use of trophy in rotifer?

A. Eject the food materials

B.Grind the food materials

C.Digest the food materials

D. Absorb the food materials

57. Papillae function as -------------------- receptors in rotifer.

A. Tactile

B.Chemo

C.Thermo

D.None of the above

58. The amictic females of rotifer produces--------------- eggs.

A. Diploid egg

B, Haploid egg

C. Monoploid egg

D. Polyploid egg

59. The mictic females of rotifer lays --------- eggs

A. Diploid egg

B. Haploid egg

C. Monoploid egg

D. Polyploid egg

60. The fertilized .thick walled egg of Rotifers are called------------ eggs

A. Summer egg B. spring egg

C. Winter egg D. Autumn egg

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1-A | 2-B | 3-A | 4-C | 5-C | 6-D | 7-B | 8-A | 9-A | 10-B |
| 11-C | 12-A | 13-A | 14-A | 15-B | 16-A | 17-C | 18-B | 19-D | 20-C |
| 21-B | 22-D | 23-C | 24-A | 25-B | 26-D | 27-C | 28-B | 29-A | 30-B |
| 31-D | 32-B | 33-B | 34-C | 35-A | 36-B | 37-A | 38-A | 39-A | 40-A |
| 41-A | 42-C | 43-C | 44-C | 45-C | 46-D | 47-B | 48-A | 49-A | 50-A |
| 51-B | 52-C | 53-D | 54-B | 55-D | 56-B | 57-A | 58-A | 59-B | 60-C |

**UNIT-IV**

1, Study of internal structure of animals is

a, anatomy

b, histology

c, morphology

d, physiology

2, Outermost protective covering of animals is

a, feathers

b, integument

c,scales

d, hains

3, Which is not a function of skin

a,protection

b,locomotion

c,secretion

d,digestion

4, Integumentary gland secreting tears is

a ,mammory gland

b, sebarceous gland

c, lacrymal gland

d,uropygial gland

5,In the presence of sunlight vitamin D is synthesised in ammalian skin from

a, sweat

b, earwax

c, sebum

d, tears

6, Dermis of vertebrate integument is derived from

a,ectoderm

b,mesoderm

c,endoderm

d,ectomesoderm

7,Melanocytes are located in

a,stratum corneum

b,stratum germinativum

c, stratum lucidum

d, dermis

8,Poison secreted by parotid glands of amphibian is

a, alkaloid

b, alcohol

c, fatty acids

d, carbohydrate

9, Reflecting pigment cells in luminescent glands contain

a,guanine crystals

b,adenine crystals

c,cystosine crystals

d, thymine crystals

10,In birds urophygial glands are restricted to

a, beak

b,eye

c,tail

d,ear

11,In hippopotamus sweat gland are restricted to:

a, ear

b, muzzle

c, lips

d, soles of feet

12, Digital cornifications are modifictions of :

a, stratum corneum

b, stratum germinativum

c, stratum lucidum

d, dermis

13,In living amphibians exoskeleton is

a, hairy

b, horny

c, nails

d,absents

14, Which of the following is a pelvic bone

a, llium

b,scapula

c,clavicle

d,coracoid

15,Cartilage bone is

a, parietal

b,lacrimal

c,quadrate

d,prefrontal

16,Cranium is the constituent of

a, dermatocranium

b,splancho cranium

c,visceral skeleton

d,neurocranium

17,In modern amphibians the collumella of middle ear is modified

a, basisphenoid

b,sphonoid

c,hyomandibular

d,mandibular

18, Foramen magnum in birds faces

a, upwards

b,downwards

c,left

d,right

19.The jaw suspensorium in elasmobranches

a,antodiastylic

b,amphistylic

c,autostylic

d,hyostylic

20, A single prominent mid-ventral of centrum in vertabrates

a,hypapophysis

b,zygapophysis

c,diapophysis

d,parapophysis

21, Skull in cyclostomes is made of

a,replacing bones

b,cartilage

c,membrane bones

d,dermal plate

22 The part of archenteron connected to yolksac

a, primitive gut

b, foregut

c,mid gut

d,hind gut

23. Oesophagus in adult vertabrates is derived from

a, primitive gut

b, foregut

c,mid gut

d,hind gut

24,True muscular lips are found in

a, cyclostomes

b,fishes

c,amphibions

d,mammals

25,The largest oral glands are found in

a,mammals

b,birds,

c,reptiles

d,amphibions

26,In frogs tongue is

a, primary tongue

b,definite tongue

c, horny tongue

d,immobile tongue

27,Largest oesophagus is found in

a,dog fish

b,frog

c,giraffe

d,sparrow

28,Epithelial lining in a true stomach contains :

a, salivary glands

b,mucous glands

c,goblet cells

d,gastric glands

29.In ruminants true stomach is represented by

a, abomasum

b,reticulum

c,rumen

d,omasum

30.Gills and lungs of vertabrates are the derivatives of embryonic \_\_\_\_\_\_\_\_\_\_\_

a,pharynx

b,archenteron

c,heart

d,kidney

31, A complete gill is called

a, dermibranch

b,holobranch

c,hemibranch

d,pseudobranch

32, In bony fishes operculum arises from

a,hyomandibular

b,mandible

c,sphenethmoid

d,hyoid arch

33.Lungs of reptiles are located in

a,neck

b,thorax

c,abdomen

d,tail

34, Respisratory organ of embryonic vertabrates is

a,yolk sac

b, ammion

c,chorion

d,egg membrance

35, During submergence in aquatic turtles the accessory respiratory organ is

a,skin

b,grill

c,cloacal bladder

d,air sacs

36. Circulatory system does not

a,transport nutrients

b, transport excreatory products

c,transport hormones

d, transfer impulses

37, Smallest arteries are connected to smallest veins by

a,arterioles

b,muscles

c,capillaries

d,venules

38, In urodeles conus is replaced by

a, aorta

b,vena cavo

c,bulbus arteriosus

d,foreman ovals

39, The union of sinus venosus wih right auride in mammals is maked by extemally

a,sulcus terminalis

b,cristal terminalis

c,sinus venarus

d,appendix curriculae

40, The opening of coronary sinus is guarded by

a,besian valve

b,mitral valve

c,semilunar valve

d,tricuspid valve

41.Functional unit of kidney is

a,,nephron

b,neuron

c,renal corpuscle

d,glomeruli

42, Hypothetical premitive kidney is

a,archinephros

b,pronephros

c, nephron

d,mesonephron

43, Archinephros is found in

a, fishes

b,reptiles

c,larval cyclostomes

d,amphibians

44, Wolffian body is

a,archinephros

b,pronepheros

c, mesonephros

d,metanephros

45, Urinary bladder opens to exterior through

a,uleter

b,urethera

c,pelvis

d,tubule

46, The functional adult gonad is derived from which part of genital ridge

a,gonal

b,pregonal

c,epigonal

d,endogonal

47, In mammal testes are found in

a,peyers patches

b,bidders organ

c,inguinal canal

d,scrotal canal

48, Oviduct in vertebrates is modified

a,wolffian duct

b,mullerian duct

c,inguinal canal

d,urinary duct

49, Copulatory organs are absent in

a,woflfian duct

b,anamniotes

c,bidders organ

d,mullerian duct

50, Uriniferous tubule is a

a,funnel – like

b,cuplike

c,round cup

d,hollow

51. Malpighian body is a

a,ciliated

b,tube-like

c,funnel- like

d,cup-like

52, Operculum is present in

a,ratfish

b,electric ray

c,bonny fih

d,guitar fish

53,Respiratory fibrous membrane is called

a,capillaries

b,airsacs

c,alveoli

d,pulmonary membrane

54, The exchange of gases between the external environment and the lungs is \_\_\_\_\_\_\_

a, respiration

b,external respiration

c,cellular respiration

d,none of the above

55,Yolk sac is present in

a,bony fish

b,embryonic vertebrate

c,fishes

d,birds

56, Alimentary canal is present in

a,vertebrate

b,invertebrate

c,coelenterata

d,protozoa

57, Femoral glands are present in

a,fish

b,birds

c,lizards

d,mammals

58,Poison glands are present in

a,fishes and amphibians

b,fishes and reptiles

c,birds and mammals

d,mammals and fish

59, Sweat glands are present in the skin of

a,fishes

b,birds

c,mammals,

d,repiles

60, Skeleton of body wall is called

a,axial skeleton

b,somatic skeleton

c,visceral skeleton

d,appendicular skeleton

**ANSWERS** :

| **1-a, 2- b, 3-d ,4 -c, 5 -c, 6 -b, 7 -d, 8-a, 9-a, 10 -c,11 -a,12 -a, 13 -d, 14-a, 15 -c, 16 -a, 17 -c, 18 -b, 19 -d, 20 -a, 21 -a,22-b, 23-c, 24-b, 25 -d, 26 -a,27 -b, 28 -c, 29-d, 30-a , 31-b, 32-d,33-c,34-a,35-c,36-d,37-c,38-c,39-a,40-a,41-a,42-a,43-c,44-c,45-b,46-a,47-d,48-b,49-b,50-a,51-d,52-c,53-d,54-b,55-b,56-a,57-c,58-a,59-c,60-b,** |
| --- |

Unit-V

1. In nervous system, ------------ transmits impulses.

A. [Neuron](https://www.newworldencyclopedia.org/entry/Neuron)

B. Tissue

C. Muscle

D. Blood

2. Which organ serves as the center of the nervous system in all [vertebrate](https://www.newworldencyclopedia.org/entry/Vertebrate) and most [invertebrate](https://www.newworldencyclopedia.org/entry/Invertebrate) animals?

A. [Brain](https://www.newworldencyclopedia.org/entry/Brain)

B. Spinal cord

C. Blood

D. Tissue

3. -------------- is the field of science that focuses on the study of the nervous system.

A. Neurophysiology

B. Urology

C. [Neuroscience](https://www.newworldencyclopedia.org/entry/Neuroscience)

D. Serology

4. --------------is the medical specialty dealing with disorders and diseases of the nervous system.

A. Nephrology

B. [Neurology](https://www.newworldencyclopedia.org/entry/Neurology)

C. Urology

D. serology

5. The nervous system contains two main types of cells

A.  [Neurons](https://www.newworldencyclopedia.org/entry/Neuron) and [glial cells](https://www.newworldencyclopedia.org/entry/Glial_cell" \o "Glial cell).

B. Nephron and Nephron cell

C. Tissue and Tissue cell

D. Blood and blood cell

6. The brain and the spinal cord comprise the----------- [nervous system](https://www.newworldencyclopedia.org/entry/Central_nervous_system) of vertebrates.

A. Cranial

B. Central

C. Spinal

D. Autonomic

7. Both the brain and the spinal cord develop from the embryonic feature known as the

A. Neural tube

B. Dorsal nerve cord.

C. Noto cord

D. Gill slits

8. The spinal cord functions primarily in the transmission of neural signals between ------ .

A. Sketeton and muscle system

B. Blood and circulatory system

C. The brain and the rest of the body

D. cell and organ system

9. What inflammation produce severe damage of the spinal cord’s gray matter and produces poliomyelitis and paralysis ?.

A. Viral inflammation

B. Bacterial inflammation

C. Fungal inflammation

D. Nematodes inflammation

10. Where is the brain located?

A. Vertebral column

B. Skull

C. Ribes

D. Lungs

11. Where is the spinal cord located?

A. Vertebral column

B. Skull

C. Ribs

D. Lungs

12. Both the spinal cord and the brain contain--------

A. Red matter and Black matter.

B. Green matter and Blue matter

C. Brown matter and Yellow matter

D. white matter and gray matter

13. -----------matter can be understood as the parts of the brain and spinal cord responsible for information transmission.

A. White B. Gray

C. Red D. Black

14. ------matter is mainly responsible for information processing (neuron bodies).

A. Gray B. White

C. Red D. Black

15. [Visceral](https://www.merriam-webster.com/dictionary/Visceral) fibers innervate the viscera such as the -------

A. [Heart](https://www.britannica.com/science/heart) and intestines

B. Lungs

C. Brain

D. Eyes

16. What part of the brain controls visceral functions?

A. Hypothalamus B. Thyroid C. Adrenal D. Parathyroid

17. How many cranial nerves are in vertebrates?

A. 12

B. 10

C.11

D. 9.

18. Where are the 12 cranial nerves located?

A. Brain and brain stem

B. Spin and spinal cord

C. Notocord

D. Neural tube

19.How many spinal nerves are in human being?

A. 31

B. 21

C.11

D.41

20. The brain of vertebrates developed by the accumulation of ---------at the cephalic end of the nerve cord.

A. Blood cell

B. Nerve cells

C. Muscle cell

D. Tissue cell

21. The gonads, the primary reproductive organs, are the -----------in the male

A. Testes

B. Ovaries

C. Eggs

D.Gland

22. The gonads, the primary reproductive organs, are the -----------in the female

A. ovaries

B. Testes

C. Glands

D. Veins

23 .Testes are responsible for producing the -----.

A. Egg

B. sperm

C.Ova

D. Blood

24. Ovaries are responsible for producing the -----.

A. Sperm

B. Blood

C. Ova.

D. Nerve

25. The testes, the primary reproductive organs in males, generate sperm cells and produce the hormone--------------.

A. Estrogen

B. Progesterone

C. Testosterone

D. Lactogen

26. The accessory glands of the male reproductive system are the seminal vesicles, ----------------- and the bulbourethral glands.

A. Prostate gland

B. Fallopian tubes

C. ovaries

D. Uterus

27. The testes are the primary reproductive organs and generate sperm cells through a process called--------------.

A. Oogenesis

B. spematogonia

C. spermatogenesis

D.Oogonia

28.Which era is called Golden age of Reptiles ?

A.Cenozoic era

B.Mesozoic era

C.Paleozoic

D. Neoproterozoic

29. Pterosaurs are------------------reptiles

A. Mammal like reptiles are

B .Flying reptiles

C. Aquatic reptiles

D.Reptiles like Dinosaurs

30. Ichthyosaurs are------------------reptiles

A. Mammal like reptiles are

B .Flying reptiles

C. Marine reptiles

D. Reptiles like Dinosaurs

31. Therapsids are---------reptiles

A. Mammal like reptiles

B .Flying reptiles

C. Marine reptiles

D. Reptiles like Dinosaurs

32. Thecodonts are appeared at the beginning of the ---------------- Period

A. Triassic

B. Cretaceous

C. Jurassic

D. Paleogene

33. Dinosaurs are extinct at the end of ----------------- Period

A. Cretaceous

B. Triassic

C. Jurassic

D.Paleogene

34. Ornithischian Dinosaurs had no----------------

A. Tail

B. Teeth

C. Eyes

D. Tung

35. The upper portion of skull and jaws were modified into--------------- in Ornithischians.

A. Beak

B. Teeth

C. Tung

D. Eyes

36. which type of Mesozoic reptiles had leg and feet were modified into Paddles .

A. Ichithyosaurs

B. Therapsids

C. Pterosaurs

D. Saurischia

37. Evidence for the origin of birds from reptiles is

A. Ichithyosaurs

B. Therapsids

C. Pterosaurs

D. *Archaeopteryx lithographica*

38. *Archaeopteryx lithographica* meaning-------------------

A. Ancient teeth

B. Ancient wing

C. Ancient jaws

D. Ancient skull

39. *Archaeopteryx is the primitive birds it is considered to be a connecting link between*

A .Reptiles and birds

B. Mammals and birds

C. Amphibians and fishes

D. Mammals and reptiles

40. Ichthyostega an extinct -------------------Showed fish like characters.

A. Fish

B. Amphibian

C. Bird

D. Mammal

41. Temnospondyls are the only "Labyrinthodonts" considered to be

A. True fish

B. True amphibian

C. True reptile

D. True bird

42. The Anthracosauria are the direct ancestral to the early----------------and thus separate from modern ("true") amphibians.

A. Reptiles

B. Fishes

C. Birds

D. Mammals

43 The Ichthyostegalia are ancestral to all-------------------.

A . Aquatic forms

B. Tetrapodes,

C. Land forms

D. Aerial forms

44. The Labyrinthodontia evolved from a ------------- fish group.

A. Cartilagenouse fish

B. Teleost fish

C. Bony fish

D. None of the above

45. Where Labyrinthodonts were laid their eggs ?

A. Water

B. Land

C. Trees

D. Cave

46. Labyrinthodonts are the most ancient amphibians evolved during the------------- period.

A. Cretaceous

B. Jurassic

C. Devonian

D. Triassic

47. Ostracoderms was extinct, primitive, jawless

A. Reptiles

B. Fishes

C. Birds

D. Mammals

48. Ostracoderms [fishes](https://www.newworldencyclopedia.org/entry/Fish) that were covered in an armor of------------ plates.

A. Bony

B. Catilage

C.Scale

D. Fleshy

49. Ostracoderms [fossils](https://www.newworldencyclopedia.org/entry/Fossil) are found in the North American and European strata of

A. [Paleozoic](https://www.newworldencyclopedia.org/entry/Paleozoic) era,

B. Mesozoic era

C. Coenozoiv era

D. Neoproterozoic era

50. Ostracoderms was use their gills only for-----------.

A. Feeding

B. Respiration

C. Locomotion

D. Digestion

51. Placoderms were among the first [jawed](https://en.wikipedia.org/wiki/Jawed_fish)

A. Fish

B. Reptile

C.Bird

D. Amphibian

52. Many placoderms, were ---------------dwellers

A. Column-dwellers

B. Bottom-dwellers

C. Surface-dwellers

D .Aerial habitats

53. Crossopterygian, primitive, lobe-finned----- fishes

A. Cartilaginous

B. Scaled

C. Bony

D.Fleshy

54. Crossopterygian appeared at the beginning of the ------------Period

A. [Devonian Period](https://www.britannica.com/science/Devonian-Period)

B. Silurian

C. Ordovician

D. Cambrian

55. Bony fish Sarcopterygii was ------- fishes in the subphylum Vertebrata.

A. ray-finned

B.Flishy-finned

C .Finless

D. Lobe-finned

56. Actinopterygii was-----------finned fishes in the subphylum Vertebrata.

A. Ray-finned

B. Lobed- finned

C .Flishy-finned

D. Finless

57. The Rhipidistia, predatory [fishes](https://www.britannica.com/animal/fish) of the Paleozoic, were ancestral to the terrestrial [vertebrates](https://www.britannica.com/animal/vertebrate) and lived predominantly in ------------water.

A. Marine

B. Fresh

C. Estuary

D. Brackish

58. The geologic time scale is a system of --------------dating that classifies geological strata in time.

A. Chronological

B. Alphabetical

C. Numerical

D. None of the above

59. The geologic time scale.  it is used to know the events in ------------history.

A. Geologic

B. Galaxy

C. Human

D. Plant

60. The geological time scale was developed through the study and observation of layers of ------

A. Land

B. Ocean

C. Soil

D. Rock

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1-A | 2-A | 3-C | 4-B | 5-A | 6-B | 7-B | 8-C | 9-A | 10-B |
| 11-A | 12-D | 13-A | 14-A | 15-A | 16-A | 17-A | 18-A | 19-A | 20-B |
| 21-A | 22-A | 23-B | 24-C | 25-C | 26-A | 27-C | 28-B | 29-B | 30-C |
| 31-A | 32-A | 33-A | 34-B | 35-A | 36-A | 37-D | 38-B | 39-A | 40-B |
| 41-B | 42-A | 43-B | 44-C | 45-A | 46-C | 47-B | 48-A | 49-A | 50-B |
| 51-A | 52-B | 53-C | 54-A | 55-D | 56-A | 57-B | 58-A | 59-A | 60-D |