

GOVERNMENT ZIRTIRI RESIDENTIAL SCIENCE COLLEGE

Subject : Zoology
Paper name : Chordate Biology & Anatomy
Paper No : ZL-II
Semester : Second

A. Multiple choice questions:

1. Chondrichthyes are characterized by
 - a) long tail
 - b) presence of notochord
 - c) cartilaginous skeleton
 - d) lateral line system
2. Member of Mammalia that does not have nipples
 - a) *Echidna*
 - b) Horse
 - c) Kangaroo
 - d) Elephant
3. Circulation is peculiar and unique in *Herdmania*, because it is
 - a) open
 - b) closed
 - c) two hearts
 - d) alternatively reversed
4. Protochordata are unique in that
 - a) they are all sedentary animals
 - b) notochord is reduced
 - c) they exhibit aerial respiration
 - d) they show sexual dimorphism
5. Early cleavage in *Amphioxus* is
 - a) incomplete
 - b) complete and meroblastic
 - c) complete and holoblastic
 - d) None of the above
6. Which type of scale is found in the Crossopterygii?
 - a) cosmoid
 - b) ganoid
 - c) placoid
 - d) cycloid
7. An example of potamodromous fishes is
 - a) gobies
 - b) herrings
 - c) carps and trouts

GOVERNMENT ZIRTIRI RESIDENTIAL SCIENCE COLLEGE

- d) mackerel
8. Neoteny occurs due to lack of
a) iodine and TSH
b) LH
c) GH
d) FSH
9. In *Scoliodon* the internal ear acts as
a) organs of hearing
b) controls orientation and equilibrium with regard to gravity (balance)
c) thermoreceptor
d) rheoreceptor
10. The process of respiration in frog follows the order
a) internal respiration → external respiration → transport of gases
b) external respiration → internal respiration → transport of gases
c) external respiration → transport of gases → internal respiration
d) internal respiration → transport of gases → external respiration
11. The exoskeleton of pigeon is derived from
a) epidermis
b) dermis
c) exodermis
d) endodermis
12. Snake venom consists mainly of
a) lipids
b) proteins
c) sugars
d) None of the above
13. The bone that holds the fangs of the snake is
a) maxilla
b) mandible
c) pterogoid
d) None of the above
14. A contour feather typically consists of
a) central axis
b) outer web
c) inner web
d) rachis
15. The pigeon flies on the principle of
a) indirect movement
b) direct movement
c) displacement movement

GOVERNMENT ZIRTIRI RESIDENTIAL SCIENCE COLLEGE

d) airflow

GOVERNMENT ZIRTIRI RESIDENTIAL SCIENCE COLLEGE

16. The sweat glands in humans are called
 - a) sebaceous glands
 - b) stratum corneum
 - c) sudiferous glands
 - d) None of the above

17. Which of the following is known as the "jack of all trades" of vertebrates?
 - a) urinogenital system
 - b) digestive system
 - c) integumentary system
 - d) respiratory system

18. The receptor that detects chemicals in gaseous state is called
 - a) gustoreceptor
 - b) olfactoreceptor
 - c) tangoreceptor
 - d) rheoreceptor

19. The length of alimentary canal is maximum in
 - a) carnivores
 - b) herbivores
 - c) omnivores
 - d) detritivores

20. Three-chambered heart is found in
 - a) *Scoliodon*
 - b) frog
 - c) Turtle
 - d) Crocodile

21. Oxyhaemoglobin is represented by the formula
 - a) HbO_2
 - b) H_2bO_2
 - c) $2 \text{H}_2\text{bO}_2$
 - d) 2HbO_2

22. Functional unit of lungs is
 - a) neuron
 - b) bronchioles
 - c) pulmonary veins
 - d) alveoli

23. The first process occurring in the respiratory organs is called
 - a) breathing
 - b) oxygen
 - c) homeostasis
 - d) carbon dioxide

GOVERNMENT ZIRTIRI RESIDENTIAL SCIENCE COLLEGE

24. The appendages that serve for gaseous exchange through the medium of water are
- a) lungs
 - b) ventilated lungs
 - c) gills
 - d) modified lungs
25. Yellow elastin fibres are found in which of the following
- a) calcified cartilage
 - b) elastic cartilage
 - c) fibrous cartilage
 - d) normal cartilage

B. Fill in the blanks:

1. Chordates having the skull are grouped as_____.
2. In Aves the forelimbs are modified for_____.
3. The three primary germ layers are established in_____.
4. Type of migration involving the search of food and water is called_____.
5. Respiration through skin is called_____.
6. Inspiration is immediately followed by another process called_____.
7. The scapus is divided into calamus and_____.
8. The quill feathers from the general body covering are called_____.
9. Shedding and replacement of feather is called_____.
10. The three- and four-chambered hearts in vertebrates have_____circulation.
11. The outermost epithelial layer of the integument in vertebrates is known as_____.
12. Lateral line receptor system is the characteristic of group_____in vertebrates.
13. The outermost layer of the mammalian tooth consists of_____.
14. Haemoglobin is a_____coloured pigment.
15. Each group of vessels in compact bones constitute a_____canal

GOVERNMENT ZIRTIRI RESIDENTIAL SCIENCE COLLEGE

Answer Key

A. Multiple choice questions

- | | | | | | | |
|---------|---------|---------|---------|---------|---------|---------|
| 1. (c) | 2. (a) | 3. (d) | 4. (b) | 5. (c) | 6. (b) | 7. (c) |
| 8. (a) | 9. (b) | 10. (c) | 11. (a) | 12. (b) | 13. (b) | 14. (a) |
| 15. (a) | 16. (c) | 17. (c) | 18. (b) | 19. (b) | 20. (b) | 21. (a) |
| 22. (d) | 23. (a) | 24. (c) | 25. (b) | | | |

B. Fill in the blanks

1. Craniata
2. flying
3. gastrula
4. alimantal
5. cutaneous
6. expiration
7. shaft
8. contours
9. moulting
10. double
11. stratum corneum
12. Pisces
13. enamel
14. red
15. Haversian

GOVERNMENT ZIRTIRI RESIDENTIAL SCIENCE COLLEGE

Subject: **Zoology**

Paper name: **Endocrinology & Reproduction Biology**

Paper No: **IV**

Semester: **Fourth**

Rename this file as [Subject]-[Semester]-[Paper No] and submit directly to zoology@pucollege.edu.in

A. Multiple choice questions:

1. Insulin is secreted by
 - a) β cells
 - b) α cells
 - c) islets of Langerhans
 - d) D cells
2. Calcitonin is secreted by
 - a) thyroid gland
 - b) parathyroid gland
 - c) pituitary gland
 - d) renal gland
3. A condition in which blood sugar is increased above the normal level is
 - a) hyperglycemia
 - b) myxoedema
 - c) simple goitre
 - d) cretinism
4. Excess secretion of growth hormone (GH) during childhood leads to
 - a) gigantism
 - b) acromegaly
 - c) Simmond's disease
 - d) Cushing syndrome
5. Steroid hormones are derived from
 - a) cholesterol
 - b) serotonin
 - c) epinephrine
 - d) thyroid
6. Which of the following is a class of steroid hormones
 - a) corticosteroids
 - b) sex steroids
 - c) progesterone
 - d) Both (a) and (b)
7. Which of the following is used for the treatment of diabetes
 - a) antibiotics
 - b) therapy

GOVERNMENT ZIRTIRI RESIDENTIAL SCIENCE COLLEGE

c) fasting

GOVERNMENT ZIRTIRI RESIDENTIAL SCIENCE COLLEGE

- d) insulin
8. Guanine nucleotide protein is also known as
 - a) Gn-binding protein
 - b) G-protein
 - c) P-guanine
 - d) nucleotide proteins
 9. Glucose is stored in the liver in the form of
 - a) starch
 - b) maltose
 - c) sucrose
 - d) glycogen
 10. Pick the odd one out
 - a) progesterone
 - b) androgens
 - c) estrogens
 - d) carcinogen
 11. A sequence of events that repeat themselves at regular time intervals at the same time is called
 - a) Rhythm
 - b) Cycle
 - c) Equilibrium
 - d) Constant
 12. Biological rhythm with a period length less than 24 hours
 - a) Infradian
 - b) Ultradian
 - c) Time median
 - d) Chronology
 13. A biological rhythm that has a 24 hour cycle is called
 - a) Hibernation
 - b) Circadian
 - c) Circatidal
 - d) Aestivation
 14. Glucose homeostasis is the balance of insulin and glucagon to maintain glucose in ...
 - a) liver
 - b) plasma
 - c) blood
 - d) cellular
 15. Formation and maintenance of teeth and bones is done by
 - a) calcium
 - b) glucose
 - c) cellulose

GOVERNMENT ZIRTIRI RESIDENTIAL SCIENCE COLLEGE

d) sucrose

GOVERNMENT ZIRTIRI RESIDENTIAL SCIENCE COLLEGE

16. The process of maturation of male gametes is called
 - a) spermatogenesis
 - b) mitosis
 - c) oogenesis
 - d) spermateleosis

17. In the female, FSH and LH trigger the production of
 - a) testosterone
 - b) estrogen
 - c) gonadotropin
 - d) eggs

18. Hormone oxytocin acts on
 - a) smooth muscle fibres
 - b) voluntary muscles
 - c) striated muscles
 - d) pituitary gland

19. Pheromones are chemical molecules that
 - a) act on the peripheral nervous system
 - b) are released into the environment
 - c) have a sweet smell
 - d) All of the above

20. Secretions of the preen gland in social seabirds act as
 - a) trail pheromones
 - b) sex pheromones
 - c) territorial pheromones
 - d) alarm pheromones

21. Menstrual cycle not associated with bleeding is found in
 - a) New World monkeys
 - b) Rhesus monkeys
 - c) Chimpanzees
 - d) None of the above

22. Contraceptive pills do not
 - a) engulf the sperm
 - b) alter the quality of cervical muscles
 - c) prevent the entry of sperm
 - d) inhibit implantation

23. Which of the following is considered to be the last phase of menstrual cycle?
 - a) proliferative phase
 - b) destructive phase
 - c) secretory phase
 - d) ovulatory phase

GOVERNMENT ZIRTIRI RESIDENTIAL SCIENCE COLLEGE

24. Which of the following are monoestrous animals?

- a) pigs
- b) cows
- c) squirrels
- d) foxes

25. HPO axis in mammalian females is regulated by

- a) 2 endocrine glands and 3 hormones
- b) 3 endocrine glands and 5 hormones
- c) 4 endocrine glands and 4 hormones
- d) 5 endocrine glands and 5 hormones

B. Fill in the blanks:

1. Amino acid derivative hormones are commonly derived from_____.
2. _____are precursors for peptide hormones.
3. Hormones are formed by certain cells of aggregate of cells referred to as_____.
4. Blood sugar is due to presence of excess sugar in the_____.
5. In the hormone receptor, a hormone binds to a specific_____.
6. _____is an organ behind the stomach that is the main source of insulin.
7. Glucagon signals_____mobilization.
8. _____play a central role in prolonged starvation, replacing glucose as the primary fuel for the brain and signaling a reduction in protein catabolism and alanine output from muscle.
9. The persistence of biological rhythm in the absence of a synchronizing agent is known as_____.
10. At the end of gametogenesis, mature gametes contain_____chromosome number.
11. Leydig cells produce_____.
12. The female silkworm releases_____to attract males.
13. The hormone_____stimulates the pituitary gland to produce FSH and LH.
14. Estrus phase is also known as_____period in which the females become receptive to male.
15. Chemical barriers known as_____are sperm killing substances.

GOVERNMENT ZIRTIRI RESIDENTIAL SCIENCE COLLEGE

Answer Key

A. Multiple choice questions :

- | | | | | | | |
|---------|---------|---------|---------|---------|---------|---------|
| 1. (c) | 2. (a) | 3. (a) | 4. (a) | 5. (a) | 6. (d) | 7. (d) |
| 8. (b) | 9. (d) | 10. (d) | 11. (a) | 12. (b) | 13. (b) | 14. (c) |
| 15. (a) | 16. (d) | 17. (b) | 18. (a) | 19. (b) | 20. (b) | 21. (d) |
| 22. (a) | 23. (c) | 24. (d) | 25. (b) | | | |

B. Fill in the blanks :

1. tyrosine and tryptophan
2. prohormones
3. endocrine glands
4. blood
5. receptor
6. Pancreas
7. fat
8. ketones
9. free running
10. haploid
11. testosterone
12. bombykol
13. gonadotropin releasing hormone
14. heat
15. spermicides

GOVERNMENT ZIRTIRI RESIDENTIAL SCIENCE COLLEGE

Subject: **Zoology**

Paper name: **Molecular Biology & Genetics**

Paper No: **IX**

Semester: **Sixth**

A. Multiple choice questions:

1. The distance between two nucleotides in double helix DNA is
 - a) 34 Å
 - b) 3.4 Å
 - c) 20 Å
 - d) 10 Å
2. DNA strands are called "anti-parallel" because of
 - a) hydrogen bond
 - b) phosphodiester bonds
 - c) disulphide bonds
 - d) glycosidic bonds
3. The loops of Lampbrush chromosomes are rich in
 - a) tRNA and DNA
 - b) mRNA
 - c) rRNA and proteins
 - d) DNA and proteins
4. A nucleosome is made up of
 - a) DNA
 - b) histone
 - c) histone wrapped over octameric core of nucleic acid
 - d) DNA wrapped over octameric core of histone
5. Polytene chromosomes are formed due to repeated division of chromosomes without cytoplasmic division, called
 - a) mitosis
 - b) meiosis
 - c) endomitosis
 - d) endomeiosis
6. DNA replication occurs in
 - a) G1 phase
 - b) G2 phase
 - c) S phase
 - d) Interphase
7. Semiconservative DNA replication was first demonstrated by
 - a) Taylor
 - b) Watson and Crick

GOVERNMENT ZIRTIRI RESIDENTIAL SCIENCE COLLEGE

- c) Meselson and Stahl
 - d) Khorana
8. Okazaki fragments are formed in
- a) the splicing of RNA
 - b) the synthesis of lagging strand of DNA
 - c) the neurons of vertebrates
 - d) the oocytes of amphibians
9. Which of the following is an agent that damages DNA
- a) chemicals used in chemotherapy
 - b) earthquake
 - c) lightning
 - d) None of the above
10. Breaks in the backbone of DNA may be caused due to
- a) a single strand break
 - b) breakage of hydrogen bond
 - c) a single stranded or double stranded break
 - d) None of the above
11. The amino acid that initiates translation is
- a) methionine
 - b) arginine
 - c) formylated methionine
 - d) lysin
12. The part of tRNA that takes part in interaction with the codon of mRNA is called
- a) T-loop
 - b) aminoacid attachment site
 - c) D-loop
 - d) anticodon
13. Which one of the following is stop codon?
- a) UAA
 - b) UAG
 - c) UGA
 - d) All of the above
14. Which one of the following is not a component of the lac operon model?
- a) promoter
 - b) structural gene
 - c) primer gene
 - d) regulator gene
15. The enzyme that transcribes RNA is
- a) DNA polymerase I
 - b) DNA polymerase III

GOVERNMENT ZIRTIRI RESIDENTIAL SCIENCE COLLEGE

c) RNA polymerase

GOVERNMENT ZIRTIRI RESIDENTIAL SCIENCE COLLEGE

- d) aminoacyl synthetase
16. In monohybrid cross, a typical genotype ratio is
- 3:1
 - 9:7
 - 9:3:3:1
 - 1:2:1
17. Which one of the following is called "law of purity of gametes"?
- law of segregation
 - law of dominance
 - law of independent assortment
 - All of the above
18. ABO group is an example of
- sex-linked inheritance
 - non-disjunction of chromosomes
 - pleiotropic genes
 - multiple allelism
19. Which part of the cytoplasm is responsible for cytoplasmic inheritance?
- egg
 - sperm
 - Both (a) and (b)
 - None of the above
20. Chromosome theory of inheritance has been proved by
- Strasburger and Fleming
 - Sutton and Boveri
 - Mendel
 - Hertwig and van Beneden
21. Which of the following is a sex-linked trait?
- haemophilia
 - Klienfelter syndrome
 - Turner syndrome
 - Downs syndrome
22. Downs syndrome is
- XO females
 - XXY males
 - Trisomy 18
 - Trisomy 21
23. Strength of linkage is related inversely to distance between
- genes
 - chromatids
 - chromosomes

GOVERNMENT ZIRTIRI RESIDENTIAL SCIENCE COLLEGE

d) telomeres

GOVERNMENT ZIRTIRI RESIDENTIAL SCIENCE COLLEGE

24. When released from the ovary, the human egg contains
- one Y chromosome
 - one X chromosome
 - two X chromosomes
 - XY chromosomes
25. Synaptonemal complex is observed during
- meiotic prophase
 - mitotic prophase
 - meiotic metaphase
 - mitotic telophase

B. Fill in the blanks:

- DNA is associated with highly basic proteins called _____.
- The chromosomal puffs of polytene chromosomes are called _____.
- The diffuse form of chromatin that stains lightly is called _____.
- DNA replication occurs in _____ direction.
- In DNA replication, the strand which is synthesized continuously is called _____.
- _____ repair system is responsible for removing small, non helix distorting base lesions from the genome.
- The number of nonsense codons are _____.
- The 3'-OH of one nucleotide is linked to 5'-phosphate of the next by _____ bond.
- Transcription is the transfer of genetic information from _____ to mRNA.
- _____ refers to any of the several forms of a gene.
- Maternal inheritance is due to genes present in _____.
- Genes are located on _____.
- _____ are chromosomes except sex chromosomes.
- _____ syndrome is caused by non-disjunction of chromosomes.
- The loss of one single chromosome creates a condition called _____.

GOVERNMENT ZIRTIRI RESIDENTIAL SCIENCE COLLEGE

Answer Key

A. Multiple choice questions

1. b)	2. b)	3. c)	4. d)	5. c)	6. c)	7. c)
8. b)	9. a)	10. c)	11. c)	12. d)	13. d)	14. c)
15. c)	16. d)	17. a)	18. d)	19. a)	20. b)	21. a)
22. d)	23. a)	24. c)	25. a)			

B. Fill in the blanks

1. histones
2. Balbiani rings
3. euchromatin
4. 5'-3'
5. leading strand
6. base excision
7. three
8. phosphodiester bond
9. DNA
10. allelism
11. mitochondria
12. chromosomes
13. autosomes
14. Downs
15. monosomy

GOVERNMENT ZIRTIRI RESIDENTIAL SCIENCE COLLEGE

Subject: **Zoology**

Paper name: **Developmental Biology**

Paper No: **X**

Semester: **Sixth**

A. Multiple choice questions:

1. Energy for swimming of spermatozoan is provided by
 - a) acrosome
 - b) Golgi rest
 - c) mitochondria
 - d) flagellum
2. Eggs produced by the female contain varying quantities of food matter produced from
 - a) vitellin
 - b) yolk
 - c) vitellogenesis
 - d) None of the above
3. The developing embryo is afforded protection by
 - a) amnion
 - b) chorion
 - c) allantoin
 - d) None of the above
4. Parthenogenesis is the production of young ones
 - a) without interaction of male
 - b) without interaction of female
 - c) without interaction of egg
 - d) without interaction of sperm
5. Holoblastic radial cleavage is shown by
 - a) *Amphioxus*
 - b) molluscs
 - c) nematodes
 - d) amphibians
6. The cleavage plane which divides the embryo into unequal hemispheres in frog is
 - a) 1st
 - b) 2nd
 - c) 3rd
 - d) 4th
7. Involution at the blastopore is initiated by the
 - a) ectoderm
 - b) endoderm
 - c) mesoderm

GOVERNMENT ZIRTIRI RESIDENTIAL SCIENCE COLLEGE

- d) flask cells
8. Human placenta is classified as
- a) epitheliochorial
 - b) endotheliochorial
 - c) haemochorial
 - d) haemoendothelial
9. The strongest maternal-foetal bond is observed in
- a) epitheliochorial placenta
 - b) endotheliochorial placenta
 - c) haemochorial placenta
 - d) haemoendothelial placenta
10. The use of fate maps as a tool to study development was introduced by
- a) Lovtrup
 - b) Balinsky
 - c) Vogt
 - d) Keller
11. Nobel Prize for discovery of neural induction and for discovery of organizer was awarded to
- a) Balinsky
 - b) Waddington
 - c) Spemann and Mangold
 - d) Berrill
12. Noggin, chordin and follistatin are secreted factors that
- a) induce neural tissues in isolated animal cap
 - b) dorsalize mesoderm
 - c) inhibit mesoderm ventralizing BMP-4
 - d) All of the above
13. The movement of the presumptive ectoderm layer is called
- a) epiboly
 - b) emboly
 - c) convergence
 - d) None of the above
14. The inward rolling of presumptive notochordal cells along the dorsal lip of blastopore, followed by the inward rolling of the presumptive mesodermal cells along the lateral and ventral lips of blastopore is termed
- a) epiboly
 - b) emboly
 - c) involution
 - d) convergence
15. Gradient concept was proposed by
- a) Runnstorm

GOVERNMENT ZIRTIRI RESIDENTIAL SCIENCE COLLEGE

b) Boveri

GOVERNMENT ZIRTIRI RESIDENTIAL SCIENCE COLLEGE

- c) Horstadius
 - d) Child
16. The moulting hormone is
- a) ecdysone
 - b) JH
 - c) testosterone
 - d) prolactin
17. *Ubx* helps in formation of
- a) limb
 - b) wing
 - c) eye
 - d) segmentation
18. The changes in shape, size, and habitat of an organism is called
- a) metamorphosis
 - b) growth
 - c) moulting
 - d) cleavage
19. Incomplete metamorphosis is also called
- a) hemimetaboly
 - b) ametaboly
 - c) holometaboly
 - d) heterometaboly
20. Which one of the following does not show holometabolic development
- a) bees
 - b) moths
 - c) beetle
 - d) grasshopper
21. The study of individual and collective ageing processes
- a) Ethology
 - b) Psychology
 - c) Gerontology
 - d) Chronology
22. Examples of stressors do not include
- a) Illness
 - b) Infections
 - c) Success
 - d) Injuries
23. There is gradual loss of bone mass starting around the age of
- a) 20
 - b) 13

c) 25

GOVERNMENT ZIRTIRI RESIDENTIAL SCIENCE COLLEGE

d) 30

24. The process of introducing a gene from one organism into the genome of another is called
- Transgenesis
 - Cloning
 - Transplant
 - Surgery
25. IVF stands for
- In vivo fertilization
 - In vitro fertilization
 - In vital fertilization
 - In vitro fertility

B. Fill in the blanks:

- _____ enzymes are contained in the spermatozoan acrosome.
- Centrolecithal and macrolecithal eggs are a characteristic feature of_____.
- Reduced or haploid parthenogenesis (haplodiploidy) or arrhenotoky is exhibited by_____.
- The larger yolk laden cells in cleavage are called_____.
- Movement of cells during gastrulation and neurulation are called_____ movements.
- During chick development, a diverticulum of the mid gut spreads over and encloses the yolk mass, forming the_____.
- The inward rolling of presumptive notochordal cells along the dorsal lip of blastopore, followed by the inward rolling of the presumptive mesodermal cells along the lateral and ventral lips of blastopore is termed_____.
- Morphogenetic movements end with the formation of the embryonic gut and the establishment of the _____ primary germinal layers.
- Splitting of blastoderm anteriorly into the outer epiblast (ectoderm) and inner hypoblast (endoderm) is known as_____.
- Grasshopper, cockroaches, cicadas and mantids have a terrestrial young called_____.
- _____ hormone is secreted by the corpora allata.
- Prothoracicatropin (PTTH) is a family of protein hormones of molecular weight_____ to 50 kD.
- A cell with unique ability to develop into specialized cell types in the body is called_____.
- As we get older the_____ of eye loses fluid and become less flexible, making it more difficult to focus at the near range.
- _____ is a pattern of life changes that occurs as one grows older.

GOVERNMENT ZIRTIRI RESIDENTIAL SCIENCE COLLEGE

Key Answers

A. Multiple choice questions :

- | | | | | | | |
|---------|---------|---------|---------|---------|---------|---------|
| 1. (c) | 2. (a) | 3. (b) | 4. (d) | 5. (a) | 6. (c) | 7. (d) |
| 8. (c) | 9. (d) | 10. (c) | 11. (c) | 12. (d) | 13. (a) | 14. (c) |
| 15. (b) | 16. (a) | 17. (d) | 18. (a) | 19. (a) | 20. (a) | 21. (c) |
| 22. (c) | 23. (d) | 24. (a) | 25. (b) | | | |

B. Fill in the blanks :

1. Proteolytic
2. insects
3. hymenoptera: bees and wasps (any answer is acceptable)
4. megameres or macromeres
5. morphogenetic
6. yolk sac
7. involution
8. three
9. delamination
10. nymph
11. juvenile
12. 10
13. stem cells
14. lens
15. Ageing

GOVERNMENT ZIRTIRI RESIDENTIAL SCIENCE COLLEGE

Subject: **Zoology**

Paper name: **Parasitology & Immunology**

Paper No: **XI**

Semester: **Sixth**

A. Multiple choice questions:

1. The intermediate host of *P. falciparum* is
 - a) *Phlebotomus*
 - b) Man
 - c) *Glossina*
 - d) *Anopheles*
2. A parasite of connective tissue
 - a) *Trypanosoma brucei*
 - b) *Leishmania*
 - c) *P. falciparum*
 - d) *Ascaris*
3. A parasite of the reticuloendothelial system is
 - a) *Leishmania*
 - b) *Trypanosoma brucei*
 - c) *P. falciparum*
 - d) Tse tse fly
4. *Glossina* is one vector of
 - a) African sleeping sickness
 - b) *Leishmaniasis*
 - c) Malaria (*falciparum*)
 - d) Visceral leishmaniasis
5. The transmission of *Leishmania donovani* from man to man is carried out by
 - a) *Phlebotomus*
 - b) Tsetse fly
 - c) *P. falciparum*
 - d) *Anopheles*
6. Cysticercus larva of *Taenia solium* occurs in
 - a) man
 - b) pig
 - c) sheep
 - d) snail
7. Neurocysticercosis is caused by
 - a) *Taenia solium*
 - b) *Taenia saginata*
 - c) *Echinococcus granulosus*

GOVERNMENT ZIRTIRI RESIDENTIAL SCIENCE COLLEGE

- d) *Leishmania donovani*
8. The adult *Taenia saginata* may live for up to
- 10 years
 - 15 years
 - 5 years
 - 20 years
9. Lifespan of adult *Echinococcus granulosus* is
- 6 months
 - 10 months
 - 7 months
 - 8 months
10. Apolysis takes place in
- Taenia solium*
 - Taenia saginata*
 - Echinococcus granulosus*
 - Trypanosoma*
11. Infective stage of *Schistosoma* of human is
- sporocyst
 - cercariae
 - redia
 - rhabditiform
12. The disease caused by *Schistosoma* is called
- Schistosoma mansoni*
 - visceral schistosomiasis
 - Egyptian sphenimegaly
 - All of the above
13. The development in snail takes about
- 1 to 2 weeks
 - 2 to 4 weeks
 - 3 to 6 weeks
 - 4 to 8 weeks
14. Name a parasite without intermediate host
- T. solium*
 - Schistosoma*
 - Leishmania*
 - Ascaris*
15. Moulting occurs in
- Echinococcus*
 - T. brucei*
 - Ascaris*

GOVERNMENT ZIRTIRI RESIDENTIAL SCIENCE COLLEGE

d) *P. falciparum*

GOVERNMENT ZIRTIRI RESIDENTIAL SCIENCE COLLEGE

16. Disease causing entity is also known as
 - a) antibody
 - b) antigen
 - c) interferon
 - d) cytokine

17. Small protein molecules that function as cell signals are called
 - a) interferons
 - b) kinins
 - c) cytokines
 - d) plasma

18. B-lymphocytes that do not differentiate into plasma cells are called
 - a) T-lymphocytes
 - b) helper T-cells
 - c) memory B cells
 - d) memory T-cells

19. Plasma cells are a specific type of immune cells which secretes
 - a) antibodies of many types
 - b) a specific antibody
 - c) lysozyme
 - d) antigen

20. Clonal selection occurs when antigen is encountered by
 - a) basophils
 - b) eosinophils
 - c) neutrophils
 - d) T-cells

21. Immunoglobins secreted by lymphocytes are of
 - a) 3 types
 - b) 4 types
 - c) 5 types
 - d) 8 types

22. Immunoglobulins are composed of light and heavy chains, stabilized by
 - a) peptide bonds
 - b) disulphide bridges
 - c) covalent bonds
 - d) None of the above

23. This 'macroglobulin' is the largest antibody
 - a) IgG
 - b) IgM
 - c) IgA
 - d) IgE

GOVERNMENT ZIRTIRI RESIDENTIAL SCIENCE COLLEGE

24. Antibody-antigen binding occurs through
- antigen binding fragment
 - paratope of antigen and epitope of antibody
 - epitope of antigen and paratope of antibody
 - All of the above
25. Major histocompatibility complex (MHC) are encoded by genes on
- chromosome 2
 - X chromosome
 - chromosome 6
 - chromosome 8

B. Fill in the blanks:

- Preerythrocytic schizogony comprises a single cycle and lasts _____ days.
- The time taken for the complete evolution of the infective forms (metacyclic stage) inside the Tsetse fly is about _____.
- _____ is the period between the time of the initial infection and the appearance of clinical manifestation.
- Cysticercus bovis* does not occur in _____.
- The larval worm of *Echinococcus granulosus* causes _____ in man.
- When ingested by dogs, the fertile hydatids are capable of growing into adult worms in about _____.
- _____ penetrate the unbroken skin of man.
- _____ are 25-40 cm in length with a maximum diameter of 5 mm.
- _____ enter the lumen of an appendix, causing appendicitis.
- _____ is a part of an antibody which recognizes and binds to an antigen
- The goal of vaccination is to provide memory to the immune system of the body against particular pathogen, by injecting _____ live pathogen.
- The clonal selection theory was introduced by _____.
- Immunoglobulin _____ has the ability to traverse the placenta between mother and foetus.
- The immunoglobulin found in serum and secretory forms is _____.
- Undesirable reactions produced by the normal immune system are referred to as _____.

GOVERNMENT ZIRTIRI RESIDENTIAL SCIENCE COLLEGE

Key Answers

A. Multiple choice questions:

- | | | | | | | |
|--------|--------|--------|--------|--------|--------|--------|
| 1. b) | 2. a) | 3. a) | 4. a) | 5. a) | 6. a) | 7. a) |
| 8. a) | 9. a) | 10. a) | 11. b) | 12. d) | 13. a) | 14. c) |
| 15. c) | 16. b) | 17. c) | 18. c) | 19. b) | 20. d) | 21. c) |
| 22. b) | 23. b) | 24. c) | 25. c) | | | |

B. Fill in the blanks:

1. 6 days
2. 20 days
3. incubation period
4. man
5. unilocular hydatid disease
6. 6 to 7 weeks
7. fork-tailed cercariae
8. female *Ascaris*
9. wandering *Ascaris*
10. paratope
11. inactivated
12. Frank Macfarlane Burnet
13. IgG
14. Immunoglobulin A (IgA)
15. hypersensitivity

GOVERNMENT ZIRTIRI RESIDENTIAL SCIENCE COLLEGE

Subject: **Zoology**

Paper name: **Ecology and Wildlife**

Paper No: **XII (B)**

Semester: **Sixth**

A. Multiple choice questions:

1. Synecology deals with
 - a) ecology of many species
 - b) ecology of many populations
 - c) ecology of community
 - d) None of the above
2. The bottom area where production is less than respiration in a pond ecosystem is termed
 - a) profundal zone
 - b) tidal zone
 - c) benthic zone
 - d) limnetic zone
3. The pyramid of energy in an ecosystem
 - a) is always upright
 - b) may be upright or inverted
 - c) is always inverted
 - d) None of the above
4. In an ecosystem, the energy flow is
 - a) always unidirectional
 - b) always bidirectional
 - c) in any direction
 - d) always down direction
5. The biotic component that contributes by producing food is
 - a) autotrophs
 - b) producers
 - c) Both (a) and (b)
 - d) heterotrophs
6. The cyclic movement of chemical elements of the biosphere between the organisms and the environment are referred to as
 - a) sediment-reservoir cycles
 - b) Calvin cycle
 - c) biogeochemical cycles
 - d) atmosphere reservoir cycle
7. Agrobacterium is involved in which of the following processes?
 - a) Ammonification
 - b) Nitrification

GOVERNMENT ZIRTIRI RESIDENTIAL SCIENCE COLLEGE

- c) Reduction of nitrate to ammonia
 - d) Denitrification
8. The role of bacteria in carbon cycle is
- a) Breakdown of organic compounds
 - b) Photosynthesis
 - c) Chemosynthesis
 - d) Assimilation of nitrogen compounds
9. Which of the following processes is performed by *Thiobacillus thiooxidans*?
- a) converts sulphur to sulphates
 - b) converts sulphur to sulphides
 - c) converts sulphur to sulphites
 - d) converts organic sulphur to inorganic sulphur
10. Phosphorous cycle absorbs phosphates in the form of
- a) HPO_3^-
 - b) P_2
 - c) PO_4^{3-}
 - d) AlPO_4
11. The ability of an organism to survive in a particular habitat or to have the size of a population in a community is determined by its
- a) limiting factor
 - b) tolerance
 - c) adaptability
 - d) None of the above
12. A biotic community is a local association of several
- a) individuals
 - b) populations
 - c) species
 - d) communities
13. An intermediate transitional zone between two distinct communities is called
- a) ecotype
 - b) paratype
 - c) ecotone
 - d) midtone
14. The intermediate stage found in an ecosystem advancing towards its climax community is
- a) feral community
 - b) seral community
 - c) successful community
 - d) ecesis
15. Global warming is said to be an effect of

GOVERNMENT ZIRTIRI RESIDENTIAL SCIENCE COLLEGE

a) pollution of rivers

GOVERNMENT ZIRTIRI RESIDENTIAL SCIENCE COLLEGE

- b) industrial revolution
 - c) melting of polar ice
 - d) greenhouse gases
16. The minimum quantity of any factor that produces a precipitable effect on the organism is known as
- a) threshold
 - b) rate
 - c) equilibrium
 - d) stable
17. The stable community that ends the succession is called
- a) climax community
 - b) stable community
 - c) sere community
 - d) threshold community
18. The succession that begins in an area with adequate moisture is called
- a) hydrach
 - b) xerach
 - c) mesarch
 - d) lithosphere
19. The average rise in the earth climatic system is due to
- a) C_2O_2
 - b) CO_2
 - c) $2 CO_2$
 - d) C_2O
20. The O_3 layer is present above the
- a) mesosphere
 - b) stratosphere
 - c) lithosphere
 - d) hydrosphere
21. The death rate of a population is called
- a) mortality
 - b) natality
 - c) fatality
 - d) density
22. A group of people occupying a particular space is called
- a) population
 - b) community
 - c) society
 - d) pack
23. Equilibrium density is denoted by
- a) K

GOVERNMENT ZIRTIRI RESIDENTIAL SCIENCE COLLEGE

b) E

GOVERNMENT ZIRTIRI RESIDENTIAL SCIENCE COLLEGE

- c) k
- d) e

24. A term used to define the number of species in an area is
- a) species density
 - b) species diversity
 - c) species richness
 - d) species quality
25. Shannon-Weiner Index is defined by the expression
- a) $H = \sum[(p_i) \times \ln(p_i)]$
 - b) $H = (p_i)$
 - c) $H = \sum[p_i]$
 - d) $H = \sum[\ln(p_i)]$

B. Fill in the blanks:

1. _____ defined ecology as the study of the relationship of organisms with their environment.
2. Aravalli hills ecosystem is found in _____.
3. In ecology, energy flow is also referred to as _____ flow.
4. In the carbon cycle, the human body returns carbon to the atmosphere through _____.
5. _____ sequester most carbon from the atmosphere.
6. The evaporation of water from the surfaces and its precipitation is known as _____.
7. Law of Tolerance was proposed by _____.
8. Ecological _____ is the process of change in the species structure of an ecological community over time.
9. _____ contributes most to greenhouse gases.
10. Flora and fauna are the _____ component of the environment.
11. The succession that occurs after changes in an already existing ecosystem _____ succession.
12. When Earth's atmosphere traps the sun's heat it is called _____ effect
13. The study of ecology of individuals of the same species is called _____ ecology.
14. When the density of the organisms rapidly and then stops abruptly it is denoted by _____ curve.
15. _____ is a term used to define the number of species in an area (Species richness) and the distribution of these species in that ecosystem.

GOVERNMENT ZIRTIRI RESIDENTIAL SCIENCE COLLEGE

Key Answers

A. Multiple choice questions :

- | | | | | | | |
|---------|---------|---------|---------|---------|---------|---------|
| 1. (c) | 2. (a) | 3. (a) | 4. (a) | 5. (c) | 6. (c) | 7. (d) |
| 8. (a) | 9. (a) | 10. (c) | 11. (b) | 12. (b) | 13. (c) | 14. (b) |
| 15. (d) | 16. (a) | 17. (a) | 18. (c) | 19. (b) | 20. (b) | 21. (a) |
| 22. (a) | 23. (a) | 24. (c) | 25. (a) | | | |

B. Fill in the blanks :

1. Ernst Haeckel
2. Rajasthan
3. calorific
4. carbon dioxide *or* cellular respiration
5. Plants
6. Hydrological cycle
7. Shelford
8. succession
9. Carbon dioxide
10. biotic
11. secondary
12. Greenhouse
13. population
14. J-shaped
15. Species diversity