Department of Zoology
B.Sc. First Semester
Protozoa to Annelida-I (Paper No I)

Multiple Choice Question

1. The causative organism of gambian fever
a) Leishmania b) **Trypanosoma** c) Amoeba d) Entamoeba

2. Name the rectal ciliate
a) Paramecium b) Plasmodium c) **Opalina** d) Actinophrys

3. 'Aristotle lantern'is seen in
a**) Antedon** b) Star fish c) Echinus d) Ophiothrix

4. The connecting link between annelids and arthropods is
a) Nereis b) Belostoma c) **Peripatus** d) Balanus

5. The animal which causes parasitic castration is
a) Eupagurus b) **Sacculina** c) Crab d) Lepisma

6. The first larvae of penaeus
a) Zoea b) Nauplius c) Mysis d) **Protozoea**

7. Name the mushroom coral
a) Favia b) Fungia c) **Madrepora** d) Aurelia

8. Name of the phylum to which 'Arrow worms' belong to
a) Rotifera b) **Hemichordata** c) Chaetognatha d) Annelida

9. Which of the following is an arachnid ectoparasite?
a) Spider b) Scorpion c) Daphnia d) **Tick**
10. The function of contractile vacuole
a) Nutrition b) Reproductionc) **Osmoregulation** d) Locomotion

11. Mention the class of Echinococcus
a) **Cestoda** b) Trematoda c) Turbularia d) Nematodes

12. The larva of balanoglossus
a) Planule b) Trochophore c) **Tornaria** d) Veliger

13. The reproductive zooids of obelia colony
a) **Hydrotheca** b) Perisarc c) Blastostyle d) manubrium

14. Example of cyclostomata
a) **Petromyzon** b) Ascidia c) Amphioxus d) Narcine

15. Malaria is transmitted through
a) Female culex mosquito b**) Female anopheles** mosquito c) Female aedes
mosquito d) None of the above

16. Chikungunya is a
a) Bacterial disease b) **Viral disease** c) Fungal infection d) None of the above

17. Earthworms used in vermi composting
a) ***Eisenia foetida, Perionyx excovatus, Eudrilus eugineae***
b) *Pheretima posthuma & Megascolex mauritius*
c) *Bombyx mori & Apis indica*
d) None of the above
18. Internal buds of sponges produced during adverse conditions
a) Archaeocytes b) Osculum c) Micropyle d) **Gemmule**

19. Cnidoblast are found in
a) **Cnidaria** b) Protista c) Porifera d) Placozoa

20. Liver rot is caused by
a) Ascaris b) **Fasciola** c) Planaria d) Bipalium

Department of Zoology
B.Sc. First Semester
Paper II Cell Biology

Multiple Choice Question

Q:1: **Which one of following is true about chloroplast**
(A) It is underground part
(B) It helps in pollination
(C) Self replicating organelle
(D) Involve in Lipid synthesis
Q:2: **One of the following is not double membranous structure**
(A) Mitochondrion
(B) Vacuole
(C) Chloroplast
(D) Nucleus
Q3: **Tay Sach's disease is because of**
(A) Accumulation of proteins
(B) Accumulation of glycogen
(C) Accumulation of lipids
(D) Accumulation of vitamins
Q:4: **Modification of proteins and lipids as glycopeptides and lipo-proteins occur in**
(A) Ribosomes
(B) Golgi apparatus
(C) SER
(D) All A, B and C
Q:5: **Ribosomes are chemically composed of**
(A) Protein
(B) Only DNA
(C) RNA
(D) Both A + C
Q:6: **Detoxification of harmful drugs is the function**
(A) RER
(B) SER
(C) Both A and B
(D) None of the above
Q:7: **Which type of cell would probably be most appropriate to study chloroplasts**
(A) Conducting cell
(B) Photosynthetic cell
(C) Pericycle cell
(D) All options are correct

Q:8: **Cell wall consist of**
(A) One main layer
(B) Two main layers
(C) Three main layers
(D) Four main layers
Q:9: **Leucoplast are found**
(A) Petals
(B) Ripened fruits
(C) Underground parts
(D) Leaves
Q:10: **The intake of solid food by infloding of cell membrane is called**
(A) Exocytosis
(B) Pinocytosis
(C) Phagocytosis
(D) Both B and C
Q:11: **The structure within a cell that distinguishes the cell as being eukaryotic, and prokaryotic is**
(A) Ribosomes
(B) Cell membrane
(C) Cell wall
(D) Nucleus
Q:12: **Microtubules consist of helically stacked molecules of the protein**
(A) Actin
(B) Myosin
(C) Keratin
(D) Tubulin
Q:13: **The microfilaments composed of**
(A) Actin protein
(B) Gelatin protein
(C) Keratin protein
(D) Tubulin protein
Q:14: **Lysosomes have**
(A) Single-layered membrane
(B) Double-layered membrane
(C) Three-layered membrane
(D) No membrane
Q:15: **Which of the following are regularly assembled and disassembled during cell cycle.**
(A) Microtubules
(B) Intermediate filaments
(C) Both A and B
(D) None of these
Q:16**: Plant cell wall**
(A) Provide rigidity to the cell
(B) Maintains cell shape
(C) Prevents expansion of cell
(D) All A, B and C

Q:17: **In which organelle following reaction takes place**
6 CO2 + 6 H2O + energy (from sunlight) ---------> C6H12O6 + 6 O2
(A) Mitochondrion
(B) Peroxisome
(C) Chloroplast
(D) Glyoxysome
Q:18**: SER is abundant in cells that are involved in**
(A) Lipid metabolism
(B) Protein metabolism
(C) Glucose metabolism
(D) Calcium metabolism
Q:19: **The transport vesicles from the Endoplasmic Reticulum(ER) fuse with the ____of the Golgi apparatus.**
(A) Cis face
(B) Trans face
(C) Coated face
(D) Both A and B
Q:20: **The door to your house is like the _____ of a cell membrane?**
(A) Phospholipid bilayer
(B) Integral protein
(C) Recognition protein
(D) Peripheral protein
Q:21: **A semi permeable membrane is stretched across a chamber filled with water. The membrane is only permeable to water. 60 mg of salt is added to the left side of the chamber. Which of the following will happen?**
(A) Water will move toward the right side
(B) salt will move toward the right side
(C) Water will move toward the left side
(D) salt will move toward the left side
Q:22: **Dye injected into a plant cell might be able to enter an adjacent cell through a**
(A) Tight junction
(B) Microtubule
(C) Desmosome
(D) Plasmodesma
Q:23: **What are the two faces of the Golgi body?**
(A) Funny face and goofy face
(B) Coated face and non-coated face
(C) Saving face and loosing face
(D) Cis face and Trans face
Q:24: **Adjacent plant cells are "cemented" together by**
(A) Their primary walls
(B) Their secondary walls
(C) A middle lamella
(D) Plasmodesmata
Q:25**: What is a microscope's ability to distinguish between separate objects that are close together?**
(A) Magnification
(B) Contrast
(C) Resolving power
(D) Scanning power

Q:26: **What is the power of the objective lens of a microscope if an eyepiece of power 10x is used and the total magnification of the object is 40x?**

(A) 4

(B) 10

(C) 40

(D) 400

Q:27: **Within chloroplasts, light is captured by**

(A) Grana within cisternae

(B) Thylakoids within grana

(C) Cisternae within grana

(D) Grana within thylakoids

Q:28: **If a gene mutation prevents formation of an enzyme normally used by a lysosomes, a disease may result known as**

(A) Lysosomal abstracted disease

(B) Lysosomal secretory disease

(C) Lysosomal storage disease

(D) All A, B and C

Q:29**: Sodium ions are "pumped" from a region of lower concentration to a region of higher concentration in the nerve cells of humans. This process is an example of**

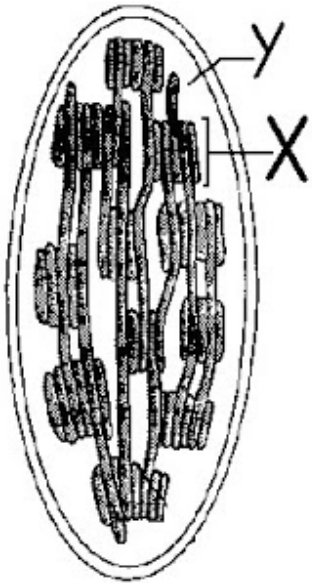
(A) Diffusion

(B) Passive transport

(C) Osmosis

(D) Active transport

Q:30: **The diagram below shows the structure of chloroplast. The structure labeled as x is**



(A) Granum

(B) Stroma

(C) Frets

(D) Lamella

Q:31: **Which of the following correctly matches an organelle with its function**?

(A) Mitochondrion . . . photosynthesis

(B) Nucleus . . . cellular respiration

(C) Ribosome . . . manufacture of lipids

(D) Central vacuole . . . storage

Q:32: **By which of the following can movement of materials across animal cell membranes be accomplished?**
I Active transport, II Diffusion, III Pinocytosis
(A) I only
(B) II only
(C) I and II only
(D) All I, II, and III
Q:33: **Hydrogen peroxide degradation in a cell is a function of**
(A) Ribosomes
(B) Mitochondria
(C) Peroxisomes
(D) Glyoxisomes
Q:34: **Cells are commonly studied in the lab. If you were examining various unlabelled slides of cells under the microscope, you could tell if the cell was from a plant by the presence of**
(A) A nucleus
(B) A cell membrane
(C) Cytoplasm
(D) A cell wall
Q:35: **Ribosomes are constructed in the**
(A) Endoplasmic reticulum
(B) Nucleoid
(C) Nucleolus
(D) Nuclear pore
Q:36**: Each chloroplast encloses a system of flattened, membranous sacs called**
(A) Cristae
(B) Thylakoids
(C) Plastids
(D) Cisternae
Q:37: **Which one of the following is an exception to cell theory**
(A) Bacteria
(B) Viruses
(C) Protists
(D) Protozoans
Q:38: **The site of enzymes directing the metabolic oxidation (respiration), ATP synthesis and considered as power house of cell are**
(A) Lysosomes
(B) Microsomes
(C) Mitochondria
(D) Golgi apparatus
Q:39**: Dictyosome is also known as**
(A) Golgi body
(B) Ribosome
(C) Lysosome
(D) Peroxisome

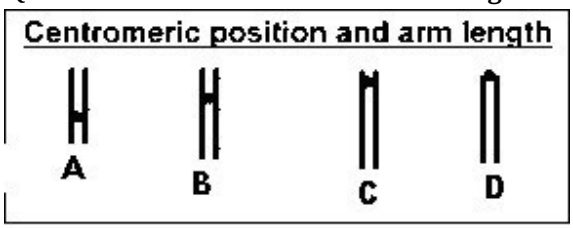
Q:40: **Biochemically the ribosome consists of _____ and some 50 structural** .
(A) mRNA, Carbohydrates
(B) tRNA, lipids
(C) mRNA, Proteins
(D) rRNA, Proteins
Q:41: **It is a mesh of interconnected membranes that serve a function involving protein synthesis and transport.**
(A) Endoplasmic reticulum
B) Cytoskeleton
(C) Golgi apparatus
(D) Both A and B
Q:42**: Plant cells contain the following 3 things not found in animal cells _____, _____ and _____.**
(A) Plastids / Chlorophyll / Membrane
(B) Chloroplast / Cell wall / Golgi body
(C) Plastids / Cell wall / Chlorophyll
(D) Mitochondria / Cell wall /
Q:43: **The largest organelle in a mature living plant cell is the**
(A) Chloroplast
(B) Nucleus
(C) Central vacuole
(D) Dictyosomes
Q:44: **Which of the following structure-function pairs is mismatched**?
(A) Lysosome-intracellular digestion
(B) Golgi body-secretion of cell products
(C) Ribosome-protein synthesis
(D) Glyoxysome-detoxification
Q:45: **The three-dimensional network of protein filaments within the cytoplasm of eukaryotic cells is called the**
(A) Endoplasmic reticulum
(B) Golgi apparatus
(C) Cytoskeleton
(D) None of these
Q:46: **Which of the following is NOT a membranous organelle**?
(A) Lysosomes
(B) Peroxisomes
(C) Centrioles
(D) Mitochondria
Q:47**: A cell that is missing lysosomes would have difficulty doing what?**
(A) Digesting food
(B) Storing energy
(C) Packaging proteins
(D) Moving cytoplasm
Q:48: **Which of the following cell part is described as a "fluid mosaic**"?
(A) Chloroplast
(B) Vacuole
(C) Cell membrane
(D) Endoplasmic reticulum

Q:49: **What part of the cell serves as the intracellular highway?**
(A) Endoplasmic reticulum
(B) Golgi apparatus
(C) Cell membrane
(D) Mitochondria
Q:50: **Which of the following would you NOT find in a bacterial cell**
(A) DNA
(B) Cell membrane
(C) Golgi apparatus
(D) Ribosomes
Q:51**: Somatic cells of a human have ____ chromosomes and are called**
(A) 10, haploid
(B) 92, diploid
(C) 23, haploid
(D) 46, diploid
Q:52: **Each chromosome consists of two identical**
(A) Genes
(B) Nuclei
(C) Chromatids
(D) Bases
Q:53: **An animal has 80 chromosomes in its gametes, how many chromosomes would you expect to find in this animal's brain cells?**
(A) 120
(B) 240
(C) 40
(D) 160
Q:54: **The length of each mitochondrion is about**
(A) 1.0 μm
(B) 0.2 μm
(C) 10 μm
(D) 2.0 μm
Q:55: **Isolation of cellular components to determine their chemical composition is called**
(A) Cell differentiation
(B) Chromatography
(C) Cell fractionation
(D) All of these
Q:56**: According to mosaic model by Singer and Nicholson plasma membrane is composed of**
(A) Phospholipids
(B) Extrinsic proteins
(C) Intrinsic proteins
(D) All of these
Q:57**: Robert Brown is well known for his discovery of**
(A) Chloroplast
(B) Photometer
(C) Nucleus
(D) Nucleolus

Q:58: **Which organelle releases oxygen**
(A) Mitochondrion
(B) Chloroplast
(C) Glyoxysome
(D) Both A and B
Q:59: **Endoskeleton of a cell is made up of**
(A) Microtubules
(B) Microfilaments
(C) Intermediate filaments
(D) All of these
Q:60**: Ribosomes are attached with ER by**
(A) Larger subunit
(B) Smaller subunit
(C) Na+ ions
(D) None of these
Q:61: **The outer most layer of cell wall is**
(A) Primary wall
(B) Secondary wall
(C) Middle lamella
(D) Plasma membrane
Q:62**: Infoldings of inner membrane in mitochondria are called**
(A) Grana
(B) Thyallkoids
(C) Cristae
(D) Frets
Q:63: **Chromosome with equal arms is called**
(A) Metacentric
(B) Sub-metacentric
(C) Acrocentric
(D) Telocentric
Q:64: **A chromosome with the centromere located very close to one end so that the shorter arm is very small is termed as**
(A) Telocentric
(B) Sub-telocentric
(C) Acrocentric
(D) Both B and C
Q:65: **The matrix surrounding the grana in the inner membrane of chloroplasts is**
(A) Cytosol
(B) Frets
(C) Stroma
(D) Inter-granal lamellae
Q:66: **A chromosome whose centromere lies at one end**.
(A) Sum-metacentric
(B) Metacentric
(C) Telocentric
(D) Acrocentric

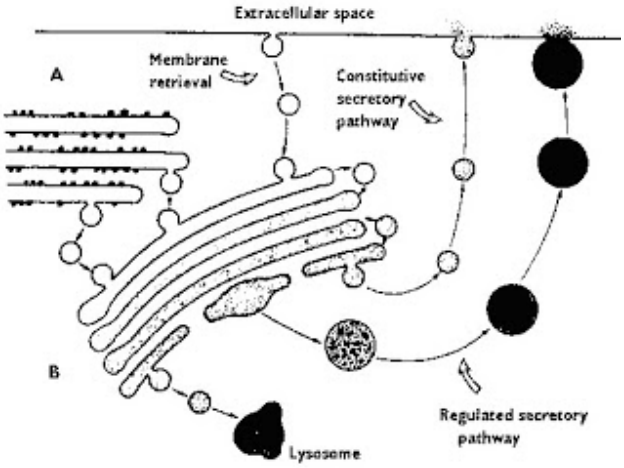
Q:67: **Lysosomes arise from,**
(A) Nucleus
(B) Endoplasmic reticulum
(C) Golgi apparatus
(D) Cell membrane
Q:68: **The primary structural component(s) of centrioles is (are):**
(A) Microtubules
(B) Microfilaments
(C) Intermediate filaments
(D) Basal bodies
Q:69**: The process of self-digestion of selective non-functional organelles by a cell through the action of enzymes originating within the cell is referred to as**
(A) Pinocytosis
(B) Endocytosis
(C) Autophagy
(D) Cytotoxicity
Q:70: :**″Proteins icebergs in a sea of lipids" is stated by**
(A) Lamellar Model
(B) Unit-membrane Model
(C) Fluid-Mosaic model
(D) Micellar Model
Q:71: **The chloroplast develop from**
(A) ER
(B) Golgi complex
(C) Nuclear membrane
(D) Proplastids
Q:72: **Peroxisomes and Glyoxisomes are**
(A) Energy transducers
(B) Membrane-less organelles
(C) Micro bodies
(D) Basal bodies
Q:73: **These are involved in conversion of fats to carbohydrates by oxidation of fats.**
(A) Peroxisomes
(B) Microsomes
(C) Glyoxisomes
(D) Phagosomes
Q:74: **Xanthophyll is a pigment having**
(A) Yellow colour
(B) Green colour
(C) Red colour
D) Blue colour
Q:75: **The covering of vacuole is known as**
(A) Chromoplast
B) Chloroplast
(C) Amyloplast
(D) Tonoplast

Q:76: **Insulin is secreted from cells in this way**
(A) Endocytosis
(B) Pinocytosis
(C) Phagocytosis
(D) Exocytosis
Q:77: _____ **increases size of an object**.
(A) Magnification
(B) Resolution
(C) Resolving power
(D) Contrast
Q:78: **The chromosome " B " in this diagram is**



(A) Metacentric
(B) Sub-metacentric
(C) Acrocentric
(D) Telocentric

Q:79: **Select the correct for label" B " in this diagram.**



(A) Endoplasmic reticulum
(B) Peroxisome
(C) Golgi apparatus
(D) Glyoxysome

Q:80: **Which of the following organelles or structures is found in both plant and animal cells**?
(A) Central vacuole
(B) Tonoplast
(C) Cell wall
(D) Peroxisomes

Answer Key:

1. C	**28. C**	**55. C**
2. B	**29. D**	**56. D**
3. C	**30. A**	**57. C**
4. B	**31. D**	**58. B**
5. D	**32. D**	**59. D**
6. B	**33. C**	**60. A**
7. B	**34. D**	**61. C**
8. C	**35. C**	**62. C**
9. C	**36. B**	**63. A**
10. C	**37. B**	**64. D**
11. D	**38. C**	**65. C**
12. D	**39. A**	**66. C**
13. A	**40. D**	**67. C**
14. A	**41. A**	**68. A**
15. A	**42. C**	**69. C**
16. D	**43. C**	**70. C**
17. C	**44. D**	**71. D**
18. A	**45. C**	**72. C**
19. A	**46. C**	**73. C**
20. B	**47. A**	**74. A**
21. C	**48. C**	**75. D**
22. D	**49. A**	**76. D**
23. D	**50. C**	**77. A**
24. C	**51. D**	**78. B**
25. C	**52. C**	**79. C**
26. A	**53. D**	**80. D**
27. B	**54. C**	

Department of Zoology
B.Sc. Second Semester
Arthropoda to Echinodermata and Protochordata
(Paper No- V)

Multiple Choice Questions

1. Taenia belongs to class
   a) **Cestoda** b) Nematoda c) Trematoda d) Turbellaria

2. Vector of filariasis
   a) Anopheles b) **Culex** c) Tse-tse fly d) Mites

3. Locomotory organ in nereis
   a) **Parapodia** b) Tentacles c) Cilia d) Flagella

4. Connecting link between Annelida and Arthropoda
   a) Nereis b) Limulus c) **Peripatus** d) Pheretima

5. Green gland is associated with
   a) **Excretion** b) Nutrition c) Defence d) Respiration

6. A mollusc with internal shell
   a) Nautilus b) Pila c) **Sepia** d) Chiton
7. Sensory cephalic tentacles in Dentalium
   a) **Byssus thread** b) Radula c) Capticula d) Osphredia

8. Larval stage of hemichordata
   a) Veliger b) Tornaria c) Trochophore d) **Glochidium**

9. Respiratory tree of sea cucumber is located at
   a) Mouth b) Cloaca c) Stomach d) **Ambulacral groove**

10. Notochord is found in the tail regionof
    a) Chordata b**) Urochordata** c) Cephalochordata d) Vertebrata

11. Removal of outer exoskeleton is the process called
    a) **Metamorphosis** b) Ecdysis c) Paedogenesis d) Gametogenesis

12. Example of a digenetic parasite
    a) Entamoeba b) Enterobium c) Planaria d) **schistosoma**

13. The causative organism of gambian fever
    a) Leishmania b) **Trypanosoma** c) Amoeba d) Entamoeba

14. Name the rectal ciliate
    a) Paramecium b) Plasmodium c) **Opalina** d) Actinophrys

15. The function of contractile vacuole
    a) Nutrition b) Reproduction c) **Osmoregulation** d) Locomotion

16. Example of cyclostomata
    a) **Petromyzon** b) Ascidia c) Amphioxus d) Narcine

17. Which of the following is not a characteristic of Phylum Annelida?
    (a) Parapodia (b**) Notochord** (c) Trochophore larva (d)Metamerism

18. ---------- is not a larva of crustaceans
    a) Nauplius (b) Mysis (c) **Trochophore** (d) Zoea

19. ---------- is the intermediate host in Malarial infection
    (a) **Man** (b) Mosquito (c) Pig (d) Snail

20) Total No of appendages in prawn are
a) 20 b) **19** c) 24 d) 30

Department of Zoology
B.Sc. Second Semester
Genetics I (Paper VI)

1. Gregor Mendel used pea plants to study
   a. flowering.
   b. gamete formation.
   c. the inheritance of traits.
   d. cross-pollination.
2. Offspring that result from crosses between true-breeding parents with different traits
   a. are true-breeding.
   b. make up the F_2 generation.
   c. make up the parental generation.
   d. are called hybrids.
3. The chemical factors that determine traits are called
   a. alleles.
   b. traits.
   c. genes.
   d. characters.
4. Gregor Mendel concluded that traits are
   a. not inherited by offspring.
   b. inherited through the passing of factors from parents to offspring.
   c. determined by dominant factors only.
   d. determined by recessive factors only.
5. When Gregor Mendel crossed a tall plant with a short plant, the F_1 plants inherited
   a. an allele for tallness from each parent.
   b. an allele for tallness from the tall parent and an allele for shortness from the short parent.
   c. an allele for shortness from each parent.
   d. an allele from only the tall parent.

6. The principle of dominance states that

   a. all alleles are dominant.

   b. all alleles are recessive.

   c. some alleles are dominant and others are recessive.

   d. alleles are neither dominant nor recessive.

7. When Gregor Mendel crossed true-breeding tall plants with true-breeding short plants, all the offspring were tall because

   a. the allele for tall plants is recessive.

   b. the allele for short plants is dominant.

   c. the allele for tall plants is dominant.

   d. they were true-breeding like their parents.

8. A tall plant is crossed with a short plant. If the tall F_1 pea plants are allowed to self-pollinate,

   a. the offspring will be of medium height.

   b. all of the offspring will be tall.

   c. all of the offspring will be short.

   d. some of the offspring will be tall, and some will be short.

9. The principles of probability can be used to

   a. predict the traits of the offspring produced by genetic crosses.

   b. determine the actual outcomes of genetic crosses.

   c. predict the traits of the parents used in genetic crosses.

   d. decide which organisms are best to use in genetic crosses.

10. In the P generation, a tall plant is crossed with a short plant. The probability that an F_2 plant will be tall is

    a. 50%.

    b. 75%.

    c. 25%.

    d. 100%.

11. Organisms that have two identical alleles for a particular trait are said to be

    a. hybrid.

    b. homozygous.

    c. heterozygous.

    d. dominant.

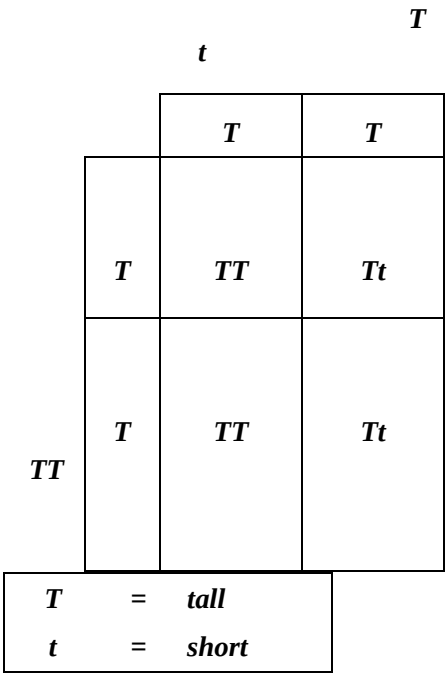


Figure 11-1

12. In the Punnett square shown in Figure 11-1, which of the following is true about the offspring resulting from the cross? (Tt x TT)

    a. About half are expected to be short.

b. All are expected to be short.

c. About half are expected to be tall.

d. All are expected to be tall.

13. The genotypic ratio of the offspring in Figure 11-1 is:

a. 2TT:2Tt

b. 2tall:2short

c. 1TT:2Tt:1tt

d. 3tall:1short

14. The phenotypic ratio of the offspring in Figure 11-1 is:

a. 2TT:2Tt

b. 2tall:2short

c. 1TT:2Tt:1tt

d. 4 tall

15. A Punnett square shows all of the following EXCEPT

a. all possible results of a genetic cross.

b. the genotypes of the offspring.

c. the alleles in the gametes of each parent.

d. the actual results of a genetic cross.

16. If you made a Punnett square showing Gregor Mendel's cross between true-breeding tall plants and true-breeding short plants, the square would show that the offspring had

a. the genotype of one of the parents.

b. a phenotype that was different from that of both parents.

c. a genotype that was different from that of both parents.

d. the genotype of both parents.

17. What principle states that during gamete formation genes for different traits separate without influencing each other's inheritance?

    a. principle of dominance

    b. principle of independent assortment

    c. principle of probabilities

    d. principle of segregation

18. How many different allele combinations would be found in the gametes produced by a pea plant whose genotype was *RrYY*?

    a. 2

    b. 4

    c. 8

    d. 16

19. If a pea plant that is heterozygous for round, yellow peas (*RrYy*) is crossed with a pea plant that is homozygous for round peas but heterozygous for yellow peas (*RRYy*), how many different phenotypes are their offspring expected to show?

    a. 2

    b. 4

    c. 8

    d. 16

20. Situations in which one allele for a gene is not completely dominant over another allele for that gene are called

    a. multiple alleles.

    b. incomplete dominance.

    c. polygenic inheritance.

    d. multiple genes.

21. A cross of a red cow (RR) with a white bull (WW) produces all roan offspring (RRWW). This type of inheritance is known as

    a. incomplete dominance.

    b. polygenic inheritance.

    c. codominance.

    d. multiple alleles.

22. The number of chromosomes in a gamete is represented by the symbol

    a. Z.

    b. X.

    c. N.

    d. Y.

23. If an organism’s diploid number is 12, its haploid number is

    a. 12.

    b. 6.

    c. 24.

    d. 3.

24. Gametes have

    a. homologous chromosomes.

    b. twice the number of chromosomes found in body cells.

    c. two sets of chromosomes.

    d. one allele for each gene.

25. Gametes are produced by the process of

a. mitosis.

b. meiosis.

c. crossing-over.

d. replication.

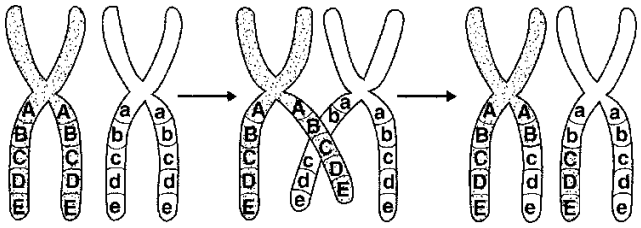


Figure 11-3

26. What is shown in Figure 11-3? (Figure 11-16 in your book)

a. independent assortment

b. anaphase I of meiosis

c. crossing-over

d. Replication

27. Chromosomes form tetrads during

a. prophase of meiosis I.

b. metaphase of meiosis I.

c. interphase.

d. anaphase of meiosis II

28. What happens between meiosis I and meiosis II that reduces the number of chromosomes?

a. Crossing-over occurs.

b. Metaphase occurs.

c. Replication occurs twice.

d. Replication does not occur.

29. Unlike mitosis, meiosis results in the formation of

    a. diploid cells.

    b. haploid cells.

    c. 2N daughter cells.

    d. body cells.

30. Unlike mitosis, meiosis results in the formation of

    a. two genetically identical cells.

    b. four genetically different cells.

    c. four genetically identical cells.

    d. two genetically different cells.

31. In a 2 factor cross where both parents are heterozygous for both traits (TtYy x TtYy), the expected phenotypic ratio would be:

    a. 1:1:1:1

    b. 12:4

    c. 3:1

    d. 9:3:3:1

32. When you flip a coin, what is the probability that it will come up tails?

    a. ½

    b. ¼

    c. 1/8

    d. 1

33. The wide range of skin colors in humans comes about because more than four different genes control this trait. This is an example of:

    a. multiple alleles

    b. polygenic traits

    c. Codominance

    d. incomplete dominance

34. Human blood type alleles of A and B are equally dominant to each other and are both expressed. This is an example of:

a. codominance
b. incomplete dominance
c. polygenic traits
d. multiple alleles

35. Human blood types are produced by alleles A, B, and O. Having more than 2 alleles control a trait is called:

a. incomplete dominance
b. codominance
c. polygenic traits
d. multiple alleles

36. When the heterozygous phenotype is a combination or an intermediate of the two homozygous phenotypes, it is called

a. incomplete dominance
b. codominance
c. polygenic traits
d. multiple alleles

37. If the sex cell of an organism has 20 chromosomes, then the body cells will have:

a. 20 chromosomes
b. 10 chromosomes
c. 15 chromosomes
d. 40 chromosomes

1. ANS: C

2.ANS: D

3.ANS: C

4.ANS: B

5.ANS: B

6.ANS: C

7.ANS: C

8.ANS: D

9.ANS: A

10.ANS: B

11.ANS: B

12.ANS: D

13.ANS: A

14.ANS: D

15.ANS: D

16.ANS: C

17.ANS: B

18.ANS: A

19.ANS: A

20.ANS: B

21.ANS: C

22.ANS: C

23.ANS: B

24.ANS: D

25.ANS: B

26.ANS: C

27.ANS: A

28.ANS: D

29.ANS: B

30.ANS: B

B.Sc. Second Sem III

Vertebrate Zoology Paper XI

Multiple Choice Questions

2. Example of cyclostomata
a) Petromyzon b) Ascidia c) Amphioxus d) Narcine

3. Which of the following is a flying fish?
a) Shark b) Exocoetus c) chimera d) Latimeria

4. The animal having wheel organ
a) Amphioxus b) Ascidia c) Wheel animalcule d) Salpa

5. Name an aestivating fish
a) Lepidosiren b) Etroplus c) Sardine d) Mugil

6. Name the order comes under Amphibhia
a) Chiroptera b) Anura c) Chelonia d) Squamata

7. Number of cranial nerves in rabbit
a) 10 pairs b) 12 pairs c) 8 pairs d) 14 pairs

8. The first cervical vertebra in mammals
a) Axis b) Atlas c) Lumbar vertebra d) Urostyle

9. Which of the following have placoid scales?
a) Sardine b) Exocoetus c) Amia d) Shark

10. Example of fish having accessory respiratory organ
a) Mullet b) Etroplus c) Catla d) Anabas

11. Name an example of parapsida

a) Chelone b) Sphenodon c) Ichthyosaurus d) Cynognatha

12. Name a poisonous lizard
a) Jecko b) Dryophis c) Heloderma d) Varanus

13. Zebra belongs to the order
a) Sirenia b) Cetacea c) Carnivora d) Perissodactyla

14. The larva of amblystoma
a) Oikopleura b) Axolotl c) Planula d) Ascidia

15. Example of Ratitae
a) Kiwi b) Pelican c) Pigeon d) Crow

16. Name the sucker fish
a) Ophiocephalus b) Echeneis c) Mackerel d) Channa

B.Sc. Semester III
Genetics II Paper X
Multiple Choice Questions

1. According to the biological species concept, horses and donkeys are *not* considered in the same species because
   A) they never mate.
   B) they do not produce fertile offspring.
   C) they look different.
   D) they do not share a relatively recent common ancestor.

ANS: B

2. Semispecies are
   A) samples of fossils that look rather different, although we cannot be sure it they were indeed different species.
   B) populations that are partially, but not completely, reproductively isolated from each other.
   C) species that have split off from a common ancestor, and then later merged back together to form a single species.
   D) species that are on the verge of becoming extinct.

ANS: B

3. How many human species exist today?
   A) 1
   B) 3
   C) 5
   D) We do not know.

ANS: A

4. The transformation of a species over time is known as
   A) polygenesis.
   B) monogenesis.
   C) cladogenesis.
   D) anagenesis.

ANS: D

5. A chronospecies is

A) a population that will eventually become a new species, given enough time.
B) a species that, though reproductively isolated, looks exactly like another species.
C) a label used for a stage of a single species evolving over time.
D) a measure of how many new species appear in a given period of time.

ANS: C

6. The origin of a new species first requires
A) reduced gene flow.
B) increased gene flow.
C) reduced mutation rates.
D) increased mutation rates.

ANS: A

7. Someone comes up to you and states that an early species of ape could not have evolved into the first humans because both apes and humans are alive today. This person has failed to grasp the nature of
A) polygenesis.
B) monogenesis.
C) cladogenesis.
D) anagenesis.

ANS: C

8. _____ is when a species gives rise to a new and separate species.
A) Polygenesis.
B) Monogenesis.
C) Cladogenesis.
D) Anagenesis.

ANS: C

9. _____ acts to inhibit reproductive isolation.
A) Mutation
B) Natural selection
C) Genetic drift
D) Gene flow

ANS: D

10. When we place fossil specimens into different species based on their physical appearance, we are using the _____ concept.
A) biological species
B) paleospecies
C) anagenetic species
D) monospecies

ANS: B

11. Rapid speciation following the availability of new environments is known as
A) gradualism.
B) adaptive radiation.

C) species selection.
D) punctuated equilibrium.

ANS: B

12. In your study of the fossil record of early mammals, you notice a changing environment is followed by the initial appearance of a tree-climbing species, which is then followed by many later tree-climbing species. This is an example of
A) anagenesis.
B) gradualism.
C) species selection.
D) adaptive radiation.

ANS: D

13. According to the idea of gradualism, macroevolution usually involves
A) slow and gradual change.
B) most species becoming extinct in a relatively short time.
C) alternating periods of stasis (no change) and rapid change.
D) species selection.

ANS: A

14. According to the idea of punctuated equilibrium, macroevolution usually involves
A) slow and gradual change.
B) alternating periods of stasis (no change) and rapid change.
C) most species becoming extinct in a relatively short time.
D) species selection.

ANS: B

15. How common has extinction been in the fossil record?
A) Over 99 percent of all past species have become extinct.
B) Roughly 50 percent of all past species have become extinct.
C) Roughly 25 percent of all past species have become extinct.
D) Very few species have ever become extinct.

ANS: A

16. A mass extinction is
A) the extinction of small-sized species.
B) the extinction of large-sized species.
C) the simultaneous extinction of many species.
D) something that has never been seen in the fossil record.

ANS: C

17. The idea that evolution will continue in the same direction is known as orthogenesis. This idea
A) is always correct.
B) is incorrect—not all structures continue to change in the same direction.
C) is correct for all organisms except for humans.
D) is also known as natural selection.

ANS: B

18. The idea that natural selection will always select for larger organisms ("bigger is better")
    A) is totally supported by both the fossil evidence and field studies of living species.
    B) fails to consider the fact that smaller individuals often require less food and are therefore sometimes at an advantage.
    C) fails to consider the fact that smaller individuals often have an advantage in terms of disease resistance.
    D) is true for mammals and reptiles, but seldom for other groups of animals.

ANS: B

19. The more recent a trait has evolved
    A) the "better" it is in an evolutionary sense.
    B) the more quickly a species will become extinct.
    C) the more likely the effect of genetic drift.
    D) has no bearing on its worth compared with other traits that are older.

ANS: D

20. Natural selection
    A) always works.
    B) always produces perfect structures.
    C) always leads to an increase in size.
    D) None of these.

ANS: D

21. Groups within a species that are physically distinct but are still capable of interbreeding are often classified as
    A) subspecies.
    B) semispecies.
    C) quasispecies.
    D) pseudospecies.

ANS: A

22. Homology refers to
    A) similarity due to descent from a common ancestor.
    B) the independent development of similar structures in unrelated species.
    C) two species having the same number of chromosomes.
    D) anatomical structures seen in humans but not found in other primate species.

ANS: A

23. The independent evolution of similar traits in two species is known as
    A) homology.
    B) homoplasy.
    C) acquired characteristics (Lamarck's hypothesis).
    D) cladogenesis.

ANS: B

24. Parallel evolution and convergent evolution are examples of

A) speciation.
B) homology.
C) homoplasy.
D) punctuated equilibrium.

ANS: C

25. Parallel evolution is the independent evolution of the same trait in
A) closely related species.
B) distantly related species.
C) males and females within the same species.
D) mammalian and reptilian species.

ANS: A

26. Convergent evolution is the independent evolution of the same trait in
A) closely related species.
B) distantly related species.
C) males and females within the same species.
D) mammalian and reptilian species.

ANS: B

27. The limbs of humans and many other vertebrates consist of an upper limb bone and two lower limb bones. This similarity among many vertebrates is an example of
A) convergent evolution.
B) parallel evolution.
C) homoplasy.
D) homology.

ANS: D

28. Both birds and insects have wings that they use to fly. Here, wings are an example of
A) homology.
B) homoplasy.
C) adaptive radiation.
D) neutral traits.

ANS: B

29. An example of a primitive trait in modern humans is
A) five digits on hands and feet.
B) a large brain.
C) small canine teeth.
D) tool use.

ANS: A

30. An example of a derived trait in humans (compared to apes) is
A) forward facing eyes.
B) five digits on hands and feet.
C) the number of molar teeth.
D) upright walking.

ANS: D

31. A _____ trait is one that has been inherited from an earlier ancestor.
    A) neutral
    B) homologous
    C) primitive
    D) derived

ANS: C

32. A _____ trait is one that has changed from an ancestral state.
    A) neutral
    B) homologous
    C) primitive
    D) derived

ANS: D

33. Neither apes nor humans have a tail, whereas other primates have tails. Compared with apes, the lack of a tail in human beings is a _____ trait since they both inherited it from a common ancestor.
    A) neutral
    B) homologous
    C) primitive
    D) derived

ANS: C

34. _____ is used to determine what traits are primitive and what traits are derived in an analysis of closely related species.
    A) A molecular clock
    B) An outgroup
    C) A phenetic approach
    D) An adaptive radiation model

ANS: B

35. Imagine you are studying the presence and absence of a hairy nose in a hypothetical group of organisms. If your outgroup shows a hairy nose, this means that a hairy nose is a _____ trait.
    A) primitive
    B) derived.

ANS: A

36. If you classify organisms based on all homologous traits, you are using a(n) _____ approach.
    A) population genetic
    B) homologous
    C) evolutionary systematics
    D) cladistic

ANS: C

37. If you classify organisms based on evolutionary relationships, you are using a(n) _____ approach.
    A) population genetic
    B) homologous
    C) evolutionary systematics
    D) cladistic

ANS: D

38. Cladistics is a method of classification that considers
    A) traits that show homology and homoplasy.
    B) all homologous traits, both primitive and derived.
    C) only primitive homologous traits.
    D) only derived homologous traits.

ANS: D

39. According to the method of cladistics, two species are placed in the same group if they share _____ traits.
    A) any homologous
    B) primitive
    C) derived
    D) polymorphic

ANS: C

40. If parallel evolution is common, the evolutionary systematics approach to classification will
    A) make species seem more distantly related than they really are.
    B) make species seem more closely related than they really are.
    C) have no effect on judging evolutionary relationships.
    D) make it seem as though there were more species than actually existed.

ANS: B

41. A population is a group of individuals of a species which:
    A) interbreed.
    B) reside in the same area.
    C) inhabit the same space at the same time.
    D) only b and c are true
    E) a, b, and c are true
    Ans: E

42. The sum total of all alleles carried in all members of a population is called its:
    A) gene pool.
    B) genome.
    C) ploidy.
    D) polygenic sum.
    E) polymorphism.
    Ans: A

43. Microevolution is defined as:
A) a process that includes new species formation.
B) changes in the frequency of alleles within a population.
C) evolution of microorganisms.
D) interactions between species.
E) all of the above
Ans: B

44. Macroevolution is defined as:
A) evolution that occurs over geologic time.
B) process by which new species emerge from existing species.
C) the consequence of extended periods of microevolution.
D) the origin of new species by mutation and natural selection.
E) all of the above
Ans: E

45. Population genetics provides answers for all of the following questions except:
A) what is the frequency of genetic disease in a population?
B) what fraction of the phenotypic variation in a trait is the result of genetic variation?
C) what alleles are most likely to mutate?
D) given certain quantifiable variables, how long is a disease likely to persist?
E) how rapidly can a disease gain a foothold in a population?
Ans: C

46. Which of the following is not one of the assumptions of the Hardy-Weinberg law ?
A) The population is very large.
B) There is non-random mating within the population.
C) Mutations in the alleles do not occur.
D) No migration occurs into or out of the population.
E) The ability of all genotypes for survival and reproduction is the same.
Ans: B

47. Hardy-Weinberg equilibrium in populations is defined as conditions which produce:
A) only heterozygotes.
B) many lethal alleles.
C) genetic drift.
D) constant allele frequencies which do not change from generation to generation.
E) all of the above
Ans: D

48. The heterozygote genotype frequency term for a gene with two alternate alleles A (frequency p) and a (frequency q) in the Hardy-Weinberg equation is:
A) p^2.
B) q^2.
C) 2pq.
D) $(p+q)^2$.
E) p+q.
Ans: C

49. If in a population of 1 million people, 100 albinos (homozygous recessives, aa) were found, how many normal (homozygous dominants, AA) individuals will be found in the next generation under equilibrium conditions?
A) 19,800
B) 100,000
C) 980,010
D) 999,900
E) 100
Ans: C

50. In humans, brachydactyly is a dominant condition. Six thousand four hundred people in a population of 10,000 show the disease (1,600 are BB, 4,800 are Bb) and 3,600 are normal phenotypes (bb). The frequency of the b allele is:
A) 0.6.
B) 0.4.
C) 0.36.
D) 0.48.
E) 0.16.
Ans: A

51. The frequency of the Hemoglobin A allele is 0.9. The heterozygote with the recessive allele, s, show resistance to the malarial parasite. What is the frequency of the heterozygote for the pair As?
A) 0.81
B) 0.1
C) 0.01
D) 0.18
E) 0.09
Ans: D

52. The genotypic frequency of inheriting autosomal recessive condition, phenylketonuria, is 1 in 3,600 people. The frequency of the normal allele is:
A) 0.0167.
B) 0.9833.
C) 0.0328.
D) 0.00286.
E) 3,599.
Ans: B

53. Which of the following is not generally true about conditions of natural populations?
A) Size is not always very large.
B) Individuals do not mate at random.
C) New mutations do occur.
D) There is migration in and out of the population.
E) Different genotypes have the same fitness.
Ans: E

54. Fitness is described as:
A) an individual's ability to survive to adulthood.
B) an individual's ability to reproduce.
C) the effect of the particular genotype which cannot always be predicted.
D) a, b, and c are true.
E) only a, and b are true.
Ans: D

55. Changes in allele frequency in conditions of either natural or artificial selection depends on:
A) allele frequencies themselves.
B) relative fitness related to viability.
C) reproductive abilities of the different phenotypes.
D) a, and b only.
E) a, b, and c.
Ans: D

56. Many human recessive genetic diseases are maintained despite continuing selection against them because:
A) heterozygotes have a higher fitness than either homozygote.
B) the recessive alleles mutate to dominant type.
C) there is no inheritance for the recessive allele.
D) the dominant allele frequency remain the same over generations.
E) none of the above.
Ans: A

57. A disease which has been studied in great detail for heterozygote superiority is:
A) brachydactyly.
B) sickle cell disease.
C) insulin-dependent diabetes.
D) albinism.
E) tuberculosis.
Ans: B

58. If African populations have a relative fitness of the wild type genotype of 0.8, and that of the heterozygote of 1.0, then the relative advantage in fitness of the heterozygotes would be:
A) 0.8.
B) 0.08.
C) 0.16.
D) 0.28.
E) 1.25.
Ans: E

59. Mutations arise from:
A) DNA damage due to environmental agents.
B) from errors in replication.
C) from errors in transmission of genetic information in cell division.
D) only a and b.
E) a, b, and c.
Ans: E

60. Frequency of disease alleles is influenced by:
A) heterozygous advantage.
B) mutation.
C) time of onset of disease.
D) selection.
E) all of the above.
Ans: E

61. Unpredictable, chance fluctuation in allele frequency that have a neutral effect on fitness is called:
A) founder effect.
B) selection.
C) genetic drift.
D) mutation.
E) inbreeding.
Ans: C

62. The process in which rare alleles increase in frequency in a new population is known as:
A) gene flow.
B) genetic drift.
C) founder effect.
D) inbreeding.
E) selection.
Ans: C

63. Diseases persist because:
A) changes in allele frequency tend toward evolutionary equilibrium.
B) mutation balances selection.
C) the alleles become dominant.
D) only a and b.
E) a, b, and c.
Ans: D

64. The factors contributing to the antibiotic resistance of bacterial pathogens are:
A) patient noncompliance with drug treatments.
B) strong selection imposed by antibiotic increases the rate of evolution in each generation.
C) plasmids provide a means for the genetic exchange of resistance genes.
D) only b and c.
E) a, b and c.
Ans: E

65. Development of Insulin-dependent diabetes is associated with how many separate regions of the human genome?
A) 12
B) 10
C) 8
D) 6
E) 4
Ans: A

66. Multifactorial traits:
A) are affected by both genetic and environmental factors.
B) are continuous.
C) vary over a continuous range of measurements.
D) are affected by environmental factors such as penetrance and expressivity.
E) all of the above.
Ans: E

67. The total phenotype variance (V_P) is:
A) the sum of genetic variance (V_G) and environmental variance (V_E).
B) the difference between V_G and V_E.
C) not dependent on V_G.
D) not dependent on V_E.
E) always constant.
Ans: A

68. Heritability is defined as:
A) V_G.
B) V_P.
C) V_E.
D) V_G/V_P.
E) V_P/V_G.
Ans: D

69. The total genetic relatedness of two siblings is:
A) 2.
B) 1.
C) 0.5.
D) 0.2.
E) none of the above.
Ans: C

70. Which of the following is not true about monozygotic twins.
A) They share all alleles at all loci.
B) They have a genetic relatedness of 0.5.
C) They have a genetic relatedness of 1.
D) They come from the joining of a single egg with a single sperm cell.
E) They are the result of a split of the zygote after fertilization.
Ans: B

71. Recent heritability studies on twins show that there is a genetic component to:
A) memory.
B) extroversion.
C) verbal reasoning.
D) a, b, and c.
E) only a and b.
Ans: D

73. The response to selection, R, is equal to:
A) the heritability (h^2) of a trait.
B) the strength (S) of selection.
C) the difference between h^2 and S.
D) S/h^2.
E) h^2S.
Ans: E

74. A number of interacting genes produce quantitative inheritance. The transmission of these genes can be seen in the phenotypical pattern of:
A) discontinuous distribution of discrete phenotypes.
B) continuous variation in phenotypic expression.
C) strict dominance and recessiveness.
D) all of the above.
E) only a and b.
Ans: B

75. A cross between a tall and a short pea plant produced intermediate height in the F1 generation. When the F1s were crossed plants of the original parental heights and plants with a range of heights in between the extremes were produced. The mode of inheritance is described as:
A) multifactorial.
B) independent assortment.
C) incomplete dominance.
D) codominance.
E) segregation.
Ans: A

76. Multifactorial inheritance is observed in phenotypes which show typically:
A) only one discrete type.
B) two extremes.
C) a bell shaped distribution.
D) a higher mutation rate.
E) all of the above.
Ans: C

77. Continuous traits are:
A) due to sex-linked genes only.
B) due to autosomal genes only.
C) qualitative in nature.
D) quantifiable in measurements.
E) result of test-crosses only.
Ans: D

78. In addition to genetic factors, environmental factors influence the inheritance of:
A) metabolic diseases.
B) recessive diseases.
C) dominant diseases.
D) sex-linked diseases.
E) polygenic traits.
Ans: E

79. Brown insects living in a dark background survived in a ratio of 90/120, while the same insects in a lighter background survived in a ratio of 30/120. The ratio of relative fitness of the insects in dark to lighter background is:
A) 1 : 0.333.
B) 0.75 : 0.25.
C) 90 : 120.
D) 3 : 1.
E) none of the above.
Ans: A

80. If the relative fitness of genotypes MM, MN, NN are 0.8, 1.0, and 0.2 respectively, the expected equilibrium frequency of N is:
A) 0.8.
B) 1.0.
C) 0.2.
D) 1.25.
E) 4.0.
Ans: C

81. Twins made from two individual zygotes (dizygotic twins):
A) are related genetically as the monozygotic twins.
B) share 0% genetic similarities.
C) are similar in 100% of genetic sequences.
D) are related genetically as non-twin siblings.
E) are similar to parents.
Ans: D

82. An increase in fitness is described as:
A) migrating to a new environment.
B) successful adaptation.
C) being successful in producing many offspring.
D) exhibiting new traits.
E) mutating to a dominant trait.
Ans: B

83. The frequencies of ABO blood groups in a certain population are: A=0.22, B=0.44, AB=0.18, and O=0.16. The frequency of the O allele in the population is:
A) 0.469.
B) 0.663.
C) 0.424.
D) 1.0.
E) 0.4.
Ans: E

84. Under special circumstances, migration does not change allele frequencies. If the allele frequencies of a dominant and recessive allele are both 0.5, then migration of which of the following will not change the frequencies of the alleles?
A) homozygous recessive individuals
B) haploid individuals
C) diploid individuals
D) heterozygous individuals
E) homozygous dominant individuals
Ans: D

Department of Zoology
B.Sc. IV Semester
ANIMAL PHYSIOLOGY (Paper No XIII)

1. One of the following inhibits the secretion of gastric juices
(a) Enterogastrone (b) Secretin (c)C C K (d) Gastrin

2. Vit. D is synthesised in presence of sunlight in (a) Skin (b) Bone(c) Liver (d) Spleen

3. Antipellagra factor is
(a) B_1 (b) B_2 (c) B_5 (d) B_{12}

4. The sphincter which separates oesophagus from stomach is called:
(a) Pyloric sphinctor (b) Cardiac sphinctor
(c) Sphinctor of Oddi (d) Anat sphincter

5. Which are enzymes of gastric gland
(a) Trypsin and rennin (b) Pepsin and rennin
(c) Lipase and trypsin
(d) Vessopressin and lipase

6. Yeast is source of
(a) Vitamin A (b) Vitamin D
(c) Vitamin C (d) Riboflavin

7. Scurvy disease is produced in the deficiency of :
(a) Vitamin C (b) Vitamin E
(c) Vitamin K (d) Vitamin A

8. Mode of digestion in 'Hydra' is
(a) Intracellular (b) Extracellular
(c) Both these (d) None

9. Which combination is incorrect
(a)Niacin-Pellagra (b)Thiamin-Beriberi
(c) Vitamin K-Sterility
(d) Vitamin D-Rickets

10. Which enzyme digests plant protein
(a) Pepsin (b) Erepsin

(c) Renin (d) All these

11. Secretion of bile is promoted by
(a) CCK (b) Secretin
(c) Insulin (d) Gastrin
12. Which of the following can't digest cellulose
(a) Rabbit (b) Cow
(c) Tiger (d) She goat

13. Brunner's glands are present in
(a) Stomach (b) Liver
(c) Small intestine (d) Large intestine

14. Trypsin is related with the digestion of
(a) Carbohydrate (b) Proteins
(c) Fats (d) None of these

15. Which of the following hormone increase gas tric secretion
(a) Gastrin (b) CCK
(c) Enterogastrone (d) None

16. The enzyme for starch digestion
(a) Maltase (b) Invertase
(c) Lipase (d) Amylase

17. Digestion of food in Leucosolenia takes place :
(a) In the spongocoel (b) In the amoebocyte
(c) In the choanocyte
(d) First in choanocyte and then in amoebocyte

18. Which of the following is digested first
(a) Water (b) Bear
(c) Carbohydrate (d) Protein
19. The unit of absorption in the intestine is
(a) Villus (b) Alveoli
(c) Osteon (d) None

20. Percentage of lactose sugar is highest in the milk of
(a) Cow (b) Goat
(c) Human female (d) All these

21. Inhibition of gastric secretion is brought about
(a)Enterogastrone (b)Cholecystokinin
(c) Both (d) None

22. Light brown colour of faeces is due to :
(a) Bile pigments (b) Bile salts
(e) Bacteria (d) None

23. Glucostate state theory is related with :
(a) Diabetes (b) Appetite

(c) Thirst (d) None of these

24. Movement of alimentary canal is known as :
(a) Systole (b) Peristalsis
(c) Diastole (d) Metachromal

25. Calciferol is
(a) Vit. A (b) Vit. B
(c) Vit. C (d) Vit. D

26. Which of the following vitamin does not have coenzyme activity
(a) Folic Acid (b) Riboflavin
(c) Biotin
(d) Tocopherol (Vitamin E)

27. In man cholecystokinin stimulate the tion of :
(a) Stomach (b) Salivary gland
(c) Gallbladder (d)Brunner's gland

28. Where bile is produced (C.P.M.T. 92)
(a) In gall bladder (b) In blood
(c) In liver (d) In spleen

29. Main Part of stomach is
(a) Cardiac stomach (b) Pyloric stomach
(c)Fundic stomach (d) None

30. Over dilation of stomach results
(a) Rugae formation (b) Belching (Burbing)
(c)Irritation (d) None

31. Cholecystostatis refer to
(a) Stone in Gall bladder
(b) Jaundice
(c)Apendix Pain (d) None

32. Achalasia is related with
(a) Stomach (b) Oesophagus
(c) Intestine (d) None

33. Brunner's gland Produce
(a) Mucous (b) Intestinal juice
(c)Both (d) None

34. Oxidative product of bile pigment which is responsible for the colouration of faeces is :
(a) Bilirubin (b) Biliverdin
(c) Stercobili (d) None

35. In which of the following sphincter of Oddi is found:
(a) Pancreatic duct (b) Bile duct(c) Both (d) None

36. Brunner's gland also known as
(a) Mucous glands (b) Duodenal glands
(c)Both (d) None

37. Which one of the following is not – enzymes
(a) Maltase (b) Sucrase
(c) Amylase (d) Urease

38. Which of the following leaves basic residues in the body during metabolism
(a) Oils and fat (b) Citrus fruit juices
(c) Meat (d) Egg

39. Crypts of leiberkuhn is
(a) gastric gland (b) Intestinal gland
(c) No gland (d) None

40. In which of the following vitamin A is absent :
(a)Yeast (b) Carrots
(c) Fish liver oil (d) Egg Yolk

41. Brunner's glands are found in
(a) Duodenum only (b) Ileum only
(c) Both (d) None.

42. Crypts of leiberkuhns are found in
(a) Duodenum (b) Ileum
(c) Both (d) None

43. Tearing teeth are
(a) Incisors (b) Premolars
(c)Molars (d) Canines

44. Lining of intestine of man is
(a) Ciliated (b) Keratinized
(c) Brush border (d) All the above

45. Deficiency of Vit. A_2 results into :
(a) Scurvy (b) Rickets
(c)Beri-beri (d) Xerophthalmia

46. Thiamin is not found in :
(a) Yeast (b) Cereals
(c) Green leaves (d) Milk

47. Night blindness is due to deficiency of vitamin:
(a) A_1 (b) A_2
(c) D (d)B complex
48. Deficiency of thiaminc causes :
(a) Beriberi (b) Chelosis
(c) Anemia (d) Roup

49. Vitamin K is found in:
(a) Carrots (b) Citrus fruit
(c) Green leaves (d) None

50. Riboflavin is absent in which of the following:
(a) Yeast (b) Milk
(c) Wheat (d) Liver

51. Deficiency of vitamin C causes :
(a) Chelosis (b) Scurvy
(c) Pellagra (d) Anemia

52. Deficiency of which of the following causes chelosis :
(a) Pyridoxine (b) Folic Acid
(c) Niacin (d) Riboflavin

53. Sterlity in male rats and fowls is due to :
(a) vit. K (b) vit. c
(c) Vit. E (d) Vit. A

54. intestinal juice succus entericus is produced by
(a) Crypts of leiberkuhn
(b) Brunner's gland
(c) Both (d) None

55. Brunner's glands Present in
(a) Mucosa of gut wall
(b) Submucosa gut wall
(c) Both (d) None
.
56. In frog digestion takes place mostly in (C.B.S.E. 93)
(a) Duodenum (b) Rectum
(c) Small intestine (d) Stomach

57. The presence of vitamin K is required for the (C.B.S.E. 93)
(a) Conversion of prothrombin into thrombin
(b) Conversion of fibrinogen into fibrin
(c) Synthesis of prothrombin
(d) Synthesis of thromboplastin

58. Acidic pulp in stomach is called
(a) Chyle (b) Chyme
(c) Bolus (d) None

59. Alkaline pulp in intestine is called (C.P.M.T.87)
(a) Chyle (b) Chyme
(c) Chylomicron (d) None

60. Emulsification is done by (C.B.S.E. 90)
(a) Bile salts (b) Bile pigments
(c) Lecithin (d) None

61. Opening of oesophagus is
(a) Glottis (b) Gullet
(c) Larynx (d) Pharynx

62. Common passage for food and air is (M.P. 95)
(a) Larynx (b) Pharynx
(c)Glottis (d) Gullet

63. bne of the following is not a part of gut & digestive system
(a) Spleen (b) Stomach
(c) Liver (d) Pancreas

64. Caecum in frog is
(a) Well developed (b) Less developed
(c) Absent (d) None.

65. Vermiform appendix is functional in
(a) Frog (b) Man
(e) Rabbit (d) All

66. In wall of Gut, muscles are
(a) Smooth (b) Striped
(c) Both (d) None

67. Gut peristaltis is
(a) Involuntry (b) Voluntry
(c) Conditioned reflex (d) None

68. Which one is the matching pair characterized by pigmented skin of hands, legs and irritability (C.B.S.E.93)
(a) Iodine-Goitre
(b) Nicotinamide-Pellagra
(c) Thiamine-Beri-beri
(d) Protein-Kwashiorkor

69. Fluorine is-an important trace element for the growth of :
(a) Hair (b) Teeth
(c) Mucsles (d) Bones

70. Clewing of food in mouth is for:
(a) Tasting
(b) Making the food soluble
(c)Increasing the surface area of food for activity of enzymes
(d) None

71. Blood capillary network of villi absorb
(a) Water (b) Salts
(c) Glucose (d) All

72. Fatty acid & glycerol is absorbed by

(e) Blood capillaries (b) Lacteals
(c) Both (d) None

73. Ptyalin is found in
(a) Secretin (b) Saliva
(c) Satity centre (d) All

74. Ptyalin is also known as
(a) Salt solution (b) Salivary amylase
(c) Sugar solution (d) None

75. The enzyme which can act in Acidic and basic media both
(a) Lipase (b) Trypsin
(c) Pepsin (d) Ptyalin

76. Gastric glands are found in
(a) Mucosa (b) Submucosa
(c) Serosa (d) None

77. The fundamental requirement of food in body is for:
(a) Growth (b) Hunger
(d) Repair (c) Metabolism

78. Rabbit feeds on :
(a) Flesh and bones (b) Insects and worms
(c) Leaves and seeds (d) None

79. Carbohydrates of all types are converted into :
(a) Glucose (b) Glycerol
(c)Amino acid (d) None

80. HCl in stomach act as
(a) Antiseptic (b) Preservative
(c) Make the media acidic
(d) All the above

81. CCK is secreted in
(a) Lumen of intestine (b) Pits of intestine
(c)Blood of vessels of intestine
(d) None

82. Emulsified fat is acted upon by :
(a) Lipase (b) Amylase
(c) Rennin (d) Pepsin

83. Pepsin acts on :
(a) Protein (b) Lipid
(c) Carbohydrate (d) All these

84. Which one is insoluble in water:

(a) Inositol (b) Riboflavin
(c) Niacin (d) Calciferol

85. Vitamin which is insoluble in fat:
(a) Ascorbic acid (b) Calciferol
(c) Both (d)None.

86. One of the following is hormone
(a)Trypsinogen (b) Secretin
(c) Trypsin (d) All

87. Enterokinase is
(a) Enzyme (b) Hormone
(c) Vitamin (d) None

88. Lacteals are associated with absorption of
(a) Proteins (b) Carbohydrates
(c) Fat (d) None

89. Cellulose digestion in rabbit takes place in
(a) Vermiform Appendix
(b) Caecum
(c) Both (d) None

90. Hunger centre is in
(a) Medulla oblongata (b) Hypothalamus
(c) Pons varoli (d) None

9I. Satity centre is in
(a) Cerebrum (b) Hypothalamus
(c) Medulla oblongata (d) None

92. Protein digestion start from
(a) Buccal cavity (b) Stomach
(c) Intestine (d) None

93. Carbohydrate digestion in man starts from
(a) Buccal cavity (b) Oesophagus
(c) Stomach (d) Intestine

94. Fat digestion takes place in
(a) Buccal cavity (b) Stomach
(c) Intestine (d) All

95. Ascorbic acid is :
(a) Vit. A (b) vit C
(c) Vit. D (d) None

96. Proteins are finally converted into:

(a) Glucose (b) Amino acid
(c) Glycerol (d) Fatty acid

97. Which of the following converts inactive pepsinogen into active pepsin :
(a) HCl (b) Mucous
(c) Hormone (d) Enterokinase

98. Which of the following converts peptones, proteoses and polypeptides into amino acids :
(a) Amylase (b) Trypsin
(c) Lipase (d) Rennin

99. Trypsinogen is converted into active Trypsin by :
(a) Mucus (b) Bile juice
(c) Enterokinase (d) Hormone

100. Which of the following is absent in pancreatic juice:
(a)Trypsin (b) Amylopsin
(c) pepsin (d) Lipase

101. Which of the following is a nitrogenous polysaccharide :
(a) Starch (b) Cellulose
(c) Chitin (d) Glycogen
102. Pepsin and trypsin both act on ploteins in :
(a) Neutral condition (b) Acidic condition
(c) Alkaline condition (d) In different media
103. Chronic alcoholics are always short of
(a) Vit. A (b) Vit. E
(c) Vit. C (d) Vit. B-complex
104. Element needed in largest amount man is
(a) Iodine (b)Iron
(c) Megnisium (d) Calcium
I05. Richest source of niacin is
(a) Milk (b) yeast
(c) Egg (d) Tomatoes
106. Which of the following belongs to the class of pepsin and trypsin (C.P.M.T.84)
(a) Rennin (b) protein
(c) Thyroxin (d) Secretin
107. Some proteolytic enzymes are (C.P.M.T. 77)
(a) Trypsin, peptidase, pepsin
(b) Amylopsin, steapsin, ptyalin
(c) Amylase, lipase, zymase
(d) Urease, zymase, dehydrogenase
108. Digestion of carbohydrate is affected by (D.P.M.T. 82)
(a) Erepsin (b) Steapsin
(c) Pepsin (d) Amylopsin
109. Digestion of starch takes place in (D.P.M.T. 82)
(a) stomach and duodenum
(b) Buccal cavity duodenum
(c) Buccal cavity and oesophagus
(d) Duodenum only
110. Which one is best source of vit. A (N.C.E.R.T.75)

(a)Apples (b) Carrots
(c) Honey (d) peanuts
111. Below freezing point an enzyme is
(a) Inactivated (b) Activated
(c) Destroyed (d) Unaffected
112. Digestion of protein-is necessary because
(a)It not absorbed as such
(b)Proteins are large molecules.
(c) Proteins have complex structure.
(d) Proteins are made of amino acids

113. Rickets in children and osteomalacia in adult in caused by deficiency of
(a) vit. A (b) vit B
(c) vit. C (d) vit D
114. All enzymes chemically speaking are
(a) Lipids (b) Carbohydrate
(c) proteins (d) All
115. Deficiency of calcium causes
(a) Scurvy (b) Rickets
(c) Gigantism (d) Addison's disease
116. Anhydro bonds of protein are called
(a) Glycosidic (b) Peptide
(c) Easter (d) Diester.
117. Enzyme responsible for the digestion of starch in food of main is Present in
(e) Salivary and gastric secretion.
(b) Salivary and pancreatic secretion
(c) Gastric and pancreatic secretion
(d) Gastric and duodenal secretion
118. Most important centre of the formation of lymph is :
(a) Liver (b) Pancreas
(c) Spleen (d) Kidney
119. HCI Production
(a) Activate pepsinogen (b) Prorenin
(c) Both (d) None
120. Rennin is also known as
(a) Chymosin (b) Zymosin
(c) Both (d) None
121. Crypts of leiberkuhn are
(a) Simple tubular gland
(b) Alveolar gland
(c) Coiled tubular gland
(d) None
122. Bile Pigments are
(a) Bili rubin (b) Bili verdin
(c) Taurocholate (d) All
123. Yellow colour of bile is due to
(a) Bili verdin (b) Bili rubin
(c) Bile salts (d) None
124. Invertase enzyme acts upon
(a) Proteins (b) Maltose
(c) Fructose (d) Sucrose

125. One of the following Vit. destroy on boiling
(a) Vit. A (b) vit. B
(c) Vit. C (d) vit. D
126. To get enough carbohydrate one should eat
(a) Meat (b) Rice
(c) Carrots (d) Ground nuts
127. kupffer's cells in the liver are
(a) Fat cells (b) Phagocytic cells
(c) Blood cells (d) Regenerative cells
128. The centre of appetite and hunger are located in:
(a) Cerebrum (b) Cerebellum
(c) Medula oblongata
(d) None of these
129. The site of absorption of alcohol in man is
(a) Oesophagus (b) Intestine
(c) Large intestine (d) Stomach
130. Which among the following is a vitamin for healing
(a) vit. D (b) Vit. C
(c) Vit. A (d) Vit. M
131. Digestive enzymes are
(a) oxidative (b) Hydrolytic
(c) Synthetic (d) None of these
132. By consumption of milk and milk products some human beings develop intestinal gas and diarrhoea due to absence of which enzyme
(a) Lactase (b) Galactase
(c) Protease (d) Rennin
133. Non protein part of enzyme is called
(a) Iso-enzyme (b) Holo-enzyme
(c) Apo-enzyme (d)Prosthatic group
134. which of the following is virucidal in function
(a) vit.A (b) vit.C
(c) vit. D (d) vit. E
135. Beauty vitamin is
(a) Vit. K (b) Vit. A
(c) Vit. C (d) vit. E
136. Black tongue disease of dogs is associated with the report of
(a) Pasteur (b) Smith
(c) Goldberger (d) Eijkman
137. Idea of deficiency disease was put forward by
(a)funk (b) Hopkin
(c) Pasteur (d) None
138. Drugs are detoxified in
(a) Heart (b) Stomach
(c) Liver (d) Spleen
139. Bile pigment is
(a)Secretory (b) Excretory
(c) Digestive (d) All these
l40,Zymogen cells are also called
(a) Mast cells (b) Oxyntic cells
(c) Chief cells (d) None of these
l4l. Cardiac glands are found in

(a) Pericardium (b) Myocardium
(c) Intestine (d) Stomach
142. Jaundice is due to
(a) Failure of kidney (b) Failure of liver
(c) Bacterial disease (d) A disease of blood
I43. Presence of stones in gall bladder cause
(a) Failure of kidney (b) Dysentry
(c) Obstructive jaundice
(d) Anaemia
144. Substance which increase the activity of certain enzymes called
(a) Pro-enzyme (b) Iso-enzymes
(d) Co-enzymes (d) Catalysis
145. Which salivary gland is absent in man
(a) Sublingual glands
(b) Sub-maxillary glands
(c) Infra-orbital glands
(d) Parotid glands
146. Hyper keratosis is due to
(a) Hypervitaminosis of vitamin A
(b) Hypervitaminosis of vitamin C
(c) Hypervitaminosis of vitamin K
(d) Hypervitaminosis of vitamin B_{12}
147. In order to obtain maximum energy rabbit has developed
(a)Rumination habit (b) Coprophagic habit
(c) Vegetarian habit (d) Chewing habit
148. Cow milk is yellow in color due to presence of
(a) Xanthophyll (b) Riboflavin
(c) Vital dye (d) None
149. One of the following works in neutral media
(a) Trypsin (b) Lipase
(c) Ptyalin (d) All
150. Pancreatic lipase is activated by
(a) HCl (b) CCK
(c) Bite (d) All
151. Peneath cells are found in :
(a) Intestinal gland (b) Gastric gland
(c) Cardiac gland (d) All the above
152. Recent anticancer Vit.
(a) Vit. Q (b) Vit. B_{12}
(c) Vit. B_5 (d) Vit. B_{17}
153. Vitamin name was used by
(a) Goldsmith (b) Funk
(c) Hopkin (d) None
154. Destruction of which of the following enzyme causes cyanide poisoning
(a) Zymogen
(b) Cytochrome enzyme
(c) Urease (d) None of these
155. Lipogenesis in body starts when
(a) Glucose combines with glycerol
(b) Glycogen depots of muscle and liver are occupied
(c) Glycogen depots of muscle and liver are scanty

(d) Blood sugar level is high
156. Which is not a vitamin
(a) Ascorbic acid (b) Nicotinic acid
(c) Folic acid (d) Lactic acid
157. Flora present in human intestine is capable of synthesizing
(a) Vit. K (b) vit. C
(c) Vit. A (d) vit. B
158. Vitamin which is excreted in urine
(a) Vit. B_{12} (b) Vit. C
(c) Vit. D (d) Vit. A
159. In rabbit food does not normally enter into the wind pipe because during feeding
(a) Epiglottis and tongue cover the glottis
(b) Nodule called cartilage of santorini plug the larynx
(c) The cartilage called arytenoid lie between larynx and glottis
(d) The circular muscles at the front of trachea contract and close its opening
160. Frog is not able to digest cellulose but the rabbit can do so as rabbit has
(a) Duodenum where cellulose are digested
(b) Stomach which contain certain cellulose digesting bacteria
(c) Caecum where cellulose digested
(d) None of the above
161. Enzyme arginase is found in
(a) Mouth cavity (b) Stomach
(c) Intestine (d) Liver
162. Fundic part of stomach is
(a) Present in rabbit but absent in frog
(b) Absent in rabbit but present in frog
(c) Absent in both
(d) Present in both
163. Diastema is associated with
(a) Presence of certain teeth
(b) Organ of corti (c) Retinal cells
(d) Absence of certain teeth
164. Which one is not enzyme
(a) Trypsin (b) Lipase
(c) Enterokinase (d) Enterocrinin
165. Acid secretion of stomach is stimulated by
(a) Gastrin (b) Histamine
(c) Vagus nerve (d) All the above
166. Tip of the tongue is associated with
(a) sweet (b) Salt
(c) sour (d) Bitter
167. Liver is
(a) Lymph gland (b) Digestive gland
(c) Endocrine gland (d) None
168. In man, gall bladder is located at
(a) Left central lobe of liver
(b) Right central lobe of liver
(c) Caudal lobe of liver
(d) Spegelian lobe of liver
169. In man total length of alimentary canal is
(a) 18 feet (b) 16 feet

(c) 22 feet (d) 3 feet
170. Deficiency of vitamin K
(a) Impotancy
(b) Slow clotting of blood
(c) Scurvy (d) Pellagra
171. Night blindness is caused due to deficiency of
(a) Vitamin A (b) Vitamin C
(c) Vitamin B (d) Vitamin D
172. Deficiency of vitamin E causes
(a) Beri-beri (b) Scurvy
(c) Reduced reproductive capacity
(d) Impotancy
173. Vitamin theory was proposed by
(a) Hepkins and Funk
(b) Holly and Khorana
(c) Watson and Crick
(d) Jensen and Meischer
174. The crypts of Lieberkuhn are present in the
(a) Pancrease (b) Oesophagus
(c) Between the villi of the small intestine
(d) Large intestine
175. HCI is Produced by
(a) Oxyntic cells (b) Chief cells
(c) Argentophilic cells
{d) None of the above
176. Stenson's duct is associated with
(a) Parotid gland (b) Paratoid gland
(c) Cardiac gland (d) All the above
I77. Wharton's duct is associated with
(a) Sub lingual gland (b) Infra orbital gland
(c) Sub maxillary gland
(d) None
178. Largest salivary gland is
(a) Parotid (b) Infra orbital
(c) Sub maxillary (d) None
179. Smallest salivary gland is
(a) Sub maxillary (b) Sub mardibular
(c) Infra orbital (d) Sub-lingual
180. Rabbit liver is made of
(a) 4 lobes (b) 6lobes
(c) 5 lobes (d) 7 lobes
181. An animal having food deficiency in any respect is
(a) Starvation (b) Under nourishment
(c) Malnourishment
(d) Patient of kwashiorkor
182. Hepatic cells of rabbit are in the form of
(a) Rounded hepatocytes
(b) Irregular hepatocytes
(c) Discoidal hepatocytes
(d) Polyhedral radiating hepatocytes
183. Earliest known vitamin is

(a) Vit. B (b)Vit. C
(c) Vit. D (d) Vit. A
184. Best source of casein
(a) Milk (b) Meat
(c) Egg (d) All
185. Surgical removal of Gall bladder in man would lead to
(a) lmpairment of digestion of fat
(b) Jaundice
(c) Increased acidity in intestine
{d) None of the above
186. Some animals eat their own faeces to digest cellulose again. This is known as
(a) Reingestion (b) Coprophagy
(c) Both (d) None
187. Too much use of one of the following should be avoided during summer
(a) Carbohydrates (b) Proteins
(c) Fats (d) None
188. Dilated part at the junction of Ileum and Colon in rabbit is
(a) Sacculus rotendus (b) Fenestra ovalis
(c) Fenestra rotendus (d) None
189. Rickets and kwashiorkor are
(a) Deficiency disease
(b) Hereditary disease
(c) Infectious disease
(d) Communicable disease
190. Vitamin A is responsible for
(a) Rhodopsin (b) Night blindness
(c) Pellagra (d) Cirrhosis
191. The beri-beri, a disease caused by the deficiency of vitamin B_1 (Thiamine). It was discovered by
(a) Funk (b) G.E. Foxon
(c) Eijkmann (d) Stanley
192. Which of the following regions of the alimentary canal of rabbit does not secrete a digestive enzyme ?
(a) Mouth (b) Oesophagus
(c) Stomach (d) Duodenum
193. Which one of the following is the matching set of the gland and its secretion
(a) Pituitary gland - Thyroxin
(b) Salivary gland - Amylase
(c) Adrenal cortex - Vasopressin
(d) Islets of Langerhens - Secretin
194. Best source of Vit. A is
(a) Carrot (b) Honey
(c) Apple (d) None
195. Sucrose is found in
(a) Milk (b) Honey
(c) Sugar cane (d) Orange
196. Which one of these carbohydrates is a monsaccharide
(a) Glucose b) Starch
(c) Sucrose (d) Cellulose
197. Gastric juice includes
(a) HCl (b) Pepsin
(c) Rennin (d) All

198. Liver produce
(a) Many enzymes
(b) Many digestive enzymes
(c) No digestive enzymes
(d) None
199. Vit A & D are stored in
(a) Bone (b) Spleen
(c) Liver (d) All
200. Germs entering the body through food are mainly killed in the region of alimentary canal where pH may reach the level of
(a) 3 (b) 7 (c) l0 (d) Zero
(M.P.P.M.T. 90)
201. In man carbohydrate is stored in
(a) Muscle (b) Liver
(c) Both (d) None
202. Deamination of proteins takes place in
(a) Kidney (b) Liver
(c) Spieen (d) Air
203. The animals feed upon organic matter mixed with the soil are
(a) Herbivores (b) Saprozoic
(c) Mixotrophic (d) Detritus
204. Canabolic feed
(a) Own species (b) Any species
(c) No species (d) None
205. Predators prey upon
(a) Higher species (b) Lower species
(c) Same species (d) None
205. Sanguivores are
(a) Flesh eaters (b) Blood sucking
(c) Feed dead bodies (d) None
207. One of the following is filter feeder
(a) Unio (b) Paramecium
(c) Whale (d) All
208. Hard palate supported by
(a) Dentary + Anglusphenial
(b) Palatine + Premaxilla + Maxilla
(c) Nasal + Premaxilla f Maxilla
(d) Vomer + Premaxilla + Maxilla
209. Hardest part of tooth is
(a) Dentine (b) Enamel
(c) Pulp (d) None
210. Ivory of teeth is
(a) Enamel (b) Dentine
(c) Both (d) None
211. Zymogen cell and chief cells secrete
(a) HCI (b) Mucus
(c) Pepsi (d) Trypsin
212. Milk protein is acted upon by which of the following
(a) Rennin (b) Casein
(c) Pepsin (d) Caseinogen
213. Rennin is a

(a) Salivary product (b) Gastric product
(c) Pancreatic product (d) All these
214. Pylcrus, a constricted part of alimentary canal is situated between
(a) Oesophagus and stomach
(b) Stomach and duodenum
(c) Duodenum and ileum
(d) Ileum and rectum
215. Milk protein is
(a) Rennin (b) Casein
(c) Glycine (d) Galactose
216. One of the following papillae is absent in man
(a) Fungiform (b) Foliate
(c) Circumvellate (d) All
217. Taste buds are absent in
(a) Foliate papillae (b) Fungiform papillae
(c)Filliform Papillae.
(d) Circumvellate Papillae
218. Lingual papillae are present on
(a) All over the tongue
(b) Ant 1/3 Part of tongue
(c) Post. 2/3 Part of tongue
(d) Ant. 2/3 Part tongue
219. Tongue is made up of
(a) Smooth muscles
(b) Skeletal muscles
(c) Both (d) None
220. Bitter taste is perceived by tongue with
(a) Taste buds ant. Part
(b) Taste buds Post. Part
(e) Taste buds lateral Part
(d) Tase buds of all Parts
221. In rabbit duct of infra orbital salivary gland opens between
(a) Molars , (b) Premolars
(c) Incisors (d) None
222. Study of teeth is
(a) Dentology (b) Teethology
(c) OdontologY (d) Enamelogy
223. Release of gastro-intestinal secretion and movement of food is brought about by
(a) Sympathetic nervous system
(b) Parasympathetic nervous system
(c) Central nervous system
(d) Thyroid nervous membrane
224. In intestine pH value is
(a) pH 7.00 (b) pH 8.5-9.00
(c) pH 8.00 (d) pH 2.5-4.5
2i5. A good source of lipase is
(a) Saliva (b) Bile
(c) Gastric juice (d) Pancreatic juice .
226. Intestinal villi are numerous and larger in posterior part of small intestine because
(a) Digestion is faster in posterior part
(b) Blood supply is poor in anterior part

(c) Blood supply is poor in posterior part.
(d) There is more digested food in posterior part
227.Food is directed towards caecum & colon accordingly at the point
(a) Haustra (b) Taeinae
(c) Sacculus Rotendus (d) None
228. Glisson's capsules are found in
(a) Liver of mammals (b) Liver of frog
(c) Liver of man
(d) Pancreas of mammals
229. The function of vitamin K is in
(a) Regulation of Ca and P metabolism
(b) Carbohydrate metabolism
(c) Blood clotting (d) Respiration
230. In man, the bile juice secreted per day is
(a) 250 ml (b) 600 ml
(c) 1000 ml (d) 1500 ml
231. The caecum in rabbit is considered to be concerned with the digestion of
(a) Cellulose (b) Fat
(c) Starch (d) Protein
232. The enzyme which is used for the digestion of fat is
(a) Water (b) Bile
(c) Amylase (d) Lipase
233. In pancrease, pancreatic juice and hormones are secreted by
(a) Same cells (b) Different cells
(c) Same cells at different times
(d) None of these
234. Emulsification of fat is brought about by
(a) Bile pigments (b) Bile salts
(c) Pancreatic juice (d) HCl
235. Zymogen cells of gastric gland secrete
(a) Pepsinogen (b) Chymotrypsin
(c) Pepsin (d) Trypsin
236. Saccus entericus is the name given to
(a) Junction between ileum and large intestine
(b) Intestinal juice
(c) Swelling in the gut (d) Appendix
237. Herbivore animals have
(a) More teeth as compare to carnivore
(b) Flatter teeth than carnivore
(c) Fewer teeth than carnivore
(d) Sharp teeth than carnivore
238. Which of the following set is required for digestion of protein
(a) Rennin, lipase, pepsinogen
(b) Rennin, pepsin, trypsin
(c) Pepsin, trypsin, erepsin
(d) Trypsin, chymotrypsin, rennin
239. What is common among amylase, rennin and trypsin
(a) All are protein
(b) These are all proteolytic enzyme
(c) These are produced in stomach
(d) These act at a pH lower than 7

240. Where does complete digestion of protein take place
(a) Rectum (b) Ileum
(c) Duodenum (d) Stomach
241. Which of the following is produced from pancreas
(a) 3 digestive enzymes and 3 hormone
(b) 2 digestive enzymes and I hormone
(c) 3 digestive enzymes and 2 hormone
(d) 3 digestive enzymes and I hormone
242. Amylopsin acts upon
(a) polysaccharide in any medium
(b) polysaccharide in acidic medium
(c) polypeptide in any medium
(d) Polysaccharide in alkaline medium
243. Largest lobe of liver of rabbit is
(a) Spigeleon (b) Right central
(c) Left central (d) Caudate lobe
244. Smallest lobe of liver of rabbit is
(a) Caudate lobe (b) Right central Iobe
(c) Spigeleon (d) None
245. In man ampulla of vator receive
(a) Pancreatic duct (b) Bile duct
(c) Both (d)None
246. Pancreatic duct is also known as
(a) Wirsung duct (b) Wharton's duct
(c) Stenson's duct (d) None
247. Bile duct in man is known as
(a) Cisterne (b) Wirsung duct
(c) Choledecus duct (d) Wharton's duct
248. Gall bladder is absent in
(a) Horse (b) Whale
(c) Rhinoceros (d) All
249.In gut of rabbit taeinae & hustra are the parts of
(a) Ileum (b) Duodenum
(c) Colon (d) All
250. Vestibule is a space
(a) Between lips & gums
(b) Between tongue & teeth
(c) Between incisor & canine
(d) None
251. Salivary glands open into
(a) Buccal cavity (b) Oesophagus
(c) Stomach (d) All
252. Main part of tooth is
(a) Enamel (b) Dentine
(c) Pulp (d) None
253. Number is more in lingual papillae
(a) Filliform (b) Fungiform
(c) Circumvellate (d) None
254. Minimum number of lingual papillae is of
(a) Circumvellate (b) Filliform
(c) Foliate (d) None

255. Tooth is
(a) Living (b) Non-living
(c) Solid (d) None
256. Alveolar membrane found in
(a) Lung (b) Tooth
(c) Coelom (d) None
258. Exposed part of tooth is
(a) Neck (b) Root
(c) Crown (d) None
259. Nutrition to the tooth is supplied through
(a) Alveolus (b) Pulp cavity
(c) Enamel (d) Ail
260.Teeth in frog are
(a) Acrodont (b) Homodont
(c) Both (d) None
261. Fangs are the
(a) Poisonous teeth of snakes
(b) Furnes soap
(c) Bone pieces of limb (d) None
262. Dentition in Mammal is
(a) Heterodont (b) Thecodont
(c) Diphyodont (d) All
263. Incisors are well developed in
(a) Rodents (b) Carnivores
(c) Herbivorous (d) None
264. Grinding teeth are
(a) Incisors (b) Molars
(c) Canines (d) None
265. Wisdom teeth in man are
(a) Incisors (b) Premolars
(c) 3rd molars (d) All
266. In man 3rd molars (wisdom teeth) are
(a) Temporary (b) Permanent
(c) Polyphyodont (d) None
267. In total, number of permanent teeth in man are
(a) 20 (b) 12
(c) 06 (d) None
268. Diphyodont in man are
(a) 20 (b) 12
(c) 10 (d) None
269. Permanent teeth in man are
(a) Incisors (b) Premolars
(c) Molars (d) Canines
270. Wisdom teeth in man are
(a) Four (b) Two
(c) Eight (d) None
271. Tusk of elephant are modified
(a) Incisors (b) Canines
(c) Both (d) None
272. Tusk of walrus are modified
(a) Incisors (b) Canines

(c) Premolars (d) None
273. Teeth are absent since birth in
(a) Whale (b) Sloth
(c) Both (d) None
274.Typical no of mammalian teeth is
(a) 48 (b) 42
(c) 44 (c) 30
275. Wall of oesophagus is formed by
(a) Involuntry muscles
(b) Voluntry muscles
(c) Both (d) None
276. In Ruminent bacterial action on food take place in
(a) Rumen (b) Reticulum
(c) Omassum (d) Abomossum
277. Oxyntic cells produce HCL, these are also known as
(a) Parietal cells (b) Peptic cells
(c) Both (d) None
278. Gastric hormone is produced by
(a) Parietal cells (b) Argentophitic cells
(c) Basal cells (d) Peptic cells
279. Vermiform Appendix
(a) Lymphoid tissue (b) Vestigeal in man
(c) Produce anti bodies (d) All
280. Payers patches are (C.P.M.T.89)
(a) Lymph nodules in intestine
(b) Mucus cells of gastric gland
(c) Gastric pits of stomach
(d) None of the above
281. Liver is characterised by presence of
(a) Glisson's capsule (b) Kupffer's cells
(c) Both (d) None
282. Glisson's capsules are absent in liver of
(a) Rabbit (b) Man
(c) Frog (d) All
283. Liver cells are
(a) Hexagonal (b) Polygonal
(c) Triangular (d) Irregular
284. Liver of man is
(a) Bilobed (b) Trilobed
(c) Alobed (d) None
285. Liver of frog is
(a) Five lobed (b) Trilobed
(c) Bilobed (d) None
286. Liver is
(a) Ectodermal in origin
(b) Endodermal in origin
(c) Mesodermal in origin
(d) None
287. Pancreas in origin is
(a) Ectodermal (b) Mesodermal
(c) Endodermal (d) Ecto-mesodermal

288. largest liver lobe of rabbit is
(a) Ist lobe (b) IInd lobe
(c) IIIrd lobe (d) IVth lobe
289. Cystic duct arises from
(a) Kidney (b) Pancreas
(c) Gall bladder (d) Liver
290. Bile salts in bile juice of man arc
(a) 8.2% (b) 8.6%
(c) 8.6% (d) .65%
291. Bile pigments are
(a) Helpful in digestion
(b) Toxic in nature
(c) Brings emulsification
(d) None
292. Perday secretion of bile juice is
(a) 50 ml. (b) 100 ml.
(c) 250 ml (d) 600 ml
293. Secretion of choleresis is process of
(a) Bile juice (b) Pancreatic juice
(c) Intestinal juice
(d) Bacterial infection in intestine
294. Ist reservoir of blood is spleen and IInd is
(a) Kidney (b) Heart
(c) Liver (d) Pancreas
295. Emergency water is stored in
(a) Spleen (b) Liver
(c) Bone marrow (d) None
296. Site of heat production in the body is
(a) Liver (b) Kidney
(c) Lung (d) Spleen
297. Liver is excretory organ as
(a) Urea is formed here
(b) Deamination takes place
(c) Eliminate bile pigments
(d) None of the above
298. Arginase enzyme is formed by
(a) Spleen (b) Liver
(c) Kidney (d) All
299. Jaundice is
(a) Viral (b) Bacterial
(c) Both (d) None
300. In Jaundice level of one of following increase in blood
(a) Bile juice (b) Bile pigments
(c) Haemoglobin (d) All
301. Hepauitis of liver is
(a) Viral disease (b) Deficiency disease
(c) No disease (d) None
302. Liver cirrohosis is
(s) Enlargement of Liver
(b) Bleeding in liver
(c) Swelling in liver (d) None

303. More than 90% of bile salts are reabsorbed in
(a) Duodenum (b) Ileum
(c) Colon (d) None
304. CCK stimulate
(a) Filtration in kindney
(b) Contraction of gall bladder
(c) Heart beats (d) All
305. Starvation starts with
(a) Utilization of glucose by cells
(b) Utilization of glycogen by cells
(c) Utilization of fat & protein by cells
(d) None of the above
306. Alphabatical nomenclature of vitamins given by
(a) K. Funk (b) Hopkin
(c) J.C. Drummond (d) All
307. Earliest exatracted vitamin is
(a) Vit. A (b) Vit. C
(c) Vit. B_1 (d) None
308. One of the following is set of fat soluble vitamins
(a)A, B, D & K (b)A, B, C & E
(c)A, C, D & K (d)A, D, E & K
309. Dehydroretinol is
(a) Vit. A (b) Vit. A_2
(c) Vit. D (d) None
310. Veratom alesia is due to deficiency of
(a) Vit. C (b) Vit. A_2
(c) Vit. D (d) Vit. K
311. Calciferol is
(a) Vit. A (b) Vit. C
(c) Vit. D (d) Vit. K
312. Sunshine vitamin is
(a) Vit. A (b) Vit. D
(c) Vit. K (d) Vit. E
313. Calciferol (D2) is vitamin of
(a) Animal origin (b) Plant origin
(c) Blood clotting (d) None
314. Fertility vitamin (Antisterlity vit.) is
(a) Vit. A (b) Vit. E
(c) Vit. Q (d) Vit.K
315. Vitamin B_2 is associated with formation of
(a) Actomyosin (b) FMN & FAD
(c) Fibrinogen (d) Acetylcholine
316. Deficiency of B, causes
(a) Burning feet syndrome
(b) Morning disease
(c) Chelosis (d) None
317. R.B.C. maturing factor is
(a) Folic acid (b) B_{12}
(c) Calcium (d) None
318. Vitamin C is
(a) Antiviral (b) Anti scurvy

(c) Anti rabies (d) All
319. Vitamin for the formation of collagen fibres, teeth, bone, R.B.C. is
(a) Vit. K (b) Vit. D
(c) Vit. A (d) Vit. C
320. Beaded rectum is found in
(a) Frog (b) Rabbil
(c) Man (d) All
321. β-cells of pancreas Produce
(a) Insulin (b) Glucagon
(c) Both (d) None
322. Pancreatic juice is collected by small ducts from Acini, these are
(a) Wirsung duct (b) Ducts of santorini
(c) Wharton's duct (d) None
323. Pancreas mainly
(a) Digestive gland (b) Endocrine gland
(c) Lymph gland (d) None
324. In carnivores intestine is
(a) 5-6 times longer than the body
(b) 2.3 times longer than the body
(c) Equal to the body (d) None of the above
325. Intestine is 9-10 times longer than the body in
(a) Herbivores (b) Carnivores
(c) Omnivores (d) None
326. True stomach in ruminents is
(a) Rumen (b) Reticulum
(c) Abomassum (d) Omassum
327. In ruminents honey comb is
(a) Rumen (b) Abomassum
(c) Reticulum (d) None
328. In gastric glands mucus cells are more in
(a) Neck (b) Basal part
(c) Middle (d) None
329. Pepsin in stomach is produced by
(a) Parietal cells (b) Oxyntic cells
(c) Zymogenic cells (d) All
330. Food digestion is conversion of
(a) Macromolecules to micromolecules
(b) Non diffusable to diffusable molecules
(c) Insoluble to soluble
(d) All
331. One of the following is salivary gland
(a) Brunner’s gland (b) Stink gland
(c) Erypts of leibcrkuhn (d) Parotid gland
332. One of the following is not a salivary gland
(a) Parotid (b) Sub-lingual
(c) Sub maxillary (d) Payer’s patches
333. One of the following act upon milk protein
(a) Renin (b) Rennin
(c) Casein (d) None
334. One of the following is not a protein digesting
(a) Pepsin (b) Rennin

(c) Ptyalin (d) Air
335. Minimum peristaltis is found in
(a) Oesophagus (b) Stomach
(c) Ileum (d) Rectum
336. One of the following is longest part of alimentary canal
(a) Stomach (b) Ileum
(c) Colon (d) Rectum
337. Chief function of large intestine is
(a) Absorption of fat (b) Absorption of salts
(c) Absorption of minerals
(d) Absorption of water
338. Glucagon produced by
(a) α-cells of Islets (b) β-cells of Islets
(c) -cells of Islets (d) All
339. Before starvation
(a) Glucose is utilized
(b) Glycogen is consumed
(c) Fat is consumed
(d) Glucose & Glycogen consumed
340. The roof of buccal cavity is supported by
(a) Glottis (b) Gullet
(c) Palate (d) Ail
341. Vermiform appendix is a part of
(a) Gut of digestive system
(b) Vascular system
(c) Reproductive system
(d) None
342. Goblet cells produce mucus which
(a) Protect the wall of gut
(b) Digest protein
(c) Digest fat (d) none
343. Vomiting is result of
(a) Peristalsis (b) Anti peristalsis
(c) Both (d) None
344. Mineral which contronls the heart beats
(a) Sulphur (b) Sodium
(c) Iron (d) Potassium
345. One of the following mineral is essential for life of animals and rot for plants
(a) Calcium (b) Phosphorus
(c) Iodine (d) Potassium
346. Fat digestion is diffcult due to absence of
(a) Bile salts (b) Bile pigments
(c) Cholesterol (d) All
347. One of the following is excreted in Urine
(a) Vit. A (b) Vit. B
(c) Vit. C (c) Vit D
348, Taste buds in frog are restricted to
(a) Tongue (b) Buccal cavity
(c) Tongue & roof of buccal cavity
(d) Tongue & floor of buccal cavity
349. Dental formula of man is

(a)
(b)
(c)
(d)

350. Modern bread is formed with amino acid

(a) Histidine (b) Lysine
(c) Leucine (d) All

Answers to

1. a
2. a
3. c
4. b
5. b
6. d
7. a
8. c
9. c
10. a
11. a
12. c
13. c
14. b
15. a
16. d
17. d
18. b
19. a
20. c
21. a
22. a
23. b
24. b
25. d
26. d
27. c
28. c
29. c
30. b
31. a
32. b
33. a
34. c
35. c
36. c
37. a
38. b
39. b
40. a
41. a
42. c
43. d
44. c
45. d
46. c
47. a
48. a
49. b
50. c
51. b
52. d
53. c
54. a
55. b
56. d
57. c
58. b
59. a
60. a
61. b
62. b
63. a
64. c
65. c
66. a
67. a
68. b
69. b
70. c
71. d
72. b
73. b
74. b
75. d
76. a
77. d
78. c
79. a
80. d
81. c
82. a
83. a
84. d
85. a
86. c
87. a
88. c
89. b
90. b
91. b
92. b
93. a
94. c
95. b
96. b
97. a
98. b
99. c
100. c
101. c
102. d
103. d
104. d
105. b
106. a
107. a
108. d
109. b
110. b
111. a
112. a
113. d
114. c
115. b
116. b
117. b
118. a
119. c
120. a
121. a
122. d
123. b
124. d
125. c
126. b
127. b
128. d

129. d
130. b
131. b
132. a
133. d
134. b
135. d
136. c
137. b
138. c
139. b
140. c
141. d
142. b
143. c
144. c
145. c
146. a
147. b
148. b
149. c
150. c
151. a
152. d
153. b
154. b
155. b
156. d
157. d
158. b
159. a
160. c
161. d
162. a
163. d
164. d
165. d
166. a
167. b
168. b
169. c
170. b
171. a
172. d
173. a
174. c
175. a
176. a
177. c
178. a
179. d
180. c
181. c
182. d
183. b
184. a
185. a
186. c
187. c
188. a
189. a
190. a
191. c
192. b
193. b
194. a
195. c
196. a
197. d
198. c
199. c
200. a
201. c
202. b
203. d
204. a
205. b
206. b
207. d
208. b
209. b
210. b
211. c
212. a
213. b
214. b
215. b
216. b
217. c
218. d
219. b
220. b
221. a
222. c
223. b
224. b
225. d
226. d
227. c
228. a
229. c
230. b
231. a
232. d
233. b
234. b
235. a
236. b
237. b
238. c
239. a
240. b
241. c
242. d
243. b
244. c
245. c
246. a
247. c
248. d
249. c
250. a
251. a
252. b
253. a
254. a
255. a
256. b
257. c
258. c
259. b
260. c
261. a
262. d
263. a
264. b
265. c
266. b
267. b
268. a
269. b
270. a
271. a
272. b
273. c
274. c
275. c
276. a
277. a
278. b
279. d
280. a
281. c

282.	c	305.	c	328.	a
283.	a	306.	c	329.	c
284.	a	307.	c	330.	d
285.	b	308.	d	331.	d
286.	b	309.	b	332.	d
287.	c	310.	b	333.	b
288.	b	311.	c	334.	c
289.	c	312.	b	335.	d
290.	a	313.	a	336.	b
291.	b	314.	b	337.	d
292.	d	315.	b	338.	a
293.	a	316.	a	339.	d
294.	c	317.	b	340.	c
295.	b	318.	d	341.	a
296.	a	319.	d	342.	a
297.	c	320.	b	343.	b
298.	b	321.	a	344.	b
299.	c	322.	b	345.	b
300.	b	323.	a	346.	a
301.	a	324.	b	347.	c
302.	b	325.	a	348.	c
303.	b	326.	c	349.	c
304.	b	327.	c	350.	b

Department of Zoology
B.Sc. IV Semester (Paper No XIV)
Biochemistry and Endocrinology
Multiple Choice Questions

1. A drug which prevents uric acid synthesis by inhibiting the enzyme xanthine oxidase is
(A) Aspirin (B) Allopurinol
(C) Colchicine (D) Probenecid

2. Which of the following is required for crystallization and storage of the hormone insulin?
(A) Mn^{++} (B) Mg^{++}
(C) Ca^{++} (D) Zn^{++}

3. Oxidation of which substance in the body yields the most calories
(A) Glucose (B) Glycogen
(C) Protein (D) Lipids

4. Milk is deficient in which vitamins?
(A) Vitamin C (B) Vitamin A
(C) Vitamin B_2 (D) Vitamin K

5. Milk is deficient of which mineral?
(A) Phosphorus (B) Sodium
(C) Iron (D) Potassium

6. Synthesis of prostaglandinsis is inhibited by
(A) Aspirin (B) Arsenic
(C) Fluoride (D) Cyanide

7. HDL is synthesized and secreted from
(A) Pancreas (B) Liver
(C) Kidney (D) Muscle

8. Which are the cholesterol esters that enter cells through the receptor-mediated endocytosis of lipoproteins hydrolyzed?
(A) Endoplasmin reticulum
(B) Lysosomes
(C) Plasma membrane receptor
(D) Mitochondria

9. Which of the following phospholipids is localized to a greater extent in the outer leaflet of the membrane lipid bilayer?
(A) Choline phosphoglycerides
(B) Ethanolamine phosphoglycerides
(C) Inositol phosphoglycerides
(D) Serine phosphoglycerides

10. All the following processes occur rapidly in the membrane lipid bilayer except
(A) Flexing of fatty acyl chains
(B) Lateral diffusion of phospholipids
(C) Transbilayer diffusion of phospholipids
(D) Rotation of phospholipids around their long axes

11. Which of the following statement is correct about membrane cholesterol?
(A) The hydroxyl group is located near the centre
of the lipid layer
(B) Most of the cholesterol is in the form of a cholesterol ester
(C) The steroid nucleus form forms a rigid, planar Structure
(D) The hydrocarbon chain of cholesterol projects into the extracellular fluid

12. Which one is the heaviest particulate component of the cell?
(A) Nucleus (B) Mitochondria
(C) Cytoplasm (D) Golgi apparatus

13. Which one is the largest particulate of the cytoplasm?
(A) Lysosomes
(B) Mitochondria
(C) Golgi apparatus
(D) Entoplasmic reticulum

14. The degradative Processess are categorized under the heading of
(A) Anabolism (B) Catabolism
(C) Metabolism (D) None of the above

15. The exchange of material takes place
(A) Only by diffusion
(B) Only by active transport
(C) Only by pinocytosis
(D) All of these

16. The average pH of Urine is
(A) 7.0 (B) 6.0
(C) 8.0 (D) 0.0

17. The pH of blood is 7.4 when the ratio between H_2CO_3 and $NaHCO_3$ is
(A) 1 : 10 (B) 1 : 20
(C) 1 : 25 (C) 1 : 30

18. The phenomenon of osmosis is opposite to that of
(A) Diffusion (B) Effusion
(C) Affusion (D) Coagulation

19. The surface tension in intestinal lumen between fat droplets and aqueous medium is decreased by
(A) Bile Salts (B) Bile acids
(C) Conc. H_2SO_4 (D) Acetic acid

20. Which of the following is located in the mitochondria?
(A) Cytochrome oxidase
(B) Succinate dehydrogenase
(C) Dihydrolipoyl dehydrogenase
(D) All of these

1. B 2. D 3. D 4. A 5. C 6. A
7. B 8. B 9. A 10. C 11. C 12. A
13. B 14. B 15. D 16. B 17. B 18. A
19. A 20. D

1. general formula of monosaccharides is
(A) $C_nH_{2n}O_n$ (B) $C_{2n}H_2O_n$
(C) $C_nH_2O_{2n}$ (D) $C_nH_{2n}O_{2n}$

2. The general formula of polysaccharides is
(A) $(C_6H_{10}O_5)_n$ (B) $(C_6H_{12}O_5)_n$
(C) $(C_6H_{10}O_6)_n$ (D) $(C_6H_{10}O_6)_n$

3. The aldose sugar is
(A) Glycerose (B) Ribulose
(C) Erythrulose (D) Dihydoxyacetone

4. A triose sugar is
(A) Glycerose (B) Ribose
(C) Erythrose (D) Fructose

5. A pentose sugar is
(A) Dihydroxyacetone (B) Ribulose
(C) Erythrose (D) Glucose

6. The pentose sugar present mainly in the heart muscle is
(A) Lyxose (B) Ribose
(C) Arabinose (D) Xylose

7. Polysaccharides are
(A) Polymers (B) Acids
(C) Proteins (D) Oils

8. The number of isomers of glucose is
(A) 2 (B) 4
(C) 8 (D) 16

9. Two sugars which differ from one another only in configuration around a single carbon atom are termed
(A) Epimers (B) Anomers
(C) Optical isomers (D) Stereoisomers

10. Isomers differing as a result of variations in configuration of the —OH and —H on carbon atoms 2, 3 and 4 of glucose are known as
(A) Epimers (B) Anomers
(C) Optical isomers (D) Steroisomers

11. The most important epimer of glucose is
(A) Galactose (B) Fructose
(C) Arabinose (D) Xylose

12. ⟨-D-glucose and ® -D-glucose are
(A) Stereoisomers (B) Epimers
(C) Anomers (D) Keto-aldo pairs

13. ⟨-D-glucose + 112^0 □ + 52.5^0 □ + 19^0 ®-D-glucose for glucose above represents
(A) Optical isomerism (B) Mutarotation
(C) Epimerisation (D) D and L isomerism

14. Compounds having the same structural formula but differing in spatial configuration are known as
(A) Stereoisomers (B) Anomers
(C) Optical isomers (D) Epimers

15. In glucose the orientation of the —H and —OH groups around the carbon atom 5 adjacent to the terminal primary alcohol carbon determines
(A) D or L series
(B) Dextro or levorotatory
(C) ⟨ and ® anomers
(D) Epimers

16. The carbohydrate of the blood group substances is
(A) Sucrose (B) Fucose
(C) Arabinose (D) Maltose

17. Erythromycin contains
(A) Dimethyl amino sugar
(B) Trimethyl amino sugar
(C) Sterol and sugar
(D) Glycerol and sugar

18. A sugar alcohol is

(A) Mannitol (B) Trehalose
(C) Xylulose (D) Arabinose

19. The major sugar of insect hemolymph is
(A) Glycogen (B) Pectin
(C) Trehalose (D) Sucrose

20. The sugar found in DNA is
(A) Xylose (B) Ribose
(C) Deoxyribose (D) Ribulose

ANSWERS

1. A 2. A 3. A 4. A 5. B 6. A
7. A 8. D 9. A 10. A 11. A 12. C
13. B 14. A 15. A 16. B 17. A 18. A
19. C 20. C

1. All proteins contain the
(A) Same 20 amino acids
(B) Different amino acids
(C) 300 Amino acids occurring in nature
(D) Only a few amino acids

2. Proteins contain
(A) Only L- ⟨ - amino acids
(B) Only D-amino acids
(C) DL-Amino acids
(D) Both (A) and (B)

3. The optically inactive amino acid is
(A) Glycine (B) Serine
(C) Threonine (D) Valine

4. At neutral pH, a mixture of amino acids in solution would be predominantly:
(A) Dipolar ions
(B) Nonpolar molecules
(C) Positive and monovalent
(D) Hydrophobic

5. The true statement about solutions of amino acids at physiological pH is
(A) All amino acids contain both positive and negative charges
(B) All amino acids contain positively charged side chains
(C) Some amino acids contain only positive Charge
(D) All amino acids contain negatively charged side chains

6. pH (isoelectric pH) of alanine is
(A) 6.02 (B) 6.6
(C) 6.8 (D) 7.2

7. Since the pK values for aspartic acid are 2.0, 3.9 and 10.0, it follows that the isoelectric (pH) is
(A) 3.0 (B) 3.9
(C) 5.9 (D) 6.0

8. Sulphur containing amino acid is
(A) Methionine (B) Leucine
(C) Valine (D) Asparagine

9. An example of sulphur containing amino acid is
(A) 2-Amino-3-mercaptopropanoic acid
(B) 2-Amino-3-methylbutanoic acid
(C) 2-Amino-3-hydroxypropanoic acid
(D) Amino acetic acid

10. All the following are sulphur containing amino acids found in proteins except
(A) Cysteine (B) Cystine
(C) Methionine (D) Threonine

11. An aromatic amino acid is
(A) Lysine (B) Tyrosine
(C) Taurine (D) Arginine

12. The functions of plasma albumin are
(A) Osmosis (B) Transport
(C) Immunity (D) both (A)and (B)

13. Amino acid with side chain containing basic groups is
(A) 2-Amino 5-guanidovaleric acid
(B) 2-Pyrrolidine carboxylic acid
(C) 2-Amino 3-mercaptopropanoic acid
(D) 2-Amino propanoic acid

14. An example of ⟨-amino acid not present in proteins but essential in mammalian metabolism is
(A) 3-Amino 3-hydroxypropanoic acid
(B) 2-Amino 3-hydroxybutanoic acid
(C) 2-Amino 4-mercaptobutanoic acid
(D) 2-Amino 3-mercaptopropanoic acid

15. An essential amino acid in man is
(A) Aspartate (B) Tyrosine

(C) Methionine (D) Serine

16. Non essential amino acids
(A) Are not components of tissue proteins
(B) May be synthesized in the body from essential
amino acids
(C) Have no role in the metabolism
(D) May be synthesized in the body in diseased states

17. Which one of the following is semiessential
amino acid for humans?
(A) Valine (B) Arginine
(C) Lysine (D) Tyrosine

18. An example of polar amino acid is
(A) Alanine (B) Leucine
(C) Arginine (D) Valine

19. The amino acid with a nonpolar side Chain is
(A) Serine (B) Valine
(C) Asparagine (D) Threonine

20. A ketogenic amino acid is
(A) Valine (B) Cysteine
(C) Leucine (D) Threonine

ANSWERS

1. A 2. A 3. A 4. A 5. A 6. A
7. A 8. A 9. A 10. D 11. B 12. A
13. A 14. C 15. C 16. B 17. B 18. C
19. B 20. C

1. An example of a hydroxy fatty acid is
(A) Ricinoleic acid (B) Crotonic acid
(C) Butyric acid (D) Oleic acid

2. An example of a saturated fatty acid is
(A) Palmitic acid (B) Oleic acid
(C) Linoleic acid (D) Erucic acid

3. If the fatty acid is esterified with an alcohol of high molecular weight instead of glycerol, the resulting compound is
(A) Lipositol (B) Plasmalogen
(C) Wax (D) Cephalin

4. A fatty acid which is not synthesized in the body and has to be supplied in the diet is
(A) Palmitic acid (B) Lauric acid
(C) Linolenic acid (D) Palmitoleic acid

5. Essential fatty acid:
(A) Linoleic acid (B) Linolenic acid
(C) Arachidonic acid (D) All these

6. The fatty acid present in cerebrosides is
(A) Lignoceric acid (B) Valeric acid
(C) Caprylic acid (D) Behenic acid

7. The number of double bonds in arachidonic acid is
(A) 1 (B) 2
(C) 4 (D) 6

8. In humans, a dietary essential fatty acid is
(A) Palmitic acid (B) Stearic acid
(C) Oleic acid (D) Linoleic acid

9. A lipid containing alcoholic amine residue is
(A) Phosphatidic acid (B) Ganglioside
(C) Glucocerebroside (D) Sphingomyelin

10. Cephalin consists of
(A) Glycerol, fatty acids, phosphoric acid and choline
(B) Glycerol, fatty acids, phosphoric acid and ethanolamine
(C) Glycerol, fatty acids, phosphoric acid and inositol
(D) Glycerol, fatty acids, phosphoric acid and serine

11. In mammals, the major fat in adipose tissues is
(A) Phospholipid (B) Cholesterol
(C) Sphingolipids (D) Triacylglycerol

12. Glycosphingolipids are a combination of
(A) Ceramide with one or more sugar residues
(B) Glycerol with galactose
(C) Sphingosine with galactose
(D) Sphingosine with phosphoric acid

13. The importance of phospholipids as constituent of cell membrane is because they possess
(A) Fatty acids
(B) Both polar and nonpolar groups
(C) Glycerol
(D) Phosphoric acid

14. In neutral fats, the unsaponificable matter includes
(A) Hydrocarbons (B) Triacylglycerol
(C) Phospholipids (D) Cholsesterol

15. Higher alcohol present in waxes is
(A) Benzyl (B) Methyl
(C) Ethyl (D) Cetyl

16. Kerasin consists of
(A) Nervonic acid (B) Lignoceric acid
(C) Cervonic acid (D) Clupanodonic acid

17. Gangliosides are complex glycosphingolipids found in
(A) Liver (B) Brain
(C) Kidney (D) Muscle

18. Unsaturated fatty acid found in the cod liver oil and containing 5 double bonds is
(A) Clupanodonic acid
(B) Cervonic acid

(C) Elaidic acid
(D) Timnodonic acid

19. Phospholipid acting as surfactant is
(A) Cephalin (B) Phosphatidyl inositol
(C) Lecithin (D) Phosphatidyl serine

20. An oil which contains cyclic fatty acids and
once used in the treatment of leprosy is
(A) Elaidic oil (B) Rapeseed oil
(C) Lanoline (D) Chaulmoogric oil

ANSWERS
1. A 2. A 3. C 4. C 5. D 6. A
7. C 8. D 9. D 10. B 11. D 12. A
13. B 14. A 15. D 16. B 17. B 18. D
19. C 20. D

1. The compound which has the lowest density is
(A) Chylomicron (B) ®-Lipoprotein
(C) ⟨-Lipoprotein (D) pre ®-Lipoprotein

2. Non steroidal anti inflammatory drugs, such as aspirin act by inhibiting the activity of the enzyme:
(A) Lipoxygenase (B) Cyclooxygenase
(C) Phospholipase A_2 (D) Lipoprotein lipase

3. From arachidonate, synthesis of prostaglandins is catalysed by
(A) Cyclooxygenase
(B) Lipoxygenase
(C) Thromboxane synthase
(D) Isomerase

4. A Holoenzyme is
(A) Functional unit (B) Apo enzyme
(C) Coenzyme (D) All of these

5. Gaucher's disease is due to the deficiency of the enzyme:
(A) ⟨-Fucosidase (B) ®-Galactosidase
(C) ®-Glucosidase (D) Sphingomyelinase

6. Neimann-Pick disease is due to the deficiency of the enzyme:
(A) Hexosaminidase A and B
(B) Ceramidase
(C) Ceramide lactosidase
(D) Sphingomyelinase

7. Krabbe's disease is due to the deficiency of the enzyme:
(A) Ceramide lactosidase
(B) Ceramidase
(C) ®-Galactosidase
(D) GM1 ®-Galactosidase

8. Fabry's disease is due to the deficiency of the enzyme:
(A) Ceramide trihexosidase
(B) Galactocerebrosidase
(C) Phytanic acid oxidase
(D) Sphingomyelinase

9. Farber's disease is due to the deficiency of the enzyme:
(A) ⟨-Galactosidase
(B) Ceramidase
(C) ®-Glucocerebrosidase
(D) Arylsulphatase A.

10. A synthetic nucleotide analogue, used in organ transplantation as a suppressor of immunologic rejection of grafts is
(A) Theophylline
(B) Cytarabine
(C) 4-Hydroxypyrazolopyrimidine
(D) 6-Mercaptopurine

11. Example of an extracellular enzyme is
(A) Lactate dehydrogenase
(B) Cytochrome oxidase
(C) Pancreatic lipase
(D) Hexokinase

12. Enzymes, which are produced in inactive form in the living cells, are called
(A) Papain (B) Lysozymes
(C) Apoenzymes (D) Proenzymes

13. An example of ligases is
(A) Succinate thiokinase
(B) Alanine racemase
(C) Fumarase
(D) Aldolase

14 An example of lyases is
(A) Glutamine synthetase
(B) Fumarase
(C) Cholinesterase
(D) Amylase

15. Activation or inactivation of certain key regulatory enzymes is accomplished by covalent modification of the amino acid:
(A) Tyrosine (B) Phenylalanine
(C) Lysine (D) Serine

16. The enzyme which can add water to a carbon-carbon double bond or remove water to create a double bond without breaking the bond is
(A) Hydratase (B) Hydroxylase
(C) Hydrolase (D) Esterase

17. Fischer's 'lock and key' model of the enzyme action implies that
(A) The active site is complementary in shape to that of substance only after interaction.
(B) The active site is complementary in shape to that of substance
(C) Substrates change conformation prior to active
site interaction
(D) The active site is flexible and adjusts to substrate

18. From the Lineweaver-Burk plot of Michaelis-Menten equation, Km and Vmax can be determined when V is the reaction velocity at substrate concentration S, the X-axis experimental data are expressed as
(A) 1/V (B) V
(C) 1/S (D) S

19. A sigmoidal plot of substrate concentration
([S]) verses reaction velocity (V) mayindicate
(A) Michaelis-Menten kinetics
(B) Co-operative binding
(C) Competitive inhibition
(D) Non-competitive inhibition

20. The K_m of the enzyme giving the kinetic data as below is
(A) –0.50 (B) –0.25
(C) +0.25 (D) +0.33
1. A 2. B 3. A 4. D 5. C 6. D
7. C 8. A 9. B 10. D 11. C 12. D
13. A 14. B 15. D 16. A 17. B 18. C
19. B 20. D

1. When ATP forms AMP
(A) Inorganic pyrophosphate is produced
(B) Inorganic phosphorous is produced
(C) Phsophagen is produced
(D) No energy is produced

2. Standard free energy (⊗G°) of hydrolysis of ATP to ADP + Pi is
(A) –49.3 KJ/mol (B) –4.93 KJ/mol
(C) –30.5 KJ/mol (D) –20.9 KJ/mol

3. Standard free energy (⊗G°) of hydrolysis of ADP to AMP + Pi is
(A) –43.3 KJ/mol (B) –30.5 KJ/mol
(C) –27.6 KJ/mol (D) –15.9 KJ/mol

4. Standard free energy (⊗G°) of hydrolysis of phosphoenolpyruvate is
(A) –61.9 KJ/mol (B) –43.1 KJ/mol
(C) –14.2 KJ/mol (D) –9.2 KJ/mol

5. Standard free energy (⊗G°) of hydrolysis of creatine phosphate is
(A) -–51.4 KJ/mol (B) –43.1 KJ/mol
(C) –30.5 KJ/mol (D) –15.9 KJ/mol

6. The oxidation-reduction system having the highest redox potential is
(A) Ubiquinone ox/red
(B) Fe^{3+} cytochrome a/Fe^{2+}
(C) Fe^{3+} cytochrome b/Fe^{2+}
(D) NAD^{+}/NADH

7. If ⊗G°= –2.3RT log Keq, the free energy for the reaction will be
A + B C
10moles 10moles 10moles
(A) –4.6 RT (B) –2.3 RT
(C) +2.3 RT (D) +4.6 RT

8. Redox potential (E_o volts) of NAD^{+}/NADH is
(A) –0.67 (B) –0.32
(C) –0.12 (D) +0.03

9. Redox potential (E_o volts) of ubiquinone, ox/red system is
(A) +0.03 (B) +0.08
(C) +0.10 (D) +0.29

10. Redox potential (E_o volts) of cytochrome C, Fe^{3+}/Fe^{2+} is
(A) –0.29 (B) –0.27
(C) –0.08 (D) +0.22

11. The prosthetic group of aerobic dehydrogenases is
(A) NAD (B) NADP
(C) FAD (D) Pantothenic acid

12. Alcohol dehydrogenase from liver contains
(A) Sodium (B) Copper
(C) Zinc (D) Magnesium

13. A molybdenum containing oxidase is
(A) Cytochrome oxidase
(B) Xanthine oxidase
(C) Glucose oxidase
(D) L-Amino acid oxidase

14. A copper containing oxidase is
(A) Cytochrome oxidase
(B) Flavin mononucleotide
(C) Flavin adenine dinucleotide
(D) Xanthine oxidase

15. The mitochondrial superoxide dismutase contains
(A) Mg^{++} (B) Mn^{++}
(C) Co^{++} (D) Zn^{++}

16. Cytosolic superoxide dismutase contains
(A) Cu^{2+} and Zn^{2+} (B) Mn^{2+}
(C) Mn^{2+} and Zn^{2+} (D) Cu^{2+} and Fe^{2+}

17. Cytochrome oxidase contains
(A) Cu^{2+} and Zn^{2+} (B) Cu^{2+} and Fe^{2+}
(C) Cu^{2+} and Mn^{2+} (D) Cu^{2+}

18. Characteristic absorption bands exhibited by ferrocytochrome:
(A) ⟨ band (B) ® band
(C) ⟨ and ® bands (D) ⟨, ® and © bands

19. Monooxygenases are found in

(A) Cytosol (B) Nucleus
(C) Mitochondira (D) Microsomes

20. A component of the respiratory chain in mitochondria is
(A) Coenzyme Q
(B) Coenzyme A
(C) Acetyl coenzyme
(D) Coenzyme containing thiamin

Answer : 1. A 2. C 3. C 4. A 5. B 6. B
7. C 8. B 9. C 10. D 11. C 12. C
13. B 14. A 15. B 16. A 17. B 18. D
19. D 20. A

1. Vitamins are
(A) Accessory food factors
(B) Generally synthesized in the body
(C) Produced in endocrine glands
(D) Proteins in nature

2. Vitamin A or retinal is a
(A) Steroid
(B) Polyisoprenoid compound containing a cyclohexenyl ring
(C) Benzoquinone derivative
(D) 6-Hydroxychromane

3. ®-Carotene, precursor of vitamin A, is oxidatively cleaved by
(A) ®-Carotene dioxygenase
(B) Oxygenase
(C) Hydroxylase
(D) Transferase

4. Retinal is reduced to retinol in intestinal mucosa by a specific retinaldehyde reductase utilising
(A) NADPH + H_+ (B) FAD
(C) NAD (D) NADH + H_+

5. Preformed Vitamin A is supplied by
(A) Milk, fat and liver
(B) All yellow vegetables
(C) All yellow fruits
(D) Leafy green vegetables

6. Retinol and retinal are interconverted requiring dehydrogenase or reductase in the presence of
(A) NAD or NADP (B) NADH + H_+
(C) NADPH (D) FAD

7. Fat soluble vitamins are
(A) Soluble in alcohol
(B) one or more Propene units
(C) Stored in liver
(D) All these

8. The international unit of vitamin A is equivalent to the activity caused by
(A) 0.3 µg of Vitamin A alcohol
(B) 0.344 µg of Vitamin A alcohol
(C) 0.6 µg of Vitamin A alcohol
(D) 1.0 µg of Vitamin A alcohol

9. Lumirhodopsin is stable only at temperature below
(A) –10°C (B) –20°C
(C) –40°C (D) –50°C

10. Retinol is transported in blood bound to
(A) Aporetinol binding protein
(B) $\langle_2$-Globulin
(C) ®-Globulin
(D) Albumin

11. The normal serum concentration of vitamin A in mg/100 ml is
(A) 5–10 (B) 15–60
(C) 100–150 (D) 0–5

12. One manifestation of vitamin A deficiency is
(A) Painful joints
(B) Night blindness
(C) Loss of hair
(D) Thickening of long bones

13. Deficiency of Vitamin A causes
(A) Xeropthalmia
(B) Hypoprothrombinemia
(C) Megaloblastic anemia
(D) Pernicious anemia

14. An important function of vitamin A is
(A) To act as coenzyme for a few enzymes
(B) To play an integral role in protein synthesis
(C) To prevent hemorrhages
(D) To maintain the integrity of epithelial tissue

15. Retinal is a component of
(A) Iodopsin (B) Rhodopsin
(C) Cardiolipin (D) Glycoproteins

16. Retinoic acid participates in the Synthesis of
(A) Iodopsin (B) Rhodopsin
(C) Glycoprotein (D) Cardiolipin

17. On exposure to light rhodopsin forms
(A) All trans-retinal (B) Cis-retinal
(C) Retinol (D) Retinoic acid

18. Carr-Price reaction is used to detect
(A) Vitamin A (B) Vitamin D
(C) Ascorbic acid (D) Vitamin E

19. The structure shown below is of
(A) Cholecalciferol
(B) 25-Hydroxycholecalciferol
(C) Ergocalciferol
(D) 7-Dehydrocholesterol

20. Vitamin D absorption is increased in
(A) Acid pH of intestine
(B) Alkaline pH of intestine
(C) Impaired fat absorption
(D) Contents of diet

Answer ; 1. A 2. B 3. A 4. A 5. A 6. A
7. D 8. A 9. D 10. A 11. B 12. B
13. A 14. D 15. B 16. C 17. A 18. A
19. A 20.

1.The hormone that influences the production of red blood cells is:

A) thyroxin
B) erythropoietin
C) calcitonin
D) thymosin
E) insulin

Answer: B

2. An example of an environmental signal that acts at a distance between individuals is
   A) insulin.
   B) cortisol.
   C) pheromones.
   D) prostaglandins.
   E) nerve growth factor.

   Answer: C

3. A pheromone is
   A) an endorphin released within the anterior pituitary.
   B) a growth factor related to the production of tumors.
   C) a product of a neurosecretory cell that acts on neighboring cells.
   D) a chemical released by one animal to affect the behavior of another animal.
   E) a regulatory hormone that stimulates or inhibits the release of hormones produced by other endocrine glands.

   Answer: D

4. Zoologists extracted the chemical that the Japanese beetle uses to attract a mate, and use it in a trap to reduce the beetle population. They are utilizing a
   A) hormone.
   B) pesticide.
   C) enzyme.
   D) pheromone.
   E) excretion.

   Answer: D

5.An example of a hormone signal that acts locally between adjacent cells is

A) insulin.
B) growth hormone.
C) pheromones.
D) prostaglandins.

E) cortisol.
Answer: D

6. Which is associated with a steroid hormone?
   A) cyclic AMP
   B) the second messenger system
   C) production of new proteins
   D) activation of proteins present in an inactive form
   E) binding of a protein to a surface receptor on the plasma membrane
   Answer: C

7. Which statement about hormone types is correct?
   A) Non-steroid hormones activate an enzyme cascade.
   B) Steroid hormones regulate the production of a particular protein.
   C) Non-steroid hormones are either amino acids, peptides, or proteins.
   D) Steroid hormones all have four carbon rings with different side chains.
   E) All of the choices are correct.
   Answer: E

8. Which statement is NOT true about steroid hormones?
   A) They include hormones such as estrogen.
   B) They do not bind to cell surface receptors.
   C) The hormone-receptor complex can enter the nucleus.
   D) The hormone-receptor complex can bind to chromatin.
   E) Steroid hormones act faster than non-steroid (peptide) hormones.
   Answer: E

9. Which statement is NOT true about non-steroid (peptide) hormones?
   A) They are derived from peptides, proteins, polypeptides, and derivatives of amino acids.
   B) They bind to receptors on the cell surface.
   C) They form cyclic AMP inside the cell.
   D) They create an enzyme cascade effect.
   E) They enter the cell in order to have an effect.
   Answer: E

10. Which does NOT occur in a cell stimulated by a steroid hormone?
    A) The steroid hormone enters the cell by crossing the plasma membrane.
    B) The hormone binds to a receptor molecule in the cytoplasm.
    C) The second messenger cyclic AMP is stimulated by the hormone-receptor complex.
    D) The hormone-receptor complex binds the chromatin and activates certain genes.
    E) DNA is transcribed, mRNA is translated, and the result is protein synthesis.
    Answer: C

11. Which body system coordinates activities of body parts by releasing hormones into the blood?
    A) nervous system
    B) digestive system
    C) respiratory system
    D) circulatory system

E) endocrine system

Answer: E

12. Which of the following is NOT true about hormones?
    A) Hormones are secreted into the bloodstream.
    B) Hormones are released from exocrine glands.
    C) Hormones may be classified as peptides or steroids.
    D) Hormones usually affect a target organ.
    E) Cells that react to a hormone have specific receptors for that hormone.
    Answer: B

13. Which of the following is NOT an endocrine gland?
    A) pancreas
    B) adrenal glands
    C) salivary glands
    D) thyroid gland
    E) pituitary gland
    Answer: C

14. Which of the following is true of endocrine glands?
    A) endocrine glands are located very close to their target organs to be more effective.
    B) each endocrine gland only produces one hormone.
    C) some endocrine glands have additional non-endocrine functions.
    D) each endocrine gland is independent and not affected by another endocrine gland.
    E) None of the choices are correct.
    Answer: C

15. Which of the following is NOT correct about hormones?
    A) Hormones are generally found across the animal kingdom.
    B) Hormones may be used at a distance from where the hormone is made.
    C) Hormones have a slower effect than that mediated by the nervous system.
    D) Hormones bind to receptor sites at a target cell.
    E) Hormones are directed to the target organ and avoid contact with non-target cells.
    Answer: E

16. Which is an example of negative feedback?
    A) Nursing action stimulates the hypothalamus to release oxytocin that triggers mammary gland milk production.
    B) When the blood becomes dilute, ADH is no longer released from the hypothalamus.
    C) Uterine stretching sends nerve impulses to the hypothalamus that releases oxytocin that triggers uterine contraction.
    D) FSH and LH stimulate the gonads to produce sperm or eggs.

E) TRH stimulates the anterior pituitary to release thyroid-stimulating hormone.

Answer: B

17. Which of the following endocrine glands does NOT produce its own hormones but stores hormones produced by the hypothalamus?

A) thyroid
B) adrenal cortex
C) adrenal medulla
D) posterior pituitary
E) anterior pituitary

Answer: D

18. The hypothalamus controls the anterior pituitary via

A) nerve stimulation.
B) blood osmotic concentrations.
C) blood glucose concentrations.
D) releasing hormones.
E) ACTH.

Answer: D

19. Consider the synchronization of birth and milk production. Babies can be born several months prematurely, and milk production is needed immediately after birth. How has the human body evolved to coordinate this delicate timing of events?

A) The ovaries signal the rest of the body tissues by varying the level of estrogen.
B) Conscious awareness of the arrival of a baby triggers the mother's hypothalamus to secrete prolactin.
C) The hypothalamus and pituitary that triggered the female reproductive cycle also schedule milk production on a nine-month clock basis.
D) ADH produced by the baby passes through the placenta and, added to the mother's ADH, builds up her milk production relative to the size of the fetus.
E) Oxytocin both causes the uterus to contract in labor and stimulates the release of milk from mammary glands, which is reinforced by prolactin from the pituitary.

Answer: E

20. The part of the brain controlling the anterior pituitary gland secretions is the

A) medulla.
B) thalamus.
C) cerebral cortex.
D) hypothalamus.
E) cerebellum.

Answer: D

21. Which of the following hormones is/are NOT a product of the anterior lobe of the pituitary?

A) growth hormone
B) antidiuretic hormone
C) gonadotropic hormones
D) thyroid-stimulating hormone
E) adrenocorticotropic hormone

Answer: B

22. The hypothalamic-releasing hormones directly control the
    A) adrenal cortex.
    B) thyroid.
    C) anterior pituitary.
    D) posterior pituitary.
    E) pancreas.

    Answer: C

23. If we injected a mammal with radioactive iodine, most of it would end up in
    A) the bone.
    B) the liver.
    C) the kidney.
    D) the thymus.
    E) the thyroid.

    Answer: E

24. Which hormone stimulates the production of cortisol?
    A) growth hormone
    B) antidiuretic hormone
    C) gonadotropic hormones
    D) thyroid-stimulating hormone
    E) adrenocorticotropic hormone

    Answer: E

25. Which hormone stimulates the production of estrogen and progesterone?
    A) growth hormone
    B) antidiuretic hormone
    C) gonadotropic hormones
    D) thyroid-stimulating hormone
    E) adrenocorticotropic hormone

    Answer: C

26. Which hormone causes acromegaly if present in abnormally high concentrations in an adult?
    A) growth hormone
    B) antidiuretic hormone
    C) gonadotropic hormones
    D) thyroid-stimulating hormone
    E) adrenocorticotropic hormone

    Answer: A

27. The controlling or master gland(s) of the body is(are) the

A) adrenal medulla and cortex.
B) testes and ovaries.
C) hypothalamus and anterior pituitary.
D) pancreas.
E) thyroid and parathyroid.

Answer: C

28. Which is most involved in milk production?
A) oxytocin
B) progesterone
C) prolactin
D) estrogen
E) calcitonin

Answer: C

29. Too much urine indicates too
A) little ADH.
B) much ADH.
C) little ACTH.
D) much ACTH.
E) much insulin.

Answer: A

30. Which of the following is a gonadotropic hormone?
A) FSH
B) ADH
C) cortisol
D) testosterone
E) thyroxin

Answer: A

31. The condition that results when there is an increased production of human growth hormone in an adult is termed
A) Cushing's syndrome.
B) Addison's disease.
C) gigantism.
D) dwarfism.
E) acromegaly.

Answer: E

32. Which hormone will stimulate the release of milk from the mother's mammary glands when a baby is nursing?

A) oxytocin
B) prolactin
C) ADH
D) HGH
E) epinephrine

Answer: A

33. Which of the following hormones require iodine?
    A) thyroxin
    B) aldosterone
    C) parathyroid hormone
    D) insulin
    E) cortisol

    Answer: A

34. Simple goiter can be prevented by
    A) surgery to remove the thyroid gland.
    B) removal of the pituitary.
    C) administration of ACTH.
    D) administration of insulin.
    E) increasing intake of iodine in the diet.

    Answer: E

35. Which of the following hormones is NOT correctly matched with its description?
    A) thymosin--aids in production of T cells
    B) thyroxin--needed for growth and development in vertebrates
    C) parathyroid hormone--increases level of calcium ions in blood
    D) cortisol--lowers blood glucose level by removing glucose into tissues
    E) epinephrine--released by the adrenal medulla under stressful conditions

    Answer: D

36. Which is NOT a correct consequence of surgical removal of portions of these glands?
    A) adrenal cortex--bronzing of skin, no glucose at stress, dehydration and death
    B) thymus--decrease in sex drive and changes in secondary sexual characteristics
    C) parathyroid glands--drop in blood calcium level and tetany (muscles shake)
    D) ovaries--alteration in menstrual cycle and change in secondary sex characteristics
    E) adult thyroid--low pulse rate and body temperature and lethargy

    Answer: B

37. Which statement is NOT correct about PTH?
    A) When calcium level rises, PTH secretion is inhibited.
    B) When calcium level lowers, PTH secretion is stimulated.
    C) PTH has the opposite effect of calcitonin.
    D) PTH stimulates calcium absorption from the gut.
    E) PTH decreases the activity of osteoclasts.

    Answer: E

38. Weakened bones can result from an over-secretion of the

A) thyroid gland.
B) adrenal gland.
C) pancreas.
D) parathyroid gland.
E) pituitary.

Answer: D

39. The adrenal glands
A) are located near the thyroid gland.
B) are located near the kidneys.
C) are regulated by the posterior pituitary.
D) are regulated by the pancreas.
E) can be removed without ill effects.

Answer: B

40. What is the cascade of events that follows a stress or trauma to produce adrenal reaction?
A) hypothalamus (ACTH-releasing hormone)-anterior pituitary (ACTH)-adrenal cortex mineralocorticoids and glucocorticoids (regulate metabolism and sugar level)
B) hypothalamus (ACTH-releasing hormone)-anterior pituitary (ACTH)-adrenal cortex epinephrine and norepinephrine (regulate metabolism and sugar level)
C) anterior pituitary (ACTH)-hypothalamus (ACTH-releasing hormone)-adrenal cortex hormones
D) adrenal cortex (hormones)-anterior pituitary (ACTH)-hypothalamus (ACTH-releasing hormone)
E) adrenal cortex (hormones)-hypothalamus (ACTH-releasing hormone)-anterior pituitary (ACTH)

Answer: A

41. Which endocrine organ acts like the postganglionic neurons of the sympathetic nervous system?
A) thyroid gland
B) thymus gland
C) adrenal cortex
D) adrenal medulla
E) islets of Langerhans of the pancreas

Answer: D

42. Which of the following hormones will allow us to react to emergency situations?
A) estrogen
B) progesterone
C) testosterone
D) cortisol
E) norepinephrine

Answer: E

43. Which disease results when the adrenal cortex produces too much hormone?
A) diabetes insipidus

B) diabetes mellitus
C) Cushing's syndrome
D) Addison's disease
E) myxedema

Answer: C

44. A woman with a beard most likely has a malfunctioning
A) pancreas.
B) pituitary.
C) adrenal cortex.
D) adrenal medulla.
E) thyroid.

Answer: C

45. Cortisol is released from the
A) adrenal medulla.
B) adrenal cortex.
C) thyroid.
D) parathyroid.
E) posterior pituitary.

Answer: B

46. Which of the following hormones is considered a glucocorticoid?
A) aldosterone
B) insulin
C) thyroxin
D) cortisol
E) parathyroid hormone

Answer: D

47. The level of sodium in the blood is regulated by the secretion of
A) oxytocin.
B) insulin.
C) cortisol.
D) aldosterone.
E) ACTH.

Answer: D

48. Which of the following glands has both an endocrine and an exocrine function?
A) mammary gland
B) pancreas
C) pituitary

D) adrenal gland
E) thyroid gland

Answer: B

49. Which hormone will increase blood glucose levels?
A) thyroxin
B) aldosterone
C) cortisol
D) insulin
E) calcitonin

Answer: C

50. Which of the following symptoms is NOT characteristic of diabetes mellitus?
A) cells unable to take up glucose
B) increased breakdown of fats and protein
C) frequent urination
D) sugar in the urine
E) bronzing of the skin

Answer: E

51. Which hormone will decrease blood glucose levels?
A) thyroxin
B) aldosterone
C) cortisol
D) insulin
E) glucagon

Answer: D

52. Which pair of hormones has opposite, antagonistic effects?
A) insulin--glucagon
B) insulin--progesterone
C) estrogen--thyroxin
D) thyroxin--parathyroid hormone
E) epinephrine--norepinephrine

Answer: A

53. Which of the following statements is NOT true about diabetes mellitus?
A) Type II diabetes is much more common than type I.
B) Insulin injections are required in both type I and type II diabetes.
C) Type I diabetes occurs as a result of destruction of the insulin-producing cells.
D) One method of treating type II diabetes is exercise and a low-fat, low-sugar diet.
E) Symptoms of diabetes include excessive thirst, frequent urination, and glucose in the urine.

Answer: B

54. Which gland will produce melatonin?
    A) pancreas
    B) pineal gland
    C) adrenal gland
    D) thyroid gland
    E) pituitary

    Answer: B

55. Which is an effect of the hormone estrogen?
    A) accumulation of a fat layer beneath the skin
    B) pelvic girdle grows wider
    C) breast development
    D) egg maturation and menstrual cycle control
    E) All of the choices are estrogen effects.

    Answer: E

56. Which is NOT a correct association of tissues and hormones or functions?
    A) adipose tissue--leptin to regulate a feeling of fullness
    B) thymus--use of iodine to make thyroxine for regulation of body growth
    C) pineal gland--production of melatonin and involvement in seasonal affective disorder
    D) pancreas--insulin for regulation of blood glucose levels
    E) pancreas--glucagon for regulation of blood glucose levels

    Answer: B

57. The endocrine system as a whole
    A) coordinates body functions by use of chemical signals called hormones.
    B) is slower acting than the nervous system.
    C) controls whole body processes such as growth and reproduction.
    D) has an effect that is longer acting than that of the nervous system.
    E) All of the choices are true of the nervous system.

    Answer: E

Department of Zoology
B.Sc. V Semester
Ecology (Paper No XVII)
Multiple Choice Question

1. Autecology deals with:
a. **Study of individual organism**
b. Study of group of organisms
c. Study of autotrophs
d. Study of heterotrophs

2. Largest terrestrial ecological unit is called
a. Forest
b. Desert
c. Biome
d. **Tundra**

3. World environment day is celebrated on:
a. 22nd March
b. **5th June**
c. 1st December
d. 16th September

4. Study of freshwater habitat is
a. Lithology
b. **Hydrology**
c. Pedology
d. Limnology

5. Nektons are:
a. **Free swimming organisms**
b. Non- swimming, free floating organisms
c. Sedentary organisms
d. Flying organisms

6. The following are green house gases
a. **Methane, carbon dioxide, carbon monoxide**
b. Methane, water vapour, carbon sulphide
c. Carbon dioxide, hydrogen sulphide, hydrogen cyanide

d. Carbon dioxide, Carbon monoxide, hydrogen cyanide

7. IPCC stands for:
a. Indian Penal and Criminal Code
b. International Peoples Consortium for Climate Change
c. **Intergovernmental Panel for Climate Change**
d. International Panel for Climate Change

8. Rio Earth summit was held in:
a. 1972
b. 1982
c. **1992**
d. 2002

9. Which is a non conventional energy resource?
a. Wind energy
b. Tidal energy
c. Solar energy
d. **All the above**

10. PET stands for
a. Poly Ethylene Toludine
b. **Poly Ethylene Terephthalate**
c. Ply Ester Terlene
d. None of the above

11. The following is not a Ramsar site
a. Vembanad lake
b. Sasthamkotta lake
c. **Ashtamudi lake**
d. Periyar lake

12. Epicentre is
a. Centre point of the earth
b. **Origin of a earthquake**
c. Origin of a tornado d. Path of the satelli

13. The term Landscape stands for
a. **A group of interacting ecosystems**
b. Independent units of the biosphere
c. Different ecosystems
d. Terrestrial ecosystem

14. Name the predominant light capturing molecules in plants
a, Anthocyanin
b. **Chlorophyll**
c. Myosin
d. Erythrocyanin

15. The percentage of oxygen in the atmosphere
a.18.5%
b.15.0%
c.22.4%
d.**20.94%**

16. Limnology is the study of
a. **Oceans**
b. Deserts
c. Mountains
d. Freshwater

17. The population of India as per 2001 census
a.105.84crore
b.115.52crore
c. **102.70 crore.**
d.107.30crore

18. The author of *Ecological Imperialism*
a. Arthur Conan Doyle
b. Charles Dickens
c. Noam Chomsky
d. **A.W. Crosby**

19. Number of biodiversity hotspots in the world
a.12
b.**25**
c.34
d.28

20. International day for the preservation of Ozone layer
a..**16 September**
b. 21 September
c. 15 October
D.16 November

21. The Kyoto Protocol is for
a**. limiting Green house gases**
b. Ozone depleting substance
c. Reducing acid rain
d. None of the above

22. Who proposed the idea of Deep Ecology?
a. Native Americans
b. **Thoreau**
c. Arne Ness
d. Vandana Shiva

23. The Earth summit 1992 is popularly known as
a. **Tokyo summit**
b. Rio Summit
c. New Delhi Summit
d. Johannesburg Summit

24. The “Wild life Protection Act” was enacted in
a.1986
b.1972
c.**2002**
d.2004

25. WCED stands for
a. World Council of Ecology and Development
b. World Committee for Economic Development
c. World Center for Economy and Deregulation
d. **World Commission on Environment and Development**

26.Wave length of light between 390 to 700 is called

a)Cosmic ray b**) Visible light** c) Non visible light d) Infra red light

27) Poikilotherms are those animals

a) hot blooded b) Endotherm c)**Cold blooded** d) Microtherm

28) Organisms can modify their response to an environmental stress is called

a) Dormancy b) **adaptation** c) behavior d) isolation

Department of Zoology
B.Sc. V Semester
Parasitic Protozoa – I (Paper No XVIII)
Multiple Choice Question

1. The causative organism of sleeping sickness fever
a) Leishmania **b) Trypanosoma** c) Amoeba d) Entamoeba

2. Name the rectal ciliate
a) Paramecium b) Plasmodium **c) Opalina** d) None

4. Which of the following is an arachnid ectoparasite?
a) Spider b) Scorpion c) Daphnia d) **Tick**

5. The function of contractile vacuole
a) Nutrition b) Reproduction **c) Osmoregulation** d) Locomotion

6. Malaria is transmitted through
a) Female culex mosquito **b) Female anopheles mosquito** c) Female aedes mosquito d) All of above

07. Chikungunya is a
a) Bacterial disease **b) Viral disease** c) Fungal infection d) None of the above

08. Name the pathogen responsible for malaria
a) Entamoeba **b) Plasmodium** c) Nosema d) Opalina

09. Give the phylum to which Trypanosoma belongs to
a) Kinetoplasma b) Ciliophora c) Apicomplexia d) Rhizopoda

10. Slipper animalcule
a) Euglena **b) Paramecium** c) Opalina d) Amoeba

11. ---------- is the intermediate host in Malarial infection
(a) Man **(b) Mosquito** (c) Pig (d) Snail
12. Eimeria tenella cause a disease called ----------.
a) dysentery b) typhyoid c) dengue **d) Faecal coccidiosis**

13. Trichomonas vaginalis is transmitted through
a) water b) light c) **sexual contact** c) none of these

14. Giardia intestinalis are in found in
a) kidney b) spleen **c) duodenum** d) All of above

15. Intermediate host of Trypanosoam gambiense
a) tsetse fly b) female anopheles c) male anopheles d) all of above

16. How many species of plasmodium caused malaria?
a) 2 b) 6 **c) 4** d) 11

17. How many stages in B. coli have?
a) trophozoite b) cystic **c) trophozoite & cystic** d) none

18. What is Trypanosoma?
a) protozoa b) bacteria c) fungi d) helminth

19. Malaria can be treated by
a) choloroquine b) mefloquine c) primaquine **d) All of these**

20. How many types of plasmodium species are
a) 1 b) 6 c) 3 d) **4**

Department of Zoology
B.Sc. VI Semester
Evolution (Paper No XXI)
Multiple Choice Question

1. Red Data Book is published by
a. **IUCN**
b. WHO
c. UNEP
d. UNESCO

2. Golden age of reptiles
a. Coenozoic era
b. Archaeozoic era
c. **Mesozoic era**
d. Palaeozoic era

3. Theory of panspermia is proposed by
a. Aristotle
b. Oparin and Haldane
c. Richter and Arrhenius
d. **None of the above**

4. Life originated first in the primitive oceans. The evidences supporting this view
a. Protoplasm and body fluids of all animals contain salt
b. Moist simpler and lower animals are aquatic and marine
c. Fossils of earliest animals obtained from rocks of marine origin
d. **All the above**

5. The colloidal particles of organic materials formed in the primitive oceans are called
a. **Coacervates**
b. Protoplasm
c. Cytoplasm
d. Nucleic acid

6. The theory of inheritance of acquired characters are proposed by
a. J.B. Lamarck
b**. Charles Darwin**
c. Gregor Mendel
d. Hugo De vries

7. Who proposed mutation theory
a. J.B. Lamarck
b. Charles Darwin
c. **Hugo de vries**
d. Mendel

8. Mammals originated during
a. **coenozoic era**
b. Paleozoic era
c. Archaeozoic era
d. None of the above

9. Carbon dating method was developed by
a. **Willard Libby**
b. Bolt Wood
c. Simpson
d. Mayer

10. The major phenomenon responsible for micro evolution and mega evolution
a. Genetic drift
b. Adaptative radiation
c. **Natural selection**
d. None of the above
11. Germplasm theory was put forward by
a) **Ernest Haeckal** b) Weismann c) Chapmann d) Friedrich wolff

12. Who proposed mutation theory
a. J.B. Lamarck
b. Charles Darwin
c. **Hugo de vries**
d. Mendel

13. Mammals originated during
a. coenozoic era
b. Paleozoic era
c. Archaeozoic era
d. None of the above

14. The major phenomenon responsible for micro evolution and mega evolution
a. Genetic drift
b. Adaptative radiation
c. **Natural selection**
d. None of the above

15. In which epoch Man appeared on earth?
a. Oligocene
b. Miocene
c. **Pleistocene**
d. Pliocene

16. The scientific name of Man is
a. *Homo habilis*
b. *Homo intelligensis*
c. *Homo erectus*
d. ***Homo sapiens***

17.Erasmus Darwin was
a) darwins father b) **Grand father of Darwin**
c)uncle of Darwin d) Cousin of Darwin

18) pharyngeal gill slits in embryonic stage is a
a) Anatomical evidence b) morphological evidence
c) **Embryological evidence** d) fossil evidence

19) who was proposed the theory of sexual selection
a)**Charles Darwin** b) Lamarck c) De varies d) Hackle

20) Evolution below species level is
a) Mega evolution b) Macro evolution
c) **Micro evolution** d) Non of these

Department of Zoology
B.Sc. VI Semester
Multiple Choice Question
Parasitic Helminths-II (Paper No XXII)

Multiple Choice Questions

1. How many types of cestodes are known
a) 2 b) 5 c) 4 c) d) 6

2. Common name of T. saginata
a) tape worm b) **beef tape worm** c) rounded worm d) none

3. Cysticerus live for eight month in the muscles of ---
a) dog b) cat c**) cattle** d) all

4. Name of minute tape worm
a) taneia solium b) taneia saginata c) **E. granulossus**) all of above

5. Mention the class of Echinococcus
a) **Cestoda** b) Trematoda c) Turbularia d) Nematodes

6. Liver rot is caused by
a) Ascaris b**) Fasciola** c) Planaria d) Bipalium

7. Taenia belongs to class
a) **Cestoda** b) Nematoda c) Trematoda d) Turbellaria

8. Vector of filariasis
a) Anopheles b) **Culex** c) Tse-tse fly d) Mites

9. Example of a digenetic parasite
a) Entamoeba b) Enterobium c) Planaria d) **schistosoma**

10. The infective stage to humans in schistosomiasis is
(a) the adult (b) **miracidum** (c) Sporocyst (d) cercaria

11. Miracidium is the larva of ---
a) **schistosoma** b) entamoeba c) anopheles d) none

12. Ancylostoma duodenale called
a**) hook worm** b) flat worm c) both a & b d) None

13. what is the common name of E. vermicularis
a) **pin worm** b) seat worm c) both a & b d) all of above

14. Female ascaris liberating about ----------eggs daily.
a) 30000 b) 500000 c) **200,000** d)900

15. Wucheria are found in ----------
a**) lymphatics vessel and lymph nodes** b) Somatic cell c) both a and b d) none

16. Hydatid cyst develop ----------
a) brood capsule b) solices c) **oncosphere** d) none

17. Taenia solium is called
a) beef worm b) **pork worm** c) dog worm d) all

18. Cysticerus can live for eight month in the --------- of cattle
a**) muscle** b) eggs c) both a and b d) all of these

19. .S.haematobium called—
a) **blood fluke** b) parasites c) intestinal fluke d) all

20.Ancylostoma duodenale known as
a) pork worm b) pin worm c**) hook worm** d) all of these