

## Chapter 14

### 1. Respiratory surface should be:

- (a) Permeable
- (b) Thin
- (c) Richly supplied with blood vessels
- (d) All the above

**Correct Answer: (d) All the above**

### 2. Each molecule of hemoglobin has the capacity to carry \_\_\_\_ molecules of $O_2$ :

- (a) 4
- (b) 8
- (c) 6
- (d) 2

**Correct Answer: (a) 4**

### 3. If the digestive & respiratory tracts were completely separate in humans, there would be no need for:

- (a) Swallowing
- (b) External nares
- (c) An epiglottis
- (d) A diaphragm

**Correct Answer: (c) An epiglottis**

### 4. In humans, the respiratory center:

- (a) Is stimulated by carbon dioxide
- (b) Is located in the medulla oblongata
- (c) Controls the rate of breathing
- (d) All of these

**Correct Answer: (d) All of these**

### 5. Carbon dioxide is carried in the plasma:

- (a) In combination with hemoglobin
- (b) As the bicarbonate ion
- (c) Combined with carbonic anhydrase

(d) All of these

**Correct Answer: (b)** As the bicarbonate ion

**6. Respiration is:**

(a) Anabolic process

(b) Physical process

(c) Catabolic process

(d) Biophysical process

**Correct Answer: (c)** Catabolic process

**7. Which of the following is the first branching of the bronchial tree that has gas exchanging capabilities?**

(a) Terminal bronchioles

(b) Respiratory bronchioles

(c) Alveoli

(d) Segmental bronchi

**Correct Answer: (b)** Respiratory bronchioles

**8. Binding of oxygen to hemoglobin increases when:**

(a) CO<sub>2</sub> concentration rises

(b) pH rises

(c) Temperature increases

(d) H<sup>+</sup> concentration decreases

**Correct Answer: (d)** H<sup>+</sup> concentration decreases

**9. Lowering of diaphragm results in:**

(a) Inspiration

(b) Expiration

(c) It is not related to either

(d) Digestion

**Correct Answer: (a)** Inspiration

**10. Production of sound in man is due to the presence of:**

- (a) Cartilage rings
- (b) Cilia
- (c) Goblet cells
- (d) Vocal cords

**Correct Answer: (d) Vocal cords**

**11. Breakdown of alveoli is:**

- (a) Emphysema
- (b) Asthma
- (c) Bronchitis
- (d) Pneumonia

**Correct Answer: (a) Emphysema**

**12. Inflammation of bronchi & narrowing of air passage occurs in:**

- (a) Asthma
- (b) Pneumonia
- (c) Emphysema
- (d) Bronchitis

**Correct Answer: (a) Asthma**

**13. Infection of lungs is called as:**

- (a) Asthma
- (b) Pneumonia
- (c) Emphysema
- (d) Bronchitis

**Correct Answer: (b) Pneumonia**

• When the human blood leaves the capillary bed of the tissue, most of the carbon dioxide is in the form of:

- (A) Carbonic acid
- (B) Bicarbonate ions
- (C) Carboxylic acid
- (D) None of them

**Correct Answer: (B) Bicarbonate ions**

- Oxygen carrying capacity of blood does not depend upon:

(A) Partial pressure of  $\text{CO}_2$   
(B) Partial pressure of  $\text{O}_2$   
(C) Height from sea level  
(D) Quantity of blood

**Correct Answer:** (D) Quantity of blood

- When hemoglobin of the blood is fully saturated with oxygen, the 100 cc of blood contains:

(A) 15 cc of oxygen  
(B) 20 cc of oxygen  
(C) 25 cc of oxygen  
(D) 10 cc of oxygen

**Correct Answer:** (B) 20 cc of oxygen

- Hemoglobin in man increases the oxygen carrying capacity of the blood to about:

(A) 75 times  
(B) 50 times  
(C) 60 times  
(D) 100 times

**Correct Answer:** (A) 75 times

- Plasma proteins are involved in the release of  $\text{CO}_2$ :

(A) 70%  
(B) 7%  
(C) 60%  
(D) 20%

**Correct Answer:** (B) 7%

- Structure, which closes the passage to lungs when food is coming, is called:

(A) Glottis  
(B) Epiglottis  
(C) Uvula

(D) Pharynx

**Correct Answer: (B) Epiglottis**

- Myoglobin loses oxygen at:

(A) 60 mm Hg  
(B) 19.6 mm Hg  
(C) 90 mm Hg  
(D) 20 mm Hg

**Correct Answer: (D) 20 mm Hg**

- The percentage of CO<sub>2</sub> carried in the form of bicarbonate is:

(A) 85%  
(B) 60%  
(C) 70%  
(D) 65%

**Correct Answer: (C) 70%**

- Each molecule of myoglobin combines with one molecule of:

(A) Oxygen  
(B) Carbon dioxide  
(C) Nitrogen  
(D) Sulphur

**Correct Answer: (A) Oxygen**

- In human, respiratory pigment is:

(A) Haemocyanin  
(B) Haemoerythrin  
(C) Chlorocruorin  
(D) Haemoglobin

**Correct Answer: (D) Haemoglobin**

- The residual volume of air in human lung is:

(A) 2.5 liter

- (B) 5.0 liter
- (C) 1.5 liter
- (D) 3.0 liter

**Correct Answer: (D) 3.0 liter**

- Chemotherapy and radiotherapy may help in the treatment of:

- (A) Flu
- (B) Emphysema
- (C) Lung cancer
- (D) Asthma

**Correct Answer: (C) Lung cancer**

- Mycobacterium tubercle causes:

- (A) Emphysema
- (B) Sinusitis
- (C) Pneumonia
- (D) Pulmonary tuberculosis

**Correct Answer: (D) Pulmonary tuberculosis**

## **CHAPTER 15**

### **1. Which Structure Increases The Reabsorption Of $\text{Na}^+$ When Stimulated By Aldosterone?**

- (a) Loop Of Henle
- (b) Collecting Duct
- (c) Bowman's Capsule
- (d) Proximal Tubule

**Correct Answer: (a) Loop Of Henle**

### **2. Which Of the Following Would Contain Blood in A Normally Functioning Nephron?**

- (a) Vasa Recta
- (b) Proximal Tubule
- (c) Bowman's Capsule
- (d) Loop Of Henle

**Correct Answer:** (a) Vasa Recta

**3. What Substance Is Secreted by The Proximal-Tubule Cells and Prevents The pH Of Urine from Becoming Too Acidic?**

- (a) Bicarbonate
- (b) Salt
- (c) Glucose
- (d) Ammonia

**Correct Answer:** (a) Bicarbonate

**4. Which Structure Passes Urine to The Renal Pelvis?**

- (a) Loop Of Henle
- (b) Collecting Duct
- (c) Bowman's Capsule
- (d) Proximal Tubule

**Correct Answer:** (b) Collecting Duct

**5. Identify which is not isotonic.**

- (a) Octopus
- (b) Sea cucumber
- (c) Hag fish
- (d) None

**Correct Answer:** (d) None

**6. Identify organism which does not produce uric acid as major excretory product.**

- (a) Birds

- (b) Reptiles
- (c) Snail
- (d) Fish

**Correct Answer:** (d) Fish

**7. Detoxification in liver means**

- (a) Of food additive
- (b) Of drug
- (c) Of  $\text{NH}_3$
- (d) All

**Correct Answer:** (d) All

**8. The average weight of kidney according to body weight is**

- (a) 1%
- (b) 3%
- (c) 5%
- (d) 6%

**Correct Answer:** (a) 1%

**9. Afferent arteriole forms from**

- (a) Renal artery
- (b) Glomerular capillaries
- (c) Vasa recta
- (d) None of these

**Correct Answer:** (a) None of These

**10. Which part do not absorb water?**

- (a) Loop of Henle
- (b) Proximal part



- (c) Collecting duct
- (d) All

**Correct Answer:** (d) All

**11. Heat shock proteins activated at**

- (a) 40°C
- (b) 35°C
- (c) 25°C
- (d) 40°C

**Correct Answer:** (a) 40°C

**12. Which one is homeotherm?**

- (a) Fish
- (b) Crocodile
- (c) Snake
- (d) Bird

**Correct Answer:** (d) Bird

**13. Plumage fluffing is common in**

- (a) Birds
- (b) Human
- (c) Reptiles
- (d) Amphibians

**Correct Answer:** (a) Birds

Here is the rewritten version of your MCQs starting from number **14** with the correct answers indicated beneath each question:

**14. The wall of the trachea (windpipe) and bronchi in humans is furnished with a series of incomplete:**

- (A) Cartilaginous plates
- (B) Cartilaginous rings
- (C) Chitinous rings
- (D) Muscular rings

**Correct Answer: (B) Cartilaginous rings**

**15. What does *not* happen during inspiration in humans?**

- (A) Intercostal muscles contract
- (B) Ribs are elevated
- (C) Diaphragm becomes dome-shaped
- (D) Ribs move forwards

**Correct Answer: (C) Diaphragm becomes dome-shaped**

**16. The lateral walls of the chest cavity in humans are composed of:**

- (A) Ribs
- (B) Intercostal muscles
- (C) Ribs & Intercostal muscles
- (D) Ribs, Intercostal muscles & diaphragm

**Correct Answer: (D) Ribs, Intercostal muscles & diaphragm**

**17. Pleura is a double-layered thin membrane that covers the:**

- (A) Heart
- (B) Liver
- (C) Kidney
- (D) Lungs

**Correct Answer: (D) Lungs**

**18. Breathing is an example of:**

- (A) Diffusion
- (B) Osmosis
- (C) Ventilation
- (D) Cellular respiration

**Correct Answer: (C) Ventilatio**

**19. The structure which prevents the entry of food into the windpipe is called:**

- (A) Glottis
- (B) Epiglottis
- (C) Tongue
- (D) Soft palate

**Correct Answer: (B) Epiglottis**

**20. Which one of the following lacks cartilage?**

- (A) Trachea
- (B) Bronchioles
- (C) Bronchi
- (D) Larynx

**Correct Answer: (B) Bronchioles**

**21. The pleural fluid surrounds the:**

- (A) Liver
- (B) Kidneys
- (C) Heart
- (D) Lungs

**Correct Answer: (D) Lungs**

**22. Which sequence of organs is correct in the air passageway of humans?**

- (A) Nasal cavities → Larynx → Pharynx → Trachea → Larynx → Bronchi
- (B) Nasal cavities → Pharynx → Trachea → Larynx → Bronchi
- (C) Nasal cavities → Pharynx → Larynx → Bronchi → Trachea → Bronchi
- (D) Nasal cavities → Pharynx → Larynx → Trachea → Bronchi

**Correct Answer: (D) Nasal cavities → Pharynx → Larynx → Trachea → Bronchi**

**23. Which part of the air passageway possesses cartilage plates in its wall?**

- (A) Bronchioles
- (B) Distal region of bronchi
- (C) Proximal region of bronchi
- (D) Trachea

**Correct Answer: (B) Distal region of bronchi**

**24. Human lungs are spongy due to the presence of millions of:**

- (A) Bronchi
- (B) Alveoli
- (C) Bronchioles
- (D) Trachea

**Correct Answer: (B) Alveoli**

**25. Which event is *not* associated with the activity of expiration?**

- (A) Contraction of diaphragm
- (B) More dome-like shape of diaphragm
- (C) Backward & downward movement of rib cage
- (D) Relaxation of intercostal muscles

**Correct Answer: (A) Contraction of diaphragm.**



## **CHAPTER 16**

### **1. What Makes Bones Strong?**

- (a) Silica
- (b) Cartilage
- (c) Blood & Marrow
- (d) Calcium & Phosphorus

**Correct Answer:** (d) Calcium & Phosphorus

### **2. When A Bone Is Injured, the\_\_\_\_\_ Cells from The Periosteum Will Repair the Bone or Rebuild the Bone.**

- (a) Osteoblast
- (b) Osteoclast
- (c) Osteocytes
- (d) All

**Correct Answer:** (a) Osteoblast

### **3. Which Of the Following Facial Bones Is Not a Paired Bone?**

- (a) Mandible

- (b) Maxilla
- (c) Nasal
- (d) Vomer

**Correct Answer:** (a) Maxilla

**4. The Coccyx Is The "Tail Bone." It Is Typically Made of \_\_\_\_\_ Fused Vertebrae.**

- (a) 3
- (b) 5
- (c) 4
- (d) 6

**Correct Answer:** (c) 4

**5. The Pelvic Girdle Consists of Which of The Following Bones?**

- (a) Coxal
- (b) Coxal Bones Leg Bones
- (c) Coal Bones and Leg, and foot
- (d) All of these

**Correct Answer:** (a) Coxal

**6. All Synovial Joints Are**

- (a) Immovable
- (b) Freely Moveable
- (c) Slightly Moveable
- (d) Immovable

**Correct Answer:** (b) Freely Moveable

**7. Together The Clavicle and Scapula Bones Form The:**

- (a) Shoulder Blade
- (b) Pelvic Girdle
- (c) Pectoral Girdle
- (d) Pelvis

**Correct Answer:** (c) Pectoral Girdle

**8. The Increase in Porosity of Bones Is Called**

- (a) Osteoporosis
- (b) Arthritis
- (c) Sciatica
- (d) Spondylosis

**Correct Answer:** (a) Osteoporosis

**9. Narrowing Of the Space Between the Two Vertebrae Is Called**

- (a) Osteoporosis
- (b) Spondylosis
- (c) Disc Slip
- (d) Rickets

**Correct Answer:** (c) Disk Slip

**10. The Cross Bridges Involved in Muscle Contraction Are Located In**

- (a) Myosin Myofilaments
- (b) Actin Myofilaments
- (c) Tropomyosin

- (d) Dystrophin

**Correct Answer:** (a) Myosin Myofilaments

**11. Which Is the Smallest Unit of Contraction in Muscle Fiber?**

- (a) Sarcomere
- (b) Sarcolmma
- (c) Sarcoplasm
- (d) Sarcofilament

**Correct Answer:** (a) Sarcomere

**12. Muscles Attached to Bones By**

- (a) Other Muscles
- (b) Tendons
- (c) Insertion Couplers
- (d) Ligamnets

**Correct Answer:** (b) Ligamnets

**13. The End of Muscle That Is Attached to The Bone That Moves**

- (a) Ligament
- (b) Proximal
- (c) Origin
- (d) Insertion

**Correct Answer:** (d) Insertion

**14. Contraction Of Muscle Due to Electrolyte Imbalance Is Called**

- (a) Tetany



- (b) Cramps
- (c) Spasm
- (d) Ganong's Tone

**Correct Answer:** (b) Cramps

• **Which of the following is not present in the filtrate in the distillable of a nephron?**

- (A) Blood cells
- (B) Blood clot
- (C) Water
- (D) Glucose

**Correct answer:** (A) Blood cells

• **Body temperature is regulated by:**

- (A) Sweating and less urination
- (B) Less sweating and less urination
- (C) Endotherm
- (D) Both a and b

**Correct answer:** (D) Both a and b

• **Which hormone is secreted by the adrenal medulla?**

- (A) Adrenaline
- (B) Thyroxine
- (C) Insulin
- (D) Growth hormone

**Correct answer:** (A) Adrenaline

• **In case of overheating, the body primarily regulates by absorbing heat from surroundings is known as:**

- (A) Endotherm
- (B) Exothermic

- (C) Hyperthermia
- (D) Hypothermia

**Correct answer:** (A) Endotherm

• **An animal that warms itself primarily by absorbing heat from its surroundings is:**

- (A) Endothermic
- (B) Ectothermic
- (C) Thermoregulator
- (D) Homothermic

**Correct answer:** (B) Ectothermic

• **The salt secreting glands in some marine fishes are called:**

- (A) Sebaceous glands
- (B) Sweat glands
- (C) Rectal glands
- (D) Tear glands

**Correct answer:** (C) Rectal glands

• **The chief nitrogenous waste of fresh water and terrestrial animals is:**

- (A) Urea
- (B) Ammonia
- (C) Uric acid
- (D) Creatinine

**Correct answer:** (A) Urea

• **The useful substances are reabsorbed from:**

- (A) Renal tubule
- (B) Renal capsule
- (C) Collecting duct

- (D) Vasa recta

**Correct answer:** (A) Renal tubule

- **Ureters are less affected as compared to other urinary tract infections due to:**

- (A) Large surface area
- (B) Less acidic
- (C) Narrow tube
- (D) More acidic

**Correct answer:** (A) Large surface area

- **The drug given to prevent kidney rejection is:**

- (A) Cyclosporine
- (B) Penicillin
- (C) Painkillers
- (D) Antibiotics

**Correct answer:** (A) Cyclosporine

- **The cardiac muscle cells are:**

- (A) Uninucleated
- (B) Polynucleated
- (C) Dinucleated
- (D) Non-nucleated

• **Correct Answer:** (A) Uninucleated

- **The end of muscle attached with moveable bone is called:**

- (A) Origin
- (B) Flexing of muscle
- (C) Insertion of muscle
- (D) Belly of muscle

• **Correct Answer:** (C) Insertion of muscle

- **The diameter of actin protein filament is about:**

- (A) 16nm
- (B) 7nm
- (C) 6cm
- (D) 7nm

- **Correct Answer:** (B) 7nm

- **The infolding muscle fibre membrane is called:**

- (A) Sarcoplasmic reticulum
- (B) Z-line
- (C) Dark band
- (D) T-tubules

- **Correct Answer:** (D) T-tubules

- **Which ions are required for muscle contraction?**

- (A) Sodium
- (B) Potassium
- (C) Calcium
- (D) Magnesium

- **Correct Answer:** (C) Calcium

- **In skeletal muscle, calcium facilitates contraction by binding to:**

- (A) Tropomyosin
- (B) Actin
- (C) Troponin
- (D) Myosin

- **Correct Answer:** (C) Troponin

- **Which of the following statements concerning the role of  $\text{Ca}^{2+}$  in the contraction of skeletal muscle is correct?**

- (A) The mitochondria acts as a store of  $\text{Ca}^{2+}$  for the contractile process
- (B)  $\text{Ca}^{2+}$  entry across the plasma membrane is important in sustaining the contraction of skeletal muscle
- (C) A rise in intracellular  $\text{Ca}^{2+}$  allows actin to interact with myosin
- (D) The tension of a skeletal muscle fibre is partly regulated by G proteins in muscle
- **Correct Answer:** (C) A rise in intracellular  $\text{Ca}^{2+}$  allows actin to interact with myosin
- **The function of the T tubules in muscle contraction is to:**
- (A) Make and store glycogen
- (B) Release  $\text{Ca}^{2+}$  into the cell interior and then pick it up again
- (C) Make the action potential deep into the muscle cells
- (D) To hamper the nerve impulse
- **Correct Answer:** (C) Make the action potential deep into the muscle cells
- **The sites where the motor nerve impulse is transmitted from the nerve endings to the skeletal muscle cell membranes are:**
- (A) Neuromuscular junctions
- (B) Sarcomeres
- (C) Myofilaments
- (D) Z discs
- **Correct Answer:** (A) Neuromuscular junctions
- **Myoglobin has a special function in muscle tissue:**
- (A) It breaks down glycogen
- (B) It is a contractile protein
- (C) It holds a reserve supply of oxygen in the muscle
- (D) None of these
- **Correct Answer:** (C) It holds a reserve supply of oxygen in the muscle

## **CHAPTER 17**

### **1. The Part of a Neuron That Sends Information Towards Another Cell Is The**

- (a) Glia
- (b) Soma
- (c) Dendrite
- (d) Axon

**Correct Answer:** (d) Axon

### **2. Which Is Used to Describe Normal & Abnormal Structures of the Body?**

- (a) EEG
- (b) CAT
- (c) MRI
- (d) All

**Correct Answer:** (d) All

### **3. The Protective Sheaths Around the Brain and Spinal Cord Are Called**

- (a) Myelin
- (b) Dura Mater
- (c) Meninges
- (d) CSF

**Correct Answer:** (c) Meninges

**4. A Large Groove in The Surface of The Cerebral Hemispheres Is Called A**

- (a) Ventricle
- (b) Fissure
- (c) Gyrus
- (d) Cerebral Aqueduct

**Correct Answer:** (b) Fissure

**5. The Parasympathetic and Sympathetic Nervous Systems Make Up The \_\_\_\_\_ Nervous System.**

- (a) Peripheral
- (b) Autonomic
- (c) Central
- (d) Somatic

**Correct Answer:** (b) Autonomic

**6. How Many Pairs of Cranial Nerves Are There in Humans?**

- (a) 12
- (b) 23
- (c) 31
- (d) 32

**Correct Answer:** (a) 12

**7. The Cerebellum Is Concerned With**

- (a) Coordination Of Muscular Movement
- (b) Perception
- (c) Memory
- (d) Vision

**Correct Answer:** (c) Memory

**8. The Outer Region of Spinal Cord Is**

- (a) White Matter
- (b) Grey Matter
- (c) Piameter
- (d) Durameter

**Correct Answer:** (a) White Matter

**9. The No. Of Cranial Nerves in A Mammal Including Man Is**

- (a) 12
- (b) 14
- (c) 24
- (d) 36

**Correct Answer:** (a) 12

**10. A Nerve Impulse Leaves a Neuron Via**

- (a) Axon
- (b) Cayton



- (c) Dendrites
- (d) Nucleus

**Correct Answer:** (a) Axon

**11. Reflex Action in The Body Is Controlled By**

- (a) Motor Nerves
- (b) Central Nervous System
- (c) Sympathetic Nervous System
- (d) Sensory Nerves

**Correct Answer:** (c) sympathetic Nervous System

**12. Where Are Neurotransmitter Receptors Located?**

- (a) On The Nuclear Membrane
- (b) At Nodes of Ranvier
- (c) On The Postsynaptic Membrane
- (d) In The Myelin Sheath

**Correct Answer:** (c) On the Postsynaptic Membrane

**13. The progressive brain disorder which is due to defective gene located on Chromosome 4 is.**

- (a) Multiple Sclerosis
- (b) Huntington's Disease
- (c) Parkinson's Disease
- (d) Alzheimer's Disease

**Correct Answer:** (b) Huntington's Disease

**14. For epilepsy which diagnostic test will be used?**

- (a) EEG
- (b) CAT
- (c) MRI
- (d) All

**Correct Answer:** (a) EEG

- **Brain and spinal cord together known as:**

- (A) PNS
- (B) ANS
- (C) SNS
- (D) CNS

- **Correct Answer:** (D) CNS

- **Second largest part of brain is:**

- (A) Fore brain
- (B) Cerebrum
- (C) Cerebellum
- (D) Medulla

- **Correct Answer:** (C) Cerebellum

- **The number of cranial and spinal nerves in human are:**

- (A) 24 and 62
- (B) 12 + 31
- (C) 20 + 68
- (D) 20 + 62

- **Correct Answer:** (B) 12 + 31

- **The volatile organic chemicals, once commonly referred to as "glue sniffing" are:**

- (A) Cannabis

- (B) Inhalants
- (C) Narcotics
- (D) Caffeine
- **Correct Answer:** (B) Inhalants
- **The mammalian forebrain is differentiated into the thalamus, limbic system and the:**
- (A) Cerebellum
- (B) Cerebrum
- (C) Hippocampus
- (D) Hypothalamus
- **Correct Answer:** (B) Cerebrum
- **Information back from the control center to the effectors as done by \_\_\_\_\_ nerve pathway:**
- (A) Afferent
- (B) Efferent
- (C) Both
- (D) None
- **Correct Answer:** (B) Efferent
- **The number of human spinal nerves is:**
- (A) 24
- (B) 50
- (C) 62
- (D) 64
- **Correct Answer:** (C) 62
- **The electrical potential of cell membrane of neuron when it is not transmitting any signal is called:**
- (A) Resting membrane potential

- (B) Action potential
- (C) Propagation of impulse
- (D) Synapse
- **Correct Answer:** (A) Resting membrane potential

## CHAPTER 18

### 1. The Target Tissue of ACTH is:

- (a) Thymus Gland
- (b) Medulla of the adrenal gland
- (c) Cortex of the adrenal gland
- (d) Beta cells of the pancreas

**Correct Answer:** (c) Cortex of the adrenal gland

### 2. The Hormone Responsible for Stimulating Contractions of the Uterus is Known As:

- (a) Insulin
- (b) UCH
- (c) Glucagon
- (d) Oxytocin

**Correct Answer:** (d) Oxytocin

### 3. The Thyroid Gland is Located:

- (a) Within the brain
- (b) In the lower abdominal cavity
- (c) Near the larynx
- (d) Behind the spleen

**Correct Answer:** (c) Near the larynx

**4. The Hormone Antagonistic to Insulin is:**

- (a) FSH
- (b) Glucagon
- (c) Vasopressin
- (d) Estrogen

**Correct Answer:** (b) Glucagon

**5. The Part of the Brain Controlling the Anterior Pituitary Gland Secretion is the:**

- (a) Medulla
- (b) Thalamus
- (c) Cerebral Cortex
- (d) Hypothalamus

**Correct Answer:** (d) Cerebral Cortex

**6. Which of the Following Hormones Will Allow Us to React to Emergency Situations?**

- (a) Progesterone
- (b) Testosterone
- (c) Cortisol
- (d) Norepinephrine

**Correct Answer: (c) Cortisol**

**7. Which Hormone Will Decrease Blood Glucose Levels?**

- (a) Aldosterone
- (b) Cortisol
- (c) Insulin
- (d) Glucagon

**Correct Answer: (d) Glucagon**

**8. Hormones May Consist of All the Following Except:**

- (a) Steroids
- (b) Proteins
- (c) Carbohydrates
- (d) Amines

**Correct Answer: (d) Amines**

**9. The Hormone Responsible for "Fight and Flight" Response is:**

- (a) Adrenalin
- (b) Thyroine
- (c) ADH
- (d) Oxytocin

**Correct Answer: (b) Thyroine**

**10. In Male, The Sex Hormone That Maintains Sexual Organs & Secondary Sex Characteristics is:**

- (a) Progesterone

- (b) Estrogen
- (c) Testosterone
- (d) Relaxing

**Correct Answer:** (c) Testosterone

**11. Islets of Langerhans Are Found In:**

- (a) Anterior pituitary
- (b) Kidney cortex
- (c) Spleen
- (d) Endocrine pancreas

**Correct Answer:** (d) Endocrine pancreas

**12. In Addition to Thyroxine & T3, The Thyroid Gland Produced:**

- (a) TSH
- (b) ACTH
- (c) Calcitonin
- (d) FSH

**Correct Answer:** (c) Calcitonin

**13. \_\_\_\_\_ Is Lacking in the Diet, The Thyroid Gland Enlarges, Producing a Goiter:**

- (a) Thyroxin
- (b) Iron
- (c) Iodine
- (d) Calcium

**Correct Answer:** (c) Iodine

- **Excess MSH is secreted in:**

- (A) Addison's disease
- (B) Parkinson's disease
- (C) Grave's disease
- (D) Alzheimer's disease

- **Correct Answer:** (C) Grave's disease

- **Hormones are secreted by:**

- (A) Exocrine glands
- (B) Endocrine glands
- (C) Only from liver
- (D) Only from pancreas

- **Correct Answer:** (B) Endocrine glands

- **Which one of the following condition is resulted from excess GH in adults?**

- (A) Cushing's disease
- (B) Acromegaly
- (C) Hyperthyroidism
- (D) Diabetes mellitus

- **Correct Answer:** (B) Acromegaly

- **\_\_\_\_\_ regulates the kidney's retention of water.**

- (A) Prolactin
- (B) Oxytocin
- (C) Thyroxine
- (D) Vasopressin (ADH)



- **Correct Answer:** (D) Vasopressin (ADH)
- **Which of the following hormones is not released by the anterior pituitary?**
- (A) Melanocyte-stimulating hormone
- (B) Gonadotropin-releasing hormone
- (C) Thyroid-stimulating hormone
- (D) Growth hormone
- **Correct Answer:** (B) Gonadotropin-releasing hormone

## CHAPTER 19

### 1. A Stimulus is (an):

- (a) Reaction to an external event
- (b) Reaction to an internal event
- (c) Internal or external response
- (d) Internal or external signal

**Correct Answer:** (d) Internal or external signal

**2. Young Sea Turtles Head for the Ocean Immediately After They Hatch. This Behavior is Most Likely:**

- (a) Innate
- (b) Learned through trial and error
- (c) Classically conditioned
- (d) The result of habituation

**Correct Answer:** (a) Innate

**3. Trial-and-error learning is also known as:**

- (a) Operant conditioning
- (b) Insight learning
- (c) Classical conditioning
- (d) Innate behavior

**Correct Answer:** (a) Operant conditioning

**4. The Process in Which an Animal Stops Responding to a Repetitive Stimulus is Called:**

- (a) Habituation
- (b) Classical conditioning
- (c) Operant conditioning
- (d) Instinct

**Correct Answer:** (a) Habituation

**5. Any Change in Which a Behavior is Altered as a Result of Experience is Called:**

- (a) Habituation
- (b) Operant conditioning
- (c) Innate behavior
- (d) Learning

**Correct Answer:** (d) Learning

**6. If a Dog That Barks When Indoors is Always Let Outside Immediately, It Will Learn to Bark Whenever it Wants to Go Outside. This Change in the Dog's Behavior is an Example of:**

- (a) Classical conditioning
- (b) Operant conditioning
- (c) Insight learning
- (d) Imprinting

**Correct Answer:** (a) Operant conditioning

**7. In an Experiment, Pavlov Caused a Dog to Salivate When It Heard the Ring of a Bell. Which Type of Learning Was Demonstrated by the Dog?**

- (a) Habituation
- (b) Imprinting
- (c) Conditioning
- (d) Trial and Error

**Correct Answer:** (c) Conditioning

**8. The Decrease in Response to Repeated or Continuous Stimulation is Called:**

- (a) Instinct
- (b) Maturation
- (c) Habituation
- (d) Imprinting

**Correct Answer:** (d) Habituation

**9. The Inherited Behavior is Called:**

- (a) Imprinting

- (b) Learning
- (c) Maturation
- (d) Instinct

**Correct Answer:** (d) Instinct

**10. Some Behavior Patterns Appear Only After a Specific Developmental Stage or Time. This Stage or Time is Called:**

- (a) Imprinting
- (b) Maturation
- (c) Learning
- (d) Instinct

**Correct Answer:** (b) Maturation

**11. Aquarium Fish Often Swim to the Water's Surface When a Person Approaches. Their Behavior Has Probably Formed Through:**

- (a) Instinct
- (b) Classical conditioning
- (c) Imprinting
- (d) Insight

**Correct Answer:** (b) Classical conditioning

**12. Circadian Rhythms Are Based on Approximately a:**

- (a) 2-hour period
- (b) 24-hour period
- (c) 7-day period
- (d) 30-day period

**Correct Answer:** (b) 24-hour period

**13. Non-Oriented Changes in Activity Level or Movement is Called:**

- (a) Exogenous
- (b) Taxis
- (c) Kinesis
- (d) Migration

**Correct Answer:** (c) Kinesis

**• The scientific study of everything animals do, is called:**

- (A) Pharmacology
- (B) Behaviour
- (C) Reflexes
- (D) Society

**• Correct Answer:** (B) Behaviour

**• The biorhythm, due to internal stimuli is:**

- (A) Exogenous
- (B) Diurnal
- (C) Endogenous
- (D) Crepuscular

**• Correct Answer:** (C) Endogenous

**• The movement of Euglena towards dim light is:**

- (A) Positive Taxis
- (B) Negative Taxis
- (C) Positive kinesis
- (D) Negative kinesis

- **Correct Answer:** (A) Positive Taxis
- **The useful behavior for animal with short life span is:**

- (A) Instinct
- (B) Learning
- (C) Reflex action
- (D) Stereotypic

- **Correct Answer:** (C) Reflex action

- **Inate behavior is all but:**

- (A) Heritable
- (B) Intrinsic
- (C) Flexible
- (D) Modified in individuals' life span

- **Correct Answer:** (C) Flexible

- **Inate behavior is all except:**

- (A) Coded in DNA
- (B) Modified with species evolution
- (C) Modified in individual's life span
- (D) Programmed responses to external stimuli

- **Correct Answer:** (C) Modified in individual's life span

- **Which one is non-directed orientation?**

- (A) Taxis
- (B) Kinesis
- (C) Tropism
- (D) Imprinting

- **Correct Answer:** (B) Kinesis

## **CHAPTER 20**

### **1. Female Infertility Can Be Caused by Hormonal Problems, Blocked Fallopian Tubes, and:**

- (a) A cold
- (b) Lack of appetite
- (c) Irregular menstrual cycles
- (d) STDs

**Correct Answer:** (c) Irregular menstrual cycles

### **2. The External Male Reproductive Organs Consist of the Penis, Testes, and:**

- (a) Urethra
- (b) Prostate
- (c) Scrotum
- (d) Seminal vesicle

**Correct Answer:** (c) Scrotum

**3. During the Menstrual Cycle, a Surge of Luteinizing Hormone Causes:**

- (a) Menstruation
- (b) Corpus luteum to rupture
- (c) Ovulation
- (d) Ovaries to produce estrogen

**Correct Answer:** (c) Ovulation

**4. During the Menstrual Cycle, Progesterone Levels Are at Their Highest During the:**

- (a) Follicular phase
- (b) Menstruation
- (c) Ovulation
- (d) Luteal phase

**Correct Answer:** (d) Luteal phase

**5. Which of the Following is Not a Phase of the Menstrual Cycle?**

- (a) Proliferative phase
- (b) Menstrual phase
- (c) Secretory phase
- (d) Ovulatory phase

**Correct Answer:** (a) Proliferative phase

**6. Testosterone is Produced by the:**

- (a) Seminiferous tubules
- (b) Germinal epithelium



- (c) SRY cells
- (d) Sertoli cells

**Correct Answer:** (d) Sertoli cells

**7. Which of the Following is True Regarding the Male Reproductive System?**

- (a) Sperm are produced in the vas deferens
- (b) The bulk of the ejaculate is produced by the sex accessory glands
- (c) Sperm cells are diploid
- (d) The scrotum keeps the testes warmer, thus helping to promote sperm production

**Correct Answer:** (d) The scrotum keeps the testes warmer, thus helping to promote sperm production

**8. The Duct That Transports the Sperm into the Urethra:**

- (a) Vas deferens
- (b) Epididymal duct
- (c) Ureter
- (d) None of the above

**Correct Answer:** (d) None of the above

**9. During the Production of Ova:**

- (a) The oogonia divide mitotically
- (b) Oogonia divide to produce four eggs
- (c) The female germ cell undergoes two divisions producing an ovum and two polar bodies
- (d) The final meiotic division occurs just prior to fertilization

**Correct Answer:** (c) The female germ cell undergoes two divisions producing an ovum and two polar bodies

**10. The Periodic Shedding of the Endometrium is Known As:**

- (a) Ovulation
- (b) Oogenesis
- (c) The secretory phase
- (d) Menstruation

**Correct Answer:** (d) Menstruation

**11. \_\_\_\_\_ is Caused by HIV:**

- (a) AIDS
- (b) Syphilis
- (c) Gonorrhea
- (d) Genital herpes

**Correct Answer:** (a) AIDS

**12. In Male Reproductive System, Testes are Enclosed in Extended Skin Called:**

- (a) Epididymis
- (b) Scrotum
- (c) Penis
- (d) Vas deferens

**Correct Answer:** (b) Scrotum

**13. The State of Having No Sperm:**

- (a) Azoospermia

- (b) Oligospermia
- (c) Sperm deformities
- (d) Aspermia

**Correct Answer:** (a) Azoospermia

Here are the MCQs with the correct answers beneath each, starting from number 14:

• **The cervix is the opening of:**

- (A) Ovary
- (B) Vagina
- (C) Fallopian tube
- (D) Uterus

• **Correct Answer:** (B) Vagina

• **Sperms are stored in:**

- (A) Epididymis
- (B) Urethra
- (C) Prostate gland
- (D) Vas deferens

• **Correct Answer:** (A) Epididymis

• **FSH is a hormone produced by:**

- (A) Pituitary gland
- (B) Adrenal gland
- (C) Ovary
- (D) Testes

• **Correct Answer:** (A) Pituitary gland

• **Uterus is a pear-shaped elastic about:**

- (A) 4cm long
- (B) 5cm long
- (C) 7.5cm long
- (D) 10.5 cm long
- **Correct Answer:** (C) 7.5cm long
- **The average menstrual cycle of an adult human female is about:**
- (A) 5 days
- (B) 8 days
- (C) 28 days
- (D) 14 days
- **Correct Answer:** (C) 28 days
- **Oligospermia is a condition in male in which:**
- (A) Abnormal sperms are produced
- (B) More sperms are produced
- (C) No sperms are produced
- (D) Less sperms are produced
- **Correct Answer:** (D) Less sperms are produced
- **The number of AIDS patients in world are in 2019:**
- (A) More than 1 billion
- (B) Over 38 million
- (C) Less than 3 million
- (D) Less than 2 million
- **Correct Answer:** (C) Less than 3 million
- **Fertilization of the ovum normally occurs:**
- (A) In the upper third of the oviduct

- (B) In the uterus
- (C) In the lower third of the oviduct
- (D) Can take place successfully in vagina
- **Correct Answer:** (A) In the upper third of the oviduct
- **The human egg is swept through the oviduct toward the uterus by:**
- (A) Beating of the egg's cilia
- (B) Rhythmic contraction of the oviduct
- (C) Rhythmic contraction of the uterus
- (D) The beating of the cilia in the oviduct
- **Correct Answer:** (A) Beating of the egg's cilia
- **Embryo implants in the \_\_\_\_\_ of the uterus.**
- (A) Perimetrium
- (B) Myometrium
- (C) Endometrium
- (D) Cervix
- **Correct Answer:** (C) Endometrium
- **The corpus luteum is formed at the site of:**
- (A) Fertilization
- (B) Ovulation
- (C) Menstruation
- (D) Implantation
- **Correct Answer:** (B) Ovulation
- **Within the ovary, progesterone is produced by:**
- (A) Corpus albicans
- (B) Corpus luteum

- (C) Tertiary follicles
- (D) Primary follicles
- **Correct Answer:** (B) Corpus luteum
- **The basic difference between spermatogenesis and oogenesis is that:**
- (A) During spermatogenesis two polar bodies are produced
- (B) The mature ovum is haploid while the sperm is  $2n$
- (C) Spermatogenesis involves mitosis and meiosis, but oogenesis involves meiosis only
- (D) In oogenesis, one mature ovum is produced, and in spermatogenesis four mature sperm are produced
- **Correct Answer:** (C) Spermatogenesis involves mitosis and meiosis, but oogenesis involves meiosis only
- **The uterine layer which is shed with each monthly cycle is:**
- (A) Endometrium
- (B) Perimetrium
- (C) Tunica albuginea
- (D) Myometrium
- **Correct Answer:** (A) Endometrium

Let me know if you need further assistance!

## CHAPTER 21

### 1. The Morphogenetic Movement Changes the Hollow Spherical Blastula Into A:

- (a) Embryonic disc
- (b) Gastrula
- (c) Morula
- (d) Neurula

**Correct Answer:** (b) Gastrula

### 2. The Fusion of 2 Haploid Sex Cells to Produce a Diploid Zygote Is:

- (a) Capacitance
- (b) Fertilization
- (c) Development
- (d) Differentiation

**Correct Answer:** (b) Fertilization

### 3. The Series of Mitotic Divisions That Transforms the Zygote into a Blastocyst is Called:

- (a) Cleavage
- (b) Implantation
- (c) Cytotrophoblast
- (d) Embryogenesis

**Correct Answer:** (a) Cleavage

### 4. Gastrulation Begins with the Formation of:

- (a) Primitive streak

- (b) Hypoblast layer
- (c) Cytotrophoblast
- (d) Endoderm layer

**Correct Answer:** (d) Endoderm layer

**5. Chromosomal Abnormal Sex Cells, Abnormal Cell Division of Fetus Are the Cause Of:**

- (a) Abnormal pregnancy
- (b) Spontaneous abortion
- (c) Premature birth
- (d) All of these

**Correct Answer:** (b) Spontaneous abortion

**6. The Inductive Process That Transforms a Flat Layer of Ectodermal Cells into a Hollow Nervous System Tube is Called:**

- (a) Invagination
- (b) Neurulation
- (c) Notochord formation
- (d) Gastrulation

**Correct Answer:** (b) Neurulation

**7. Sex Organs Begin to Develop During Weeks of Embryogenesis:**

- (a) 1-8
- (b) 9-12
- (c) 13-16
- (d) 17-20



**Correct Answer:** (c) 13-16

**8. Which of the Following Consists of Both Fetal & Maternal Tissues:**

- (a) Embryo
- (b) Placenta
- (c) Amnion
- (d) Allantois

**Correct Answer:** (b) Placenta

**9. Identical Twins Result from the Fertilization Of:**

- (a) 1 ovum by 1 sperm
- (b) 1 ovum by 2 sperms
- (c) 2 ova by 2 sperms
- (d) 2 ova by 1 sperm

**Correct Answer:** (a) 1 ovum by 1 sperm

**10. Microcephaly, Cleft Palate and Down's Syndrome Is an Example of:**

- (a) Regeneration
- (b) Aging
- (c) Abnormal development
- (d) Nutritional problems

**Correct Answer:** (c) Abnormal development

**11. The Hormone Responsible for Let-Down Reflex in Breast Feeding Is:**

- (a) TSH

- (b) Prolactin
- (c) Oxytocin
- (d) Insulin

**Correct Answer:** (c) Oxytocin

**12. Fetal Surgery Is Required For:**

- (a) Premature birth
- (b) Developmental problems
- (c) Birth defects spontaneous abortions
- (d) Growth problems

**Correct Answer:** (b) Developmental problems

**13. Dorsal Lip area is:**

- (a) Primary inducer
- (b) Secondary inducer
- (c) Organizer
- (d) Induction

**Correct Answer:** (a) Primary inducer

• **The umbilical cord in human contains:**

- (A) One artery, two vein
- (B) Two arteries one vein
- (C) Only one vein
- (D) Only two vein

• **Correct Answer:** (A) One artery, two vein

• **Study of ageing is called:**

- (A) Teratology
- (B) Paleozoology
- (C) Gerontology
- (D) Biotechnology
- **Correct Answer:** (C) Gerontology

• **Neurula tube is formed from:**

- (A) Ectoderm
- (B) Endoderm
- (C) Mesoderm
- (D) Hypoblast
- **Correct Answer:** (A) Ectoderm

• **Average gestation period in human female is:**

- (A) 280 days
- (B) 250 days
- (C) 320 days
- (D) 350 days
- **Correct Answer:** (A) 280 days

• **The fluid which surrounds embryo is called:**

- (A) Amniotic fluid
- (B) Chorionic fluid
- (C) Yolk
- (D) Uterus fluid

• **Correct Answer:** (A) Amniotic fluid

• **Prolactin prepare the mammary glands for the production of:**

- (A) Sweat

- (B) Sebum
- (C) Milk
- (D) Mucus
- **Correct Answer: (C) Milk**
- **The protective coat which surrounds the embryo is known as:**
- (A) Amnion
- (B) Chorion
- (C) Allantosis
- (D) Chorio allantoic
- **Correct Answer: (A) Amnion**
- **The outer layer of the blastocyst, which later attaches to the uterus, is the:**
- (A) Deciduas
- (B) Trophoblast
- (C) Amnion
- (D) Inner cell mass
- **Correct Answer: (B) Trophoblast**
- **Identical twins results from the fertilization of:**
- (A) One ovum by one sperm
- (B) One ovum by two sperms
- (C) Two ova by two sperms
- (D) Two ova by one sperm
- **Correct Answer: (A) One ovum by one sperm**
- **The most important hormone in initiating and maintaining lactation after birth is:**
- (A) Estrogen
- (B) FSH

- (C) Prolactin
- (D) Oxytocin
- **Correct Answer:** (C) Prolactin

## CHAPTER 22

### 1. The Physical Appearance of an Organism for a Given Trait is Termed:

- (a) Genetics
- (b) Dominance
- (c) Synapsis
- (d) Phenotype

**Correct Answer:** (d) Phenotype

### 2. The Alternative Forms of a Gene that Govern the Same Feature, Such as Eye Color, and Occupy Corresponding Positions on Homologous Chromosomes:

- (a) Alleles
- (b) Loci
- (c) Homozygotes
- (d) Coupled traits

**Correct Answer:** (a) Alleles

**3. The Physical Location of a Particular Gene on a Chromosome is Called:**

- (a) An allele
- (b) A locus
- (c) A trait
- (d) A chromatid

**Correct Answer:** (b) A locus

**4. The Genotype for a Pea Plant That Is Homozygous Recessive for Both Height and Pea Color Would Be:**

- (a) tt
- (b) YY
- (c) TTY
- (d) ttyy

**Correct Answer:** (d) ttyy

**5. A Cross Between Two Pure Individuals, Differing in At Least One Set of Characters, Is Called:**

- (a) Monohybrid
- (b) Polyploid
- (c) Mutant
- (d) Variant

**Correct Answer:** (c) Mutant

**6. ABO Blood Grouping is Based on:**

- (a) Codominance
- (b) Incomplete dominance
- (c) Epistasis
- (d) Multiple allelism

**Correct Answer:** (d) Multiple allelism

**7. Genotype of Blood Group 'A' Will Be:**

- (a)  $I^A I^A$
- (b)  $I^B I^B$
- (c)  $I^A I^B$
- (d)  $I^A I^i$

**Correct Answer:** (a)  $I^A I^A$

**8. The Traits Mendel Studied in Garden Peas Showed:**

- (a) Complete dominance
- (b) Incomplete dominance
- (c) Epistasis
- (d) Pleiotropy

**Correct Answer:** (a) Complete dominance

**9. In Which Kind of Cross Would You Expect to Find a Ratio of 9:3:3:1 Among the F<sub>2</sub> Offspring?**

- (a) Monohybrid cross
- (b) Dihybrid cross

- (c) Testcross
- (d) Multiple allele cross

**Correct Answer:** (d) Multiple allele cross

**10. Skin Color in Humans, Caused by Several Genes at Several Loci, Is an Example of:**

- (a) Multiple alleles at one locus
- (b) Incomplete dominance
- (c) Pleiotropy
- (d) Polygenic inheritance

**Correct Answer:** (b) Incomplete dominance

**11. In Humans, X-linked Diseases Include All of the Following EXCEPT:**

- (a) Color blindness
- (b) Hemophilia
- (c) Sickle-cell trait
- (d) Fragile X syndrome

**Correct Answer:** (c) Sickle-cell trait

**12. Which is Associated with the Inability to Produce Factor VIII in the Blood?**

- (a) Williams syndrome
- (b) Trisomy 21
- (c) Color-blindness
- (d) Hemophilia



**Correct Answer:** (d) Hemophilia

**13. Male Pattern Baldness is a \_\_\_\_\_ Trait:**

- (a) Sex linked
- (b) Sex influenced
- (c) Sex limited
- (d) Y-linked

**Correct Answer:** (b) Sex influenced

**14. Beard Growth in Humans is an Example of a \_\_\_\_\_ Trait:**

- (a) Sex linked
- (b) Sex influenced
- (c) Sex limited
- (d) Y linked

**Correct Answer:** (c) Sex limited

**15. In Sex Linked Color Blindness, the Son of a Heterozygote Woman and a Normal Man What Chance of Being Color Blind?**

- (a) 0%
- (b) 50%
- (c) 100%
- (d) 25%

**Correct Answer:** (d) 25%

**16. Any Chromosome That Is Not a Sex Chromosome in Human Is:**

- (a) An autosome
- (b) A chromatid

- (c) Sex influenced
- (d) Asexual chromosome

**Correct Answer:** (a) An autosome

• **All chromosomes other than sex chromosomes are called:**

- (A) Polysome
- (B) Autosomes
- (C) Mesosome
- (D) Acrosome

• **Correct Answer:** (B) Autosomes

• **If a gene is found on X-chromosome only then it is said:**

- (A) X-Linked
- (B) Y-Linked
- (C) Sex linked traits
- (D) XY linked

• **Correct Answer:** (A) X-Linked

• **The pattern of sex determination found in Drosophila is:**

- (A) WZ-ZZ type
- (B) XY-XX
- (C) XO-XX
- (D) Diploid, haploid type

• **Correct Answer:** (B) XY-XX

• **The phenomenon of sex linkage was discovered by:**

- (A) Carl Correns
- (B) Nilsson Ehle
- (C) T.H. Morgan

- (D) Calvin Bridge
- **Correct Answer:** (C) T.H. Morgan
- **A woman with normal colour vision, whose father was red-green colour blind, married a red-green colour blind man. What is the probability of her first-born child being red-green colour blind?**
- (A) 1.0
- (B) 0.75
- (C) 0.50
- (D) 0.025
- **Correct Answer:** (C) 0.50
- **Two parents, each of blood groups A, have a daughter of blood group O. What is the probability that their next child will have blood group O?**
- (A) 0.125
- (B) 0.25
- (C) 0.50
- (D) 0.75
- **Correct Answer:** (B) 0.25
- **What are the phenotypes of the parent of a colour-blind son and non-carrier daughter with normal colour vision?**
- Father
- (A) Carrier
- (B) Colour-blind
- (C) Normal
- (D) Normal
- Mother
- (A) Normal
- (B) Carrier

- (C) Carrier
- (D) Colour-blind
- **Correct Answer:** Father: (B) Colour-blind, Mother: (B) Carrier
- **When expression of a biological character is observed in variable intensity it is due to the affect of:**
  - (A) Multiple alleles
  - (B) Codominance
  - (C) Epistasis
  - (D) Polygenic inheritance
- **Correct Answer:** (D) Polygenic inheritance
- **Inheritance of skin colour in man is controlled by eight pairs of genes, which are:**
  - (A) Linked
  - (B) Codominant
  - (C) Multiple alleles
  - (D) Polygenic inheritance
- **Correct Answer:** (D) Polygenic inheritance

## CHAPTER 23

### 1. A Chromosome with Its Centromere in the Terminal End Is:

- (a) Submetacentric chromosome
- (b) Acrocentric chromosome
- (c) Metacentric chromosome
- (d) Telocentric chromosome

**Correct Answer:** (d) Telocentric chromosome

### 2. The Base Thymine Is Always Paired With:

- (a) Adenine
- (b) Guanine
- (c) Cytosine
- (d) Thymine

**Correct Answer:** (a) Adenine

**3. Highly Condensed and Transcriptionally Inactive DNA Form:**

- (a) Heterochromatin
- (b) Euchromatin
- (c) Autochromatin
- (d) Isochromatin

**Correct Answer:** (c) Autochromatin

**4. Chromosomes Play Central Role in Heredity; It Was First Suggested in 1900 by:**

- (a) Karl Corens
- (b) McCarthy
- (c) Messelson
- (d) Joshua Ryan

**Correct Answer:** (a) Karl Corens

**5. The Rungs of Ladder (DNA) Are the:**

- (a) Deoxyribose Sugars
- (b) Phosphate Groups
- (c) Hydrogen-Bonded Bases
- (d) Ribose Sugars

**Correct Answer:** (c) Hydrogen-Bonded Bases

**6. In Which of the Molecules You Find a Codon?**

- (a) mRNA
- (b) tRNA

- (c) rRNA
- (d) All

**Correct Answer:** (a) mRNA

**7. Transcription is Transfer of Genetic Information From:**

- (a) DNA to RNA
- (b) RNA to mRNA
- (c) DNA to mRNA
- (d) mRNA to tRNA
- **Correct Answer:** (c) DNA to mRNA

**8. Sigma Factor Is Component of:**

- (a) DNA ligase
- (b) DNA polymerase
- (c) RNA polymerase
- (d) Endonuclease

**Correct Answer:** (c) RNA polymerase

**9. Which of the Following Is Necessary for Transcription to Occur?**

- (a) DNA molecules
- (b) DNA polymerase
- (c) RNA polymerase
- (d) Both DNA and RNA polymerase

**Correct Answer:** (c) RNA polymerase

**10. What Are the Coding Segments of a Stretch of Eukaryotic DNA Called?**

- (a) Introns
- (b) Exons
- (c) Codons
- (d) Replicons

**Correct Answer:** (b) Exons

**11. Which Component Is Not Directly Involved in Translation?**

- (a) mRNA
- (b) DNA
- (c) tRNA
- (d) Ribosomes

**Correct Answer:** (b) DNA

**12. The Transcription of DNA to a Molecule of Messenger RNA Occurs:**

- (a) On the ribosomes
- (b) In the cytosol
- (c) In the nucleus
- (d) Only during cell division

**Correct Answer:** (c) In the nucleus

**• The number of tRNA in human are:**

- (A) 45
- (B) 60
- (C) 61



- (D) 35
- **Correct Answer: (B) 60**
- **Anticodones are present on:**

- (A) mRNA
- (B) tRNA
- (C) DNA
- (D) rRNA

- **Correct Answer: (B) tRNA**

- **The initiation codon is:**

- (A) UUA
- (B) ACC
- (C) AUG
- (D) GCG

- **Correct Answer: (C) AUG**

- **Down's syndrome is autosomal non-disjunction of chromosome number:**

- (A) 21
- (B) 22
- (C) 13
- (D) 18

- **Correct Answer: (A) 21**

- **Which condition appears due to point mutation:**

- (A) Turner's syndrome
- (B) Klinefelter's syndrome
- (C) Sickle cell anemia
- (D) Down's syndrome

- **Correct Answer:** (C) Sickle cell anemia

- **Which of the following act as stop codon?**

- (A) UGG
- (B) UGC
- (C) UAG
- (D) UGU

- **Correct Answer:** (C) UAG

- **In mitochondria UGA codon act as specify \_\_\_\_\_ instead stop codon:**

- (A) Arginine
- (B) Valine
- (C) Glutamic acid
- (D) Tryptophan

- **Correct Answer:** (C) Glutamic acid

- **If the amount of adenine in DNA of a bacterial cell is 36% of the total nitrogenous bases, what will be the amount of guanine in the DNA of a cell in next generation:**

- (A) 14%
- (B) 28%
- (C) 36%
- (D) 64%

- **Correct Answer:** (B) 28%

- **If an mRNA is synthesized with all the different codons, what is the minimum number of amino acids in the protein that is formed by mRNA:**

- (A) 64 Amino acids
- (B) 62 Amino acids
- (C) 60 Amino acids
- (D) None of them

- **Correct Answer:** (C) 60 Amino acids

• In eukaryotic mRNA molecule there are 90 nucleotide involved in translation process.  
What is the number of amino acid in the protein formed by this mRNA molecule?

- (A) 29 amino acids
- (B) 30 amino acids
- (C) 45 amino acids
- (D) 90 amino acids

- **Correct Answer:** (B) 30 amino acids

• In Griffith experiment mice developed pneumonia when they were injected with:

- (A) R-type bacteria
- (B) heat killed R-type bases
- (C) heat killed S-type bacteria along with live R-type bacteria.

- **Correct Answer:** (C) heat killed S-type bacteria along with live R-type bacteria.

• If the codon consisted of only two nucleotides, how many possible codons?

- (A) 4
- (B) 8
- (C) 20
- (D) 16

- **Correct Answer:** (B) 8

## CHAPTER 24

### 1. Wing of Pigeon, Bat and Mosquito Exhibit the Phenomenon Called:

- (a) Convergent evolution
- (b) Divergent evolution
- (c) Atavism
- (d) Parallel evolution

**Correct Answer:** (a) Convergent evolution

### 2. All of the Following Are Sources of Genetic Variation for Evolution, Except:

- (a) Mutation
- (b) Recombination
- (c) Genetic drift
- (d) Gene flow

**Correct Answer:** (c) Genetic drift

**3. A Species Inhabiting Different Geographical Areas is Known As:**

- (a) Sympatric
- (b) Allopatric
- (c) Sibling
- (d) Bio species

**Correct Answer:** (b) Allopatric

**4. Genetic Drift is on Account of:**

- (a) Variations
- (b) Mutations
- (c) Increase in population
- (d) Decrease in population

**Correct Answer:** (d) Decrease in population

**5. Sympatric Speciation Develops Reproductive Isolation Without:**

- (a) Geographical barrier
- (b) Barrier to mating
- (c) Barrier to gene flow
- (d) Genetic change

**Correct Answer:** (a) Geographical barrier

**6. Quick Changes in Phenotypes in a Small Band of Colonies Is Called:**

- (a) Founder effect
- (b) Bottle neck

- (c) Genetic drift
- (d) Gene flow

**Correct Answer:** (a) Founder effect

**7. In Which Condition Gene Ratio Remains Constant in Species?**

- (a) Gene flow
- (b) Mutation
- (c) Random mating
- (d) Sexual selection

**Correct Answer:** (c) Random mating

**8. Lamarck Theory of Organic Evolution Is Usually Known As:**

- (a) Natural selection
- (b) Inheritance of acquired characters
- (c) Continuity of protoplasm
- (d) Mutation

**Correct Answer:** (b) Inheritance of acquired characters

**9. Which of the Following Features Are Raw Material in Evolution According to Darwin's Theory:**

- (a) Intraspecific Character
- (b) Acquired Variation
- (c) Acquired Capabilities
- (d) Inherited Variation

**Correct Answer:** (d) Inherited Variation

**10. Which of the Following Best Defines Evolution?**

- (a) Is the Maintenance of Life under Changing Conditions
- (b) Survival of the Fittest
- (c) Is the Goal Directed Change
- (d) Evolution is Variation

**Correct Answer:** (a) Is the Maintenance of Life under Changing Conditions

**11. The Ultimate Source of Organic Variation is:**

- (a) Sexual Reproduction
- (b) Hormonal Action
- (c) Natural Selection
- (d) Mutation

**Correct Answer:** (d) Mutation

**• The armoured mammal that live only in America is:**

- (A) Echidna
- (B) Pangolin
- (C) Porcupine
- (D) Armadillo

**• Correct Answer:** (D) Armadillo

**• Analogous structure are:**

- (A) Anatomically similar and functioning similarly
- (B) Anatomically similar but functioning differently
- (C) Anatomically different but functioning similarly
- (D) Anatomically different and functionally differently

- **Correct Answer:** (C) Anatomically different but functioning similarly

- **Book "The origin of species" was written by:**

- (A) Linnaeus
- (B) Cuvier
- (C) Lyell
- (D) Darwin

- **Correct Answer:** (D) Darwin

- **Human appendix, coccyx and nictitating membrane of the eye are:**

- (A) Vestigial organs
- (B) Homologous organs
- (C) Analogous organs
- (D) Embryonic organs

- **Correct Answer:** (A) Vestigial organs

- **The study of birds is:**

- (A) Ornithology
- (B) Ichthyology
- (C) Herpetology
- (D) Entomology

- **Correct Answer:** (A) Ornithology

- **Similarity in characteristics resulting from common ancestry is known as:**

- (A) Analogy
- (B) Homology
- (C) Evolutionary relationship
- (D) Phylogeny

- **Correct Answer:** (B) Homology



- **Which one of the following pairs represents analogous features?**

- (A) Elephant tusks & Human incisors
- (B) Insects wings & bat wings
- (C) Mammal fore limbs & bird wing
- (D) Reptilian heart & mammalian heart

- **Correct Answer:** (B) Insects wings & bat wings

- **Which of the following ideas was not part of Charles Darwin's theory of evolution by natural selection?**

- (A) Organisms produce more offspring than the environment can support
- (B) Variation between individuals arises by gene mutation
- (C) Only those individuals that are best adapted to the environment survive and reproduce
- (D) Individuals compete for space and resources

- **Correct Answer:** (C) Only those individuals that are best adapted to the environment survive and reproduce

- **Hardy-Weinberg theorem describes the frequencies of genotype of non-evolving:**

- (A) Family
- (B) Population
- (C) Species
- (D) Community

- **Correct Answer:** (B) Population

- **Emigration and Immigration of members of a population, cause disturbance in the:**

- (A) Genotype
- (B) Phenotype
- (C) Gene pool
- (D) Genetic drift

- **Correct Answer:** (C) Gene pool

- **Genetic drift is change of gene frequency in:**
- (A) Same generation
- (B) One generation to next
- (C) By change
- (D) Appearance of recessive allele
- **Correct Answer:** (B) One generation to next
- **Species occurring in different geographical area are called as:**
- (A) Sympatric
- (B) Allopatric
- (C) Peripatric
- (D) Parapatric
- **Correct Answer:** (B) Allopatric
- **Which of the following is most important for speciation?**
- (A) Seasonal isolation
- (B) Reproductive isolation
- (C) Behavior isolation
- (D) Tropical isolation
- **Correct Answer:** (B) Reproductive isolation



## CHAPTER 25

**1. Nitrogen is essential for living organisms to make:**

- (a) Lipids
- (b) Proteins
- (c) Carbohydrates
- (d) Sulfates
- (e) Benzene rings

**Answer:** (b) Proteins

**2. The step in the nitrogen cycle where bacteria convert ammonia ( $\text{NH}_3$ ) to nitrate ( $\text{NO}_3^-$ ) is:**

- (a) Nitrification
- (b) Ammonification
- (c) Assimilation
- (d) Denitrification

**Answer:** (a) Nitrification

**3. What is happening to the amount of CO<sub>2</sub> in atmosphere?**

- (a) Increasing
- (b) Decreasing
- (c) Holding steady
- (d) Fluctuating

**Answer:** (a) Increasing

**4. The accumulation of herbivore biomass in an ecosystem is an example of:**

- (a) Biochemical cycles
- (b) Transpiration
- (c) Net primary productivity
- (d) Secondary productivity

**Answer:** (d) Secondary productivity

**5. Which of the following is secondary consumer?**

- (a) A carnivore
- (b) A herbivore
- (c) Plant
- (d) All

**Answer:** (a) A carnivore

**6. The total amount of energy that is converted to organic compounds in a given area per unit of time is called the:**

- (a) Biomass
- (b) Transpiration
- (c) Net primary productivity
- (d) Gross primary productivity

**Answer:** (d) Gross primary productivity

**7. Carnivore represent what trophic level?**

- (a) Producer
- (b) Primary consumer
- (c) Secondary consumer
- (d) Decomposers

**Answer:** (c) Secondary consumer

**8. Acid rain is caused due to increase in concentration of:**

- (a)  $\text{SO}_2$  &  $\text{NO}_2$
- (b)  $\text{CO}$  &  $\text{CO}_2$
- (c)  $\text{CO}$  &  $\text{SO}_3$
- (d) Ozone & dust

**Answer:** (a)  $\text{SO}_2$  &  $\text{NO}_2$

**9. Ozone depletion is caused by:**

- (a)  $\text{Co}$
- (b) CFCs
- (c)  $\text{CO}$
- (d)  $\text{SO}_2$

**Answer:** (b) CFCs

**10. Maximum threat to the world**

- (a) Global warming
- (b) Ozone hole

- (c) Water pollution
- (d) Soil erosion

**Answer: (b) Ozone hole**

**11. Which of the following is a prime health risk associated with greater UV radiation through the atmosphere due to depletion of stratospheric ozone?**

- a) Biological disorder of the immune system
- b) Neurological disorder
- c) Increased liver cancer
- d) Increased skin cancer

**Answer: d) Increased skin cancer**

**12. The scientific study of human populations is:**

- a) Ecology
- b) Demography
- c) Biogeography
- d) Eugenics

**Answer: b) Demography**

- **Change in community structure of an ecosystem over a period of time:**

- (A) Niche
- (B) Unstable ecosystem
- (C) Succession
- (D) Pioneer

- **Correct Answer: (C) Succession**

- **The Herbaceous stage in xeroses is the:**

- (A) First stage
- (B) Third stage
- (C) Fourth stage
- (D) Last stage

- **Correct Answer: (B) Third stage**

- **The ozone layer has developed a hole over the:**

- (A) Arctic
- (B) Equator
- (C) Antarctica
- (D) Tropics

- **Correct Answer: (C) Antarctica**

- **As CFCs rise to the atmosphere, the ultraviolet rays release:**

- (A) Fluorine
- (B) Chlorine
- (C) Carbon
- (D) Nitrogen

- **Correct Answer: (B) Chlorine**

- **The group of organisms that fix atmospheric nitrogen are:**

- (A) Plants
- (B) Bacteria
- (C) Fungi
- (D) Insects

- **Correct Answer: (B) Bacteria**

- **The producers of ecosystems are:**

- (A) Decomposers
- (B) Absorptive heterotrophs
- (C) Ingestive heterotrophs
- (D) Autotrophs

- **Correct Answer: (D) Autotrophs**

- **Ozone layer is found in:**

- (A) Troposphere

- (B) Stratosphere
- (C) Hydrosphere
- (D) Mesosphere

- **Correct Answer: (B) Stratosphere**

- **The cause of the greenhouse effect is:**

- (A) CO<sub>2</sub>
- (B) Hydrogen
- (C) Nitrogen
- (D) Oxygen

- **Correct Answer: (A) CO<sub>2</sub>**

- **The graphical representation of ecological data of an ecosystem is called:**

- (A) Succession
- (B) Niche
- (C) Habitat
- (D) Pyramid

- **Correct Answer: (B) Niche**

- **Which of these levels of ecological study involves both abiotic and biotic components:**

- (A) Organisms
- (B) Population
- (C) Ecosystem
- (D) Community

- **Correct Answer: (C) Ecosystem**

- **Which of the following is renewable resource?**

- (A) Oil and natural gas
- (B) Water and oil



- (C) Air and water
- (D) Oil and coal
- **Correct Answer: (C) Air and water**
- **About 95% of our daily energy requirements are fulfilled by:**
- (A) Atomic energy
- (B) Hydroelectric power
- (C) Fossil fuel
- (D) Wind energy
- **Correct Answer: (C) Fossil fuel**
- **The ozone molecule is made up of by building of three atoms of:**
- (A) Nitrogen
- (B) Hydrogen
- (C) Oxygen
- (D) Carbon
- **Correct Answer: (C) Oxygen**

## CHAPTER 26

**1. The undifferentiated & unorganized mass of cells in tissue cultures is called:**

- (a) Crown
- (b) Callus

- (c) Callose
- (d) Tissue

**Answer:** (b) Callus

**2. Gel electrophoresis is used for:**

- (a) Construction of rDNA by joining the cloning vector
- (b) Isolation of molecules
- (c) Cutting of DNA into fragments
- (d) Separation of DNA Fragments according to their size & composition

**Answer:** (d) Separation of DNA Fragments according to their size & composition

**3. The application of recombinant DNA technology to forensic cases requires all of the following except:**

- (a) Cloning of the DNA
- (b) Establishment of DNA profiles
- (c) DNA sequencing
- (d) STR analysis

**Answer:** (c) DNA sequencing

**4. Genetic engineering is the manipulation of:**

- (a) Genetic bacteria
- (b) Genetic plant
- (c) Genetic material
- (d) Genetic animal

**Answer:** (c) Genetic material

**5. \_\_\_\_\_ is defined as the “biological concept to science and engineering of living organisms for the welfare of mankind”.**

- (a) Microbiology
- (b) Human biology
- (c) Biotechnology
- (d) Zoology

**Answer:** (c) Biotechnology

**6. A gene is inserted into a DNA molecule called:**

- (a) Vector
- (b) Plasmids
- (c) Gene of interest
- (d) Probe

**Answer:** (a) Vector

**7. \_\_\_\_\_ are small, extra circular DNAs molecules found in some bacteria.**

- (a) Vectors
- (b) Plasmids
- (c) Chromosomes
- (d) Genetic engineered DNAs

**Answer:** (b) Plasmids

**8. Plasmids are generally found in:**

- (a) Bacteria
- (b) Vertebrates
- (c) Fungi
- (d) Bacteriophages

**Answer:** (a) Bacteria

**9. The molecular scissors in the bacterial cell are:**

- (a) DNA ligase enzyme
- (b) Vector
- (c) Plasmid
- (d) Restriction enzyme

**Answer:** (d) Restriction enzyme

**10. \_\_\_\_\_ is a key enzyme that seals the restriction fragment with sticky ends of vector.**

- (a) DNA polymerase enzyme
- (b) DNA ligase enzyme
- (c) Restriction enzyme
- (d) Helicase enzyme

**Answer:** (b) DNA ligase enzyme

**11. \_\_\_\_\_ are may be taken as expression system in DNA recombinant technology.**

- (a) Bacterial cells
- (b) Vectors
- (c) Plasmids
- (d) Bacteriophage

**Answer:** (a) Bacterial cells

**12. In \_\_\_\_\_ technique entire organism can be grown from a single cell.**

- (a) Tissue culture
- (b) Cloning
- (c) Genetic engineering
- (d) Transfusion

**Answer:** (b) Cloning

**13. When the cell wall of a plant cell is removed it is called:**

- (a) Protoplast
- (b) Plant cell
- (c) Cytosol
- (d) Protoplasm

**Answer:** (a) Protoplast

**14. \_\_\_\_\_ is the fastest way of determining amino acid sequences.**

- (a) DNA fingerprinting
- (b) Gene sequencing

- (c) Genomic library
- (d) PCR

**Answer:** (a) DNA fingerprinting

- **The PCR was developed by K. Mullis in:**

- (A) 1970
- (B) 1983
- (C) 1975
- (D) 1978

- **Correct Answer:** (B) 1983

- **Taq polymerase is an enzyme present in:**

- (A) Bacteria
- (B) Protozoans
- (C) Algae
- (D) Helminths

- **Correct Answer:** (A) Bacteria

- **A complete set of genes of an individual is called as:**

- (A) Gene pool
- (B) Genome
- (C) Gene library
- (D) Recombinant gene

- **Correct Answer:** (B) Genome

- **Those organisms which have had a foreign gene into them are called as:**

- (A) Transgenic
- (B) Transmuted
- (C) Hermaphrodites
- (D) Polygenesis

- **Correct Answer:** (A) Transgenic
- **The use of transgenic animals to produce pharmaceutical is termed as:**
- (A) Gene pharming
- (B) Antibiotic
- (C) Gene therapy
- (D) Antiviral
- **Correct Answer:** (A) Gene pharming
- **Transgenic soybeans are made to resist against:**
- (A) Herbicides
- (B) Fungicides
- (C) Insecticides
- (D) Pesticide
- **Correct Answer:** (A) Herbicides
- **Which of the following is the genetic marker that is used in DNA fingerprinting:**
- (A) Primer
- (B) Probe
- (C) RFLP
- (D) Intron
- **Correct Answer:** (B) Probe
- **RFLP is a(an):**
- (A) Intron
- (B) Exon
- (C) Anticodon
- (D) Codon
- **Correct Answer:** (A) Intron

- **The type of gel most commonly used for short fragment DNA electrophoresis is:**

- (A) Agarose
- (B) DNA polymerase
- (C) Polyacrylamide
- (D) DNA ligase
- **Correct Answer:** (A) Agarose

- **Cell suspension culture of *Cichona ledgeriana* produce:**

- (A) Quinine
- (B) Digitoxin
- (C) Polludrin
- (D) Anti toxin
- **Correct Answer:** (A) Quinine

- **Dideoxy ribonucleoside triphosphates are used to terminate DNA synthesis at different sites. Which method involves this procedure?**

- (A) Maxam-Gilbert's method
- (B) Sanger's method
- (C) K.B. Mullis's method
- (D) Gottlieb's method
- **Correct Answer:** (B) Sanger's method

- **The gene of interest is joined with the sticky ends produced after cutting the plasmid with the help of another special enzyme known as:**

- (A) DNA ligase
- (B) DNA polymerase
- (C) Restriction
- (D) Reverse transcriptase
- **Correct Answer:** (A) DNA ligase

- **The enzyme DNA polymerase can work only in:**

- (A) 3'  $\rightarrow$  5' direction
- (B) 5'  $\rightarrow$  3' direction
- (C) Both the directions
- (D) 5'  $\rightarrow$  5' direction

- **Correct Answer:** (B) 5'  $\rightarrow$  3' direction

- **A totipotent cell means:**

- (A) An undifferentiated cell capable of developing into a system or entire plant
- (B) An undifferentiated cell capable of developing into an organ
- (C) An undifferentiated cell capable of developing into complete embryo
- (D) Cell which lacks the capability to differentiate into an organ or system
- **Correct Answer:** (A) An undifferentiated cell capable of developing into a system or entire plant