

## UPPCS Prelims 2025 Test 5 (Questions) – Science Full Length (SSW - 8077834630)

**Question 1.** Who is known as the "Father of Biology"?

- (a) Theophrastus
- (b) Hippocrates
- (c) Aristotle
- (d) Linnaeus

**Question 2.** Which of the following branches is correctly matched with its father?

- (a) Genetics – Edward Jenner
- (b) Cell Biology – Robert Hooke
- (c) Taxonomy – Gregor Mendel
- (d) Paleontology – Aristotle

**Question 3.** Choose the incorrect statement:

- (a) Bionomics is the study of life modes and adaptations
- (b) Agrostology is the study of flowers
- (c) Palynology involves the study of pollen grains
- (d) Pedology deals with soil formation and classification

**Question 4.** Which of the following is correctly matched?

- (a) Lamarck – Natural Selection
- (b) Hugo de Vries – Mutation Theory
- (c) Darwin – Inheritance of Acquired Characters
- (d) Pasteur – Cosmozoic Theory

**Question 5.** Assertion (A): The early atmosphere of Earth lacked free oxygen.

Reason (R): Oxygen was toxic to the formation of organic molecules in primitive Earth.

Code:

- (a) Both A and R are true, and R is the correct Explanation of A
- (b) Both A and R are true, but R is not the correct Explanation of A
- (c) A is true, R is false
- (d) A is false, R is true

**Question 6.** Choose the incorrect statement:

- (a) The first living cells were heterotrophic.

(b) Eukaryotic cells appeared before prokaryotic cells.

(c) Oxygen revolution led to the ozone layer formation.

(d) The first biomolecules formed in the "primordial soup."

**Question 7.** Choose the true statement:

- (a) Hibernation occurs in summer
- (b) Aestivation occurs in cold climates
- (c) Hibernation lowers metabolic rate to conserve energy
- (d) Aestivation increases heart rate to avoid heat

**Question 8.** Which of the following is not a cold-blooded animal?

- (a) Crocodile
- (b) Salamander
- (c) Sparrow
- (d) Frog

**Question 9.** Which of the following fish is not a true fish?

- (a) Seahorse
- (b) Jellyfish
- (c) Shark
- (d) Goldfish

**Question 10.** In binomial nomenclature, which of the following is true?

- (a) Both names are written in capital
- (b) Genus in lowercase, species in uppercase
- (c) Genus is capitalized, species is lowercase
- (d) Both in lowercase

**Question 11.** Match List-I with List-II:

List-I (Organelle) — List-II (Discoverer)

- A. Ribosome — 1. Robert Brown
- B. Nucleus — 2. George Palade
- C. Golgi body — 3. Camillo Golgi
- D. Mitochondria — 4. Callicer

Code:

A B C D

- (a) 1 2 4 3
- (b) 2 1 3 4
- (c) 2 3 1 4
- (d) 3 2 1 4

**Question 12.** Assertion (A): DNA has self-replicating ability.

Reason (R): DNA is a double-helical molecule located only in the nucleus.

Code:

- (a) Both A and R are true, and R is the correct Explanation of A
- (b) Both A and R are true, but R is not the correct Explanation of A
- (c) A is true, R is false
- (d) A is false, R is true

**Question 13.** What is the primary structural difference between plant and animal cells?

- (a) Mitochondria
- (b) Plasma membrane
- (c) Presence of centrosome
- (d) Presence of chloroplast and cell wall

**Question 14.** Which is the largest human cell?

- (a) Neuron
- (b) Ovum
- (c) RBC
- (d) Hepatic cell

**Question 15.** Which organelle is known as the “suicidal bag” of the cell?

- (a) Golgi apparatus
- (b) Lysosome
- (c) Mitochondria
- (d) Peroxisome

**Question 16.** Cell wall in fungi is made of:

- (a) Cellulose
- (b) Chitin
- (c) Pectin
- (d) Lignin

**Question 17.** The term “Central Dogma” in molecular biology refers to:

- (a) DNA → RNA → Protein
- (b) RNA → DNA → Protein

(c) Protein → RNA → DNA

(d) DNA → Protein → RNA

**Question 18.** Which of the following organelles is responsible for cellular respiration?

- (a) Ribosome
- (b) Nucleus
- (c) Mitochondria
- (d) Lysosome

**Question 19.** Which is the longest human cell?

- (a) Sperm
- (b) Neuron
- (c) Hepatic cell
- (d) RBC

**Question 20.** Which of the following is the correct sequence of stages in human nutrition?

- (a) Ingestion → Absorption → Digestion → Assimilation → Egestion
- (b) Ingestion → Digestion → Assimilation → Absorption → Egestion
- (c) Ingestion → Digestion → Absorption → Assimilation → Egestion
- (d) Ingestion → Assimilation → Digestion → Absorption → Egestion

**Question 21.** Match the following enzymes with their respective functions:

- A. Pepsin – 1. Digests starch
- B. Amylase – 2. Digests proteins
- C. Lipase – 3. Breaks down fats

Code:

A B C

- (a) 2 3 1
- (b) 1 2 3
- (c) 2 1 3
- (d) 3 2 1

**Question 22.** Choose the correct statement regarding bile:

- (a) Bile is produced in the pancreas and stored in the liver
- (b) Bile is produced in the liver and contains digestive enzymes
- (c) Bile is produced in the gallbladder and digests proteins

(d) Bile is produced in the liver, stored in the gallbladder, and emulsifies fats

**Question 23.** Assertion (A): Enamel is the hardest substance in the human body.

Reason (R): Enamel is composed primarily of calcium carbonate.

Code:

(a) Both A and R are true and R is the correct Explanation of A

(b) Both A and R are true, but R is not the correct Explanation of A

(c) A is true, but R is false

(d) A is false, but R is true

**Question 24.** Which part of the digestive system has villi for absorption?

(a) Stomach

(b) Esophagus

(c) Small intestine

(d) Large intestine

**Question 25.** Arrange the following sections of the small intestine in increasing order of length:

1. Duodenum

2. Ileum

3. Jejunum

Code:

(a) 2, 3, 1

(b) 3, 2, 1

(c) 1, 3, 2

(d) 2, 1, 3

**Question 26.** Choose the true statement:

(a) Gastrin is secreted in the pancreas

(b) Secretin inhibits pancreatic juice secretion

(c) Ghrelin suppresses appetite

(d) Cholecystokinin stimulates bile and enzyme secretion

**Question 27.** Match the following parts with their function:

A. Duodenum – 1. Water absorption

B. Stomach – 2. Digestion of proteins

C. Large Intestine – 3. Emulsification of fats

Code:

A B C

(a) 3 2 1

(b) 2 1 3

(c) 1 2 3

(d) 3 1 2

**Question 28.** Which component of saliva is responsible for killing bacteria?

(a) Diastase

(b) Mucins

(c) Lysozyme

(d) Ptyalin

**Question 29.** What is the dental formula for adult humans?

(a) 2122/2122

(b) 2123/2123

(c) 1112/1112

(d) 3131/3131

**Question 30.** Which of the following statements correctly defines double circulation in humans?

(a) Blood circulates through two different blood vessels

(b) Blood circulates through two different hearts

(c) Blood passes through the heart twice in one complete cycle

(d) Oxygenated and deoxygenated blood are mixed in the heart

**Question 31.** Choose the correct function of the spleen:

(a) Produces insulin and glucagon

(b) Acts as a blood filter and removes old RBCs

(c) Regulates heart rhythm

(d) Stimulates digestive enzyme production

**Question 32.** Assertion (A): Arteries have thick and elastic walls.

Reason (R): Arteries carry blood at low pressure.

Code:

(a) Both A and R are true, and R is the correct Explanation

(b) Both A and R are true, but R is not the correct Explanation

(c) A is true, R is false

(d) A is false, R is true

**Question 33.** Which of the following is the universal blood recipient?

- (a) O–
- (b) AB+
- (c) AB–
- (d) B+

**Question 34.** Which part of the human heart is known as the natural pacemaker?

- (a) AV Node
- (b) SA Node
- (c) Purkinje fibers
- (d) Bundle of His

**Question 35.** Choose the incorrect match:

- (a) Bradycardia – Abnormally slow heart rate
- (b) Tachycardia – Abnormally fast heart rate
- (c) Jarvik-7 – First artificial pacemaker
- (d) ECG – Records electrical activity of heart

**Question 36.** Match the following:

- A. Hemophilia – 1. High RBC count
- B. Leukemia – 2. Defective clotting
- C. Polycythemia – 3. Blood cancer

Code:

A B C

- (a) 2 3 1
- (b) 1 2 3
- (c) 3 2 1
- (d) 2 1 3

**Question 37.** Which blood component lacks nucleus?

- (a) WBC
- (b) Lymphocyte
- (c) RBC
- (d) Monocyte

**Question 38.** Which of the following tissues connects muscle to bone?

- (a) Ligament
- (b) Cartilage
- (c) Tendon
- (d) Periosteum

**Question 39.** Which of the following bones is known to be the most commonly fractured bone?

- (a) Ulna
- (b) Femur
- (c) Clavicle
- (d) Radius

**Question 40.** Arrange the following vertebral regions from top to bottom:

- 1. Cervical
- 2. Lumbar
- 3. Thoracic

Code:

- (a) 1, 2, 3
- (b) 1, 3, 2
- (c) 3, 1, 2
- (d) 2, 3, 1

**Question 41.** Match the following joint types with their examples:

- A. Ball and Socket – 1. Knee
- B. Hinge – 2. Shoulder
- C. Pivot – 3. Neck

Code:

A B C

- (a) 2 1 3
- (b) 3 2 1
- (c) 1 3 2
- (d) 2 3 1

**Question 42.** Which of the following bones is a part of the axial skeleton?

- (a) Humerus
- (b) Femur
- (c) Scapula
- (d) Sternum

**Question 43.** How many ribs are there in the human thoracic cage?

- (a) 10
- (b) 24
- (c) 26
- (d) 12

**Question 44.** Match the following nitrogenous wastes with the type of animals:

- A. Ammonia – 1. Birds
- B. Urea – 2. Mammals

C. Uric acid – 3. Bony fishes

Code:

A B C

(a) 3 1 2

(b) 1 2 3

(c) 2 1 3

(d) 3 2 1

**Question 45.** Match the following diseases with their causative agents:

A. Cholera – 1. Bacteria

B. Ringworm – 2. Fungus

C. AIDS – 3. Virus

Code:

A B C

(a) 3 2 1

(b) 1 3 2

(c) 2 1 3

(d) 1 2 3

**Question 46.** Choose the correct statement:

(a) All infectious diseases are communicable.

(b) All communicable diseases are non-infectious.

(c) All communicable diseases are infectious.

(d) Non-communicable diseases can be transmitted.

**Question 47.** Which of the following is a genetic disorder?

(a) Tuberculosis

(b) Scurvy

(c) Sickle cell anemia

(d) Hepatitis

**Question 48.** Assertion (A): Hemophilia is also called "Royal disease."

Reason (R): It was common in European royal families.

Code:

(a) Both A and R are true and R is the correct Explanation

(b) Both A and R are true, but R is not the correct Explanation

(c) A is true, R is false

(d) A is false, R is true

**Question 49.** Which of the following diseases is transmitted by Culex mosquito?

(a) Dengue

(b) Malaria

(c) Elephantiasis

(d) Yellow fever

**Question 50.** Which of the following is a zoonotic disease?

(a) Typhoid

(b) Cholera

(c) Rabies

(d) Polio

**Question 51.** Which of the following viral diseases has been eradicated globally?

(a) Polio

(b) Measles

(c) Smallpox

(d) Chickenpox

**Question 52.** Which test is used for diagnosing Typhoid?

(a) ELISA

(b) Widal Test

(c) Mantoux Test

(d) RT-PCR

**Question 53.** Choose the incorrect statement:

(a) Dengue virus affects platelet count

(b) Rabies is a bacterial disease

(c) Pneumonia affects lungs

(d) AIDS attacks immune system

**Question 54.** The term "Itai-Itai" disease is associated with:

(a) Mercury

(b) Lead

(c) Cadmium

(d) Arsenic

**Question 55.** According to WHO, the leading cause of global deaths (2025) is:

(a) Diabetes

(b) Lower respiratory infections

(c) Cancer

(d) Ischemic Heart Disease

**Question 56.** Which of the following is a water-soluble vitamin?

- (a) Vitamin A
- (b) Vitamin D
- (c) Vitamin C
- (d) Vitamin K

**Question 57.** Pellagra is caused due to the deficiency of which vitamin?

- (a) Vitamin B2
- (b) Vitamin B3
- (c) Vitamin B5
- (d) Vitamin B7

**Question 58.** Which vitamin helps in the clotting of blood?

- (a) Vitamin C
- (b) Vitamin D
- (c) Vitamin E
- (d) Vitamin K

**Question 59.** Beriberi is caused by the deficiency of:

- (a) Vitamin B1
- (b) Vitamin B6
- (c) Vitamin B12
- (d) Vitamin C

**Question 60.** Which of the following is known as anti-sterility vitamin?

- (a) Vitamin A
- (b) Vitamin D
- (c) Vitamin E
- (d) Vitamin K

**Question 61.** Match List-I (Vitamin) with List-II (Other Name):

List-I:

- A. Vitamin B1
- B. Vitamin B2
- C. Vitamin B3
- D. Vitamin B6

List-II:

- 1. Niacin
- 2. Riboflavin
- 3. Thiamine

4. Pyridoxine

Code:

A B C D

- (a) 1 3 2 4
- (b) 3 2 1 4
- (c) 4 2 3 1
- (d) 2 3 1 4

**Question 62.** Match the following terms with their definitions:

- A. Gene – 1. Thread-like structure carrying genetic info
- B. Chromosome – 2. Variant form of a gene
- C. Allele – 3. Segment of DNA determining traits

Code:

A B C

- (a) 3 1 2
- (b) 1 2 3
- (c) 2 3 1
- (d) 3 2 1

**Question 63.** Which of the following provides the highest energy per gram?

- (a) Carbohydrate
- (b) Protein
- (c) Vitamin
- (d) Fat

**Question 64.** Choose the correct statement about essential nutrients:

- (a) Body can synthesize all essential nutrients.
- (b) They must be obtained from diet.
- (c) They provide no functional value.
- (d) They are only required during infancy.

**Question 65.** Which food is richest in plant-based protein?

- (a) Rice
- (b) Soybean
- (c) Banana
- (d) Potato

**Question 66.** Which of the following statements about the cornea is true?

- (a) It is responsible for color vision
- (b) It is vascular



(c) It is transparent and avascular

(d) It contains photoreceptors

**Question 67.** Which of the following taste types is correctly matched with its location on the tongue?

(a) Bitter – Tip of the tongue

(b) Salty – Back of the tongue

(c) Umami – Center of the tongue

(d) Sweet – Sides of the tongue

**Question 68.** Choose the incorrect statement regarding nuclear fusion:

(a) It powers the Sun and stars.

(b) It involves combining light nuclei.

(c) It produces more radioactive waste than fission.

(d) It requires extremely high temperature and pressure.

**Question 69.** Which of the following pair is not correctly matched?

(a) APSARA — First Indian research reactor

(b) DHRUVA — Natural uranium based

(c) CIRUS — Built with UK support

(d) AHWR — Thorium-based design

**Question 70.** Which of the following nuclear fuels is used in the second stage of India's nuclear programme?

(a) Uranium-233

(b) Plutonium-239

(c) Uranium-238

(d) Thorium-232

**Question 71.** Which of the following is not a fundamental unit in the SI system?

(a) Kelvin

(b) Candela

(c) Newton

(d) Mole

**Question 72.** Consider the following:

1. Velocity = m/s

2. Acceleration = m/s<sup>2</sup>

3. Force = kg·m/s

Which are correctly matched with their units?

(a) 1 and 2 only

(b) 2 and 3 only

(c) 1 and 3 only

(d) 1, 2 and 3

**Question 73.** Match the measurement devices with their quantities:

A. Barometer – 1. Temperature

B. Hygrometer – 2. Humidity

C. Altimeter – 3. Altitude

D. Thermometer – 4. Pressure

Code:

(a) A-1, B-3, C-4, D-2

(b) A-2, B-4, C-1, D-3

(c) A-4, B-1, C-2, D-3

(d) A-4, B-2, C-3, D-1

**Question 74.** Which one of the following has no unit?

(a) Velocity

(b) Density

(c) Strain

(d) Power

**Question 75.** Which law is also known as the "Law of Inertia"?

(a) Newton's First Law

(b) Newton's Second Law

(c) Newton's Third Law

(d) Law of Conservation of Momentum

**Question 76.** Consider the following:

Force is a vector quantity.

Force = mass × acceleration.

Which of the above are correct?

(a) Only 1

(b) Only 2

(c) Both 1 and 2

(d) Neither 1 nor 2

**Question 77.** Consider the following:

1. Retardation is negative acceleration.

2. Acceleration is the rate of change of velocity.

3. Velocity is a scalar quantity.

Which are correct?

(a) 1 and 2 only

(b) 2 and 3 only

(c) 1 and 3 only

(d) 1, 2 and 3

**Question 78.** Which of the following examples demonstrate Newton's Third Law of Motion?

1. Recoil of a gun
2. Jumping off a boat
3. A car moving due to engine force
4. Walking on the ground

Code:

(a) 1 and 2 only

(b) 1, 2 and 4 only

(c) 3 and 4 only

(d) All of the above

**Question 79.** Match the following physical quantities with their dimensions:

- A. Velocity – 1.  $[MLT^{-2}]$   
 B. Force – 2.  $[MLT^{-1}]$   
 C. Momentum – 3.  $[M^0LT^{-1}]$   
 D. Acceleration – 4.  $[LT^{-2}]$

Code:

(a) A-3, B-1, C-2, D-4

(b) A-4, B-1, C-2, D-3

(c) A-4, B-1, C-2, D-4

(d) A-3, B-2, C-1, D-4

**Question 80.** What happens to recoil velocity if the mass of gun is increased?

- (a) Increases  
 (b) Remains unchanged  
 (c) Decreases  
 (d) Becomes infinite

**Question 81.** Which type of friction is the least in magnitude?

- (a) Static Friction  
 (b) Sliding Friction  
 (c) Rolling Friction  
 (d) Fluid Friction

**Question 82.** Consider the following statements:

1. Work done against friction is always zero.
2. Work is scalar in nature.
3. 1 Joule =  $10^7$  erg.

Which of the statements is/are correct?

(a) 1 and 2 only

(b) 2 and 3 only

(c) 1 and 3 only

(d) 1, 2 and 3

**Question 83.** Which of the following examples demonstrate centrifugal force?

1. Clothes pushed outward in washing machine
2. Passenger pushed outward in a turning car
3. Moon revolving around Earth
4. Cream separation from milk

Code:

(a) 1, 2 and 4 only

(b) 1 and 2 only

(c) 3 and 4 only

(d) All of the above

**Question 84.** Why are roads banked on curves?

- (a) To beautify highways  
 (b) To reduce vehicle speed  
 (c) To provide centripetal force for safe turning  
 (d) To reduce tire pressure

**Question 85.** A stone is tied to a string and whirled in a circle. If the string breaks, the stone will:

- (a) Move toward the center  
 (b) Move in a spiral path  
 (c) Move tangentially to the circle  
 (d) Stop immediately

**Question 86.** Consider the following statements:

1. Potential energy depends on height.
2. KE increases with velocity.

Choose the correct option:

- (a) Only 1  
 (b) Only 2  
 (c) Both 1 and 2  
 (d) Neither 1 nor 2

**Question 87.** Why does the Moon not have an atmosphere?

- (a) It has no water  
 (b) It rotates slowly



(c) It has low escape velocity

(d) It is farther from the Sun

**Question 88.** The instrument used to measure atmospheric pressure is:

(a) Manometer

(b) Barometer

(c) Hydrometer

(d) Thermometer

**Question 89.** Which phenomenon is responsible for the formation of a rainbow?

(a) Dispersion

(b) Refraction

(c) Both (a) and (b)

(d) Reflection

**Question 90.** Which mirror is used in vehicles to see the traffic behind?

(a) Concave mirror

(b) Convex mirror

(c) Plane mirror

(d) Parabolic mirror

**Question 91.** Which of the following is measured by a voltmeter?

(a) Resistance

(b) Electric current

(c) Potential difference

(d) Power

**Question 92.** The resistance of a wire depends on:

1. Length

2. Area of cross-section

3. Material

Which are correct?

(a) 1 and 2 only

(b) 2 and 3 only

(c) 1 and 3 only

(d) 1, 2 and 3

**Question 93.** Which law states: "Current through a conductor is directly proportional to the potential difference across it"?

(a) Newton's Law

(b) Hooke's Law

(c) Faraday's Law

(d) Ohm's Law

**Question 94.** When does an object in a lift experience weightlessness?

(a) When lift accelerates upward

(b) When lift is at rest

(c) During free fall

(d) During deceleration

**Question 95.** Why does a hammer fall faster than a feather on Earth?

(a) Hammer is heavier

(b) Feather is lighter

(c) Air resistance affects feather more

(d) Gravity is stronger for hammer

**Question 96.** Why does a sharp needle penetrate better than a blunt one?

(a) Less weight

(b) More volume

(c) More surface area

(d) Greater pressure due to small area

**Question 97.** Pressure inside a fluid depends on:

1. Depth

2. Density

3. Acceleration due to gravity

Code:

(a) 1 and 2 only

(b) 1 and 3 only

(c) All of the above

(d) None of the above

**Question 98.** Match the phenomenon with principle:

A. Gyroscope – 1. Conservation of angular momentum

B. Hydraulic brakes – 2. Pascal's law

C. Pendulum swing – 3. Energy conservation

Code:

(a) A-1, B-2, C-3

(b) A-2, B-1, C-3

(c) A-3, B-1, C-2

(d) A-2, B-3, C-1

**Question 99.** Match the phenomenon with the cause:

- A. Capillary rise in plants – 1. Cohesive force  
 B. Needle floating on water – 2. Surface tension  
 C. Water forming droplets – 3. Adhesive force

Code:

- (a) A-1, B-2, C-3  
 (b) A-2, B-1, C-3  
 (c) A-3, B-2, C-1  
 (d) A-1, B-3, C-2

**Question 100.** Assertion (A): A soap bubble expands and floats in air.

Reason (R): Soap decreases water's surface tension, allowing expansion.

Code:

- (a) Both A and R are true, and R is the correct Explanation  
 (b) Both A and R are true, but R is not the correct Explanation  
 (c) A is true, R is false  
 (d) A is false, R is true

**Question 101.** A towel soaks up water due to:

- (a) Surface tension  
 (b) Adhesive force only  
 (c) Capillary action  
 (d) Gravity

**Question 102.** A fluid is flowing through a horizontal pipe. According to Bernoulli's theorem, when velocity increases:

- (a) Pressure increases  
 (b) Pressure decreases  
 (c) Density increases  
 (d) Flow stops

**Question 103.** Which physical quantity increases when a solid is heated?

- (a) Mass  
 (b) Density  
 (c) Length  
 (d) Weight

**Question 104.** A substance with high specific heat capacity will:

- (a) Heat up quickly  
 (b) Require less heat to change temperature  
 (c) Remain unaffected by heat  
 (d) Show slow temperature change

**Question 105.** Which of the following factors causes a depression in the melting point of ice?

- (a) Increasing temperature  
 (b) Increasing atmospheric pressure  
 (c) Presence of impurities  
 (d) Decreasing volume

**Question 106.** Choose the true statement from the following:

- (a) Boiling point of water is always 100°C.  
 (b) Freezing occurs only at temperatures below 0°C.  
 (c) Melting and freezing points of pure water are the same under standard pressure.  
 (d) Boiling does not depend on atmospheric pressure.

**Question 107.** Assertion (A): Wet clothes dry faster on a hot windy day.

Reason (R): Wind increases rate of evaporation.

Code:

- (a) Both A and R are true and R is the correct Explanation  
 (b) Both A and R are true but R is not the correct Explanation  
 (c) A is true, R is false  
 (d) A is false, R is true

**Question 108.** Triple point of water corresponds to:

- (a) 100°C  
 (b) 0°C  
 (c) 0.01°C  
 (d) -273.15°C

**Question 109.** Which mirror always forms a virtual, erect, and diminished image irrespective of the object's position?

- (a) Plane mirror  
 (b) Concave mirror  
 (c) Convex mirror  
 (d) Cylindrical mirror

**Question 110.** Which of the following uses concave mirrors?

- A. Solar cooker
- B. Rear-view mirror
- C. Shaving mirror

Select the correct Answer using the code:

- (a) Only A
- (b) A and C
- (c) A and B
- (d) All of the above

**Question 111.** The speed of light is maximum in:

- (a) Water
- (b) Air
- (c) Diamond
- (d) Vacuum

**Question 112.** The phenomenon of light splitting into its component colors is called:

- (a) Diffraction
- (b) Dispersion
- (c) Interference
- (d) Polarization

**Question 113.** When a ray travels from glass to air, it:

- (a) Slows down and bends towards normal
- (b) Speeds up and bends away from normal
- (c) Slows down and bends away
- (d) Remains undeviated

**Question 114.** Why is red used in danger signals?

- (a) It has maximum speed
- (b) It scatters the most
- (c) It has longest wavelength and least scattering
- (d) It is most intense

**Question 115.** Which of the following waves are electromagnetic in nature?

- 1. X-rays
- 2. Gamma rays
- 3. Sound waves
- 4. Microwaves

Select the correct code:

- (a) 1 and 2 only
- (b) 1, 2 and 4 only

(c) 2, 3 and 4 only

(d) All of the above

**Question 116.** Assertion (A): Resistance of a conductor increases with temperature.

Reason (R): Increase in temperature increases collisions among free electrons.

Code:

(a) Both A and R are true, and R is the correct Explanation

(b) A is true, R is false

(c) A is false, R is true

(d) Both A and R are false

**Question 117.** Which of the following devices uses electromagnetic induction?

- 1. Generator
- 2. Transformer
- 3. LED Bulb
- 4. Electric Motor

Code:

(a) 1 and 2 only

(b) 1, 2, and 4 only

(c) 1 and 4 only

(d) 2 and 3 only

**Question 118.** Choose the true statement from the following:

- (a) Electrons revolve randomly in the atom.
- (b) Electrons are present only inside the nucleus.
- (c) Neutrons carry a negative charge.
- (d) Protons and neutrons are located inside the nucleus.

**Question 119.** Which of the following acids is used in car batteries?

- (a) Hydrochloric acid
- (b) Sulphuric acid
- (c) Acetic acid
- (d) Nitric acid

**Question 120.** Which of the following gas is used in soft drinks to make them fizzy?

- (a) Oxygen
- (b) Hydrogen
- (c) Nitrogen
- (d) Carbon dioxide

**Question 121.** Which one of the following chemicals is used to ripen fruits artificially?

- (a) Calcium carbide
- (b) Sodium bicarbonate
- (c) Potassium iodide
- (d) Magnesium sulfate

**Question 122.** Which of the following metal is liquid at room temperature?

- (a) Mercury
- (b) Lead
- (c) Gallium
- (d) Both (a) and (c)

**Question 123.** Match the following:

List-I (Subatomic Particles) – List-II (Discoverer)

- A. Electron – 1. Chadwick
- B. Proton – 2. Thomson
- C. Neutron – 3. Rutherford

Code:

- |     | A | B | C |
|-----|---|---|---|
| (a) | 2 | 1 | 3 |
| (b) | 2 | 3 | 1 |
| (c) | 3 | 2 | 1 |
| (d) | 1 | 2 | 3 |

**Question 124.** Choose the true statement from the following:

- (a) Mendeleev's periodic law is based on atomic number.
- (b) Modern periodic table is based on atomic mass.
- (c) Mendeleev predicted undiscovered elements.
- (d) Newlands grouped all elements perfectly.

**Question 125.** Who discovered radioactivity?

- (a) Marie Curie
- (b) Pierre Curie
- (c) Henri Becquerel
- (d) Rutherford

**Question 126.** Consider the following statements:

1. Beta decay increases the atomic number by one.
2. Alpha decay decreases atomic number by two.

Which of the statements is/are correct?

- (a) Only 1
- (b) Only 2
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Question 127.** Which of the following is not an organic acid?

- (a) Citric acid
- (b) Acetic acid
- (c) Sulfuric acid
- (d) Lactic acid

**Question 128.** Choose the true statement:

- (a) All alkalis are bases but not all bases are alkalis
- (b) All bases are alkalis
- (c) Bases are always water-soluble
- (d) Alkalis are always insoluble

**Question 129.** Match List-I with List-II and choose the correct code.

List-I (Acid) – List-II (Use)

- A. Sulfuric acid – 1. Soft drinks
- B. Phosphoric acid – 2. Battery
- C. Nitric acid – 3. Explosives
- D. Acetic acid – 4. Vinegar

Code:

- |     | A | B | C | D |
|-----|---|---|---|---|
| (a) | 1 | 2 | 4 | 3 |
| (b) | 3 | 2 | 1 | 4 |
| (c) | 2 | 4 | 3 | 1 |
| (d) | 2 | 1 | 3 | 4 |

**Question 130.** The salt used in photography as fixer is:

- (a) Sodium bicarbonate
- (b) Sodium thiosulfate
- (c) Calcium carbonate
- (d) Potassium nitrate

**Question 131.** Choose the correctly matched pair:

- (a)  $\text{NaHCO}_3$  – Saltpeter
- (b)  $\text{KNO}_3$  – Baking Soda
- (c)  $\text{CaCO}_3$  – Limestone
- (d)  $\text{CaSO}_4$  – Washing Soda

**Question 132.** Which of the following salts is used in mirror making?

- (a) Silver nitrate
- (b) Sodium chloride
- (c) Sodium thiosulfate
- (d) Magnesium sulfate

**Question 133.** Which of the following metals is stored in kerosene to prevent accidental fire?

- (a) Iron
- (b) Zinc
- (c) Sodium
- (d) Aluminium

**Question 134.** Consider the following pairs:

1. Brass – Copper and Tin
2. Bronze – Copper and Zinc
3. German Silver – Copper, Zinc, Nickel

Which of the above pairs is/are correctly matched?

- (a) Only 3
- (b) 1 and 3 only
- (c) Only 2
- (d) All 3

**Question 135.** Assertion (A): Pure gold is rarely used in jewellery.

Reason (R): Pure gold is soft and lacks sufficient hardness for regular use.

Code:

- (a) Both A and R are true, and R is the correct Explanation of A
- (b) Both A and R are true, but R is not the correct Explanation of A
- (c) A is true but R is false
- (d) A is false but R is true

**Question 136.** Match the following:

List I (Ore) – List II (Metal)

- A. Bauxite – 1. Zinc
- B. Cassiterite – 2. Aluminium
- C. Siderite – 3. Iron
- D. Zincite – 4. Tin

Code:

A B C D

(a) 1 2 3 4

(b) 2 4 3 1

(c) 3 4 1 2

(d) 2 1 3 4

**Question 137.** Which of the following is used to prevent rusting of iron?

- (a) Mixing iron with sulphur
- (b) Keeping iron in oxygen-free chamber
- (c) Galvanization with zinc
- (d) Storing iron in acidic solutions

**Question 138.** Which hydrocarbon is used for fruit ripening?

- (a) Acetylene
- (b) Benzene
- (c) Methane
- (d) Ethylene

**Question 139.** Consider the following about TNT:

1. It is a yellow crystalline solid.
2. It is used in military explosives.
3. It is also called RDX.

Which are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

**Question 140.** Which of the following non-metals is the most reactive?

- (a) Oxygen
- (b) Fluorine
- (c) Nitrogen
- (d) Sulphur

**Question 141.** Consider the following statements:

1. Graphite is a good conductor of electricity.
2. Diamond conducts electricity due to free electrons.

Choose the correct option:

- (a) Only 1
- (b) Only 2
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Question 142.** Which of the following statements about Hydrogen is/are correct?

1. It forms covalent bonds.
2. It exists as a diatomic molecule.
3. It is a good conductor of electricity.

Select the correct Answer:

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

**Question 143.** Match the following:

- A. Rhombic Sulphur – 1. Plastic-like form
- B. Monoclinic Sulphur – 2. Needle-shaped crystals
- C. Plastic Sulphur – 3. Stable at room temp
- D. Sulphur Hexafluoride – 4. Electrical insulator

Code:

- (a) A-1, B-3, C-2, D-4
- (b) A-3, B-2, C-1, D-4
- (c) A-2, B-1, C-3, D-4
- (d) A-4, B-3, C-2, D-1

**Question 144.** Which of the following gases is primarily present in biogas?

- (a) Carbon dioxide
- (b) Hydrogen
- (c) Methane
- (d) Nitrogen

**Question 145.** Consider the following statements:

1. Fly ash bricks are eco-friendly.
2. Coal tar is used in road construction.
3. Petroleum yields petrochemicals.
4. Coke is used in fertilizer production.

Which of the above statements are correct?

- (a) 1, 2 and 3 only
- (b) 2, 3 and 4 only
- (c) 1 and 4 only
- (d) All of the above

**Question 146.** Which petroleum product is used for making road tar?

- (a) Diesel
- (b) Bitumen
- (c) Kerosene

(d) Natural gas

**Question 147.** The atomic number of an element represents:

- (a) Number of neutrons
- (b) Number of electrons in the outer shell
- (c) Number of protons in the nucleus
- (d) Atomic mass

**Question 148.** Which chemical is known as “laughing gas”?

- (a) Nitric oxide
- (b) Nitrous oxide
- (c) Nitrogen dioxide
- (d) Ammonia

**Question 149.** Which substance is added to toothpaste to prevent tooth decay?

- (a) Calcium carbonate
- (b) Fluoride
- (c) Sulphate
- (d) Magnesium

**Question 150.**

The process of separating dissolved solids from a liquid by evaporation and condensation is called:

- (a) Sedimentation
- (b) Filtration
- (c) Decantation
- (d) Distillation