

PGIMER B.SC NURSING SAMPLE PAPER 01

A) Time Allowed: 1 Hour 30 Minutes.

B) Maximum Marks: 100

C) Total Questions: 100

General Instructions:

- This question paper consists of five sections: Physics, Chemistry, Biology, English, and General Knowledge.
- Each section contains objective type questions with four multiple-choice options (A, B, C, D).
- +1 mark is awarded for each correct answer and 0.25 marks are deducted for each wrong answer.
- The question paper is available in English language only.

SECTION 1 - BIOLOGY

- Q1. Which of the following statements regarding the human reproductive cycle and embryonic development is correct?
- (a) The primary oocyte completes Meiosis-I during embryonic development.
 - (b) The secretion of human Chorionic Gonadotropin (hCG) initiates the degradation of the corpus luteum.
 - (c) Cleavage divisions during human development drastically increase the total mass and volume of the blastocyst compared to the zygote.
 - (d) The second meiotic division of the human ovum is completed only when a sperm penetrates the zona pellucida and plasma membrane.
- Q2. Which of the following is least infectious?
- (a) Leprosy
 - (b) Hepatitis
 - (c) Tuberculosis
 - (d) Conjunctivitis
- Q3. Which of the following is not a mosquito-borne disease?
- (a) Dengue fever
 - (b) Malaria
 - (c) Sleeping sickness
 - (d) Filariasis
- Q4. In certain amino acids, which element is present in addition to C, H, N and O?
- (a) Phosphorus
 - (b) Zinc
 - (c) Calcium
 - (d) Sulphur
- Q5. Which element is essential for transmission of impulses in nerve fibres?
- (a) Calcium
 - (b) Iron
 - (c) Sodium
 - (d) Zinc
- Q6. Which vitamin is very labile and easily destroyed during cooking and storage?
- (a) Vitamin A
 - (b) Vitamin B6

- (c) Vitamin C
- (d) Vitamin K

Q7. The compound used in anti-malarial drug is-

- (a) Aspirin
- (b) Neoprene
- (c) Isoprene
- (d) Chloroquine

Q8. Which of the following is a skin disease?

- (a) Anaemia
- (b) Pellagra
- (c) Osteomalacia
- (d) Rickets

Q9. The richest source of Vitamin D is—

- (a) Cod liver oil
- (b) Spinach
- (c) Milk
- (d) Cheese

Q10. Which test helps in the diagnosis of cancer?

- (a) X-ray
- (b) Urine test
- (c) Blood test
- (d) Biopsy

Q11. Which one of the following is an enzyme?

- (a) Glucagon
- (b) Insulin
- (c) Somatotropin
- (d) Trypsin

Q12. Which vitamin is provided by sunlight to the body?

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

Q13. Deficiency of which leads to dental caries?

- (a) Iron
- (b) Copper
- (c) Fluorine (Fluoride)
- (d) Zinc

Q14. Healing of wounds is hastened by vitamin—

- (a) A
- (b) E
- (c) C
- (d) K

Q15. Which disease is caused by the bite of a mad dog?

- (a) Hydrocele
- (b) Hydrophobia (Rabies)
- (c) Hydrocephalus
- (d) Hydroperitoneum

Q16. Which vegetable protein is considered as good as animal protein?

- (a) Soybean protein
- (b) Corn protein
- (c) Wheat protein
- (d) Bengal gram protein

Q17. Carotene in Indian cow's milk causes—

- (a) Creamish white colour
- (b) Yellow colour
- (c) Deep yellow colour
- (d) No change

Q18. A woman weighing 45 kg engaged in heavy physical work needs—

- (a) 2800 calories/day
- (b) 3000 calories/day
- (c) 25000 calories/day
- (d) 3700 calories/day

Q19. Foot-and-mouth disease is found in—

- (a) Cats and dogs
- (b) Cattle
- (c) Poultry
- (d) Humans

Q20. Which one of the following is a primate?

- (a) Bear
- (b) Otter
- (c) Loris
- (d) Pangolin

Q21. Mushrooms belong to—

- (a) Algae
- (b) Ferns
- (c) Fungi
- (d) Lichens

Q22. Food wrapped in newspaper is likely to get contaminated with—

- (a) Lead
- (b) Aluminium
- (c) Iron
- (d) Magnesium

Q23. Chemiosmotic ATP synthesis in both chloroplasts and mitochondria relies on a proton gradient. However, the mechanism of gradient formation differs. Which of the following accurately describes this difference?

- (a) In chloroplasts, protons accumulate in the stroma, while in mitochondria, they accumulate in the matrix.
- (b) In chloroplasts, protons are actively pumped into the thylakoid lumen, whereas in mitochondria, they accumulate in the intermembrane space.
- (c) Mitochondria use light energy to pump protons, whereas chloroplasts utilize the energy from breakdown of glucose directly.
- (d) Chloroplasts require NADH dehydrogenase to establish the proton gradient, whereas mitochondria rely exclusively on Photosystem II.

Q24. Which plant is used for green manuring in India?

- (a) Wheat
- (b) Sunhemp
- (c) Cotton

(d) Rice

Q25. The combination of foods providing protein quality nearest to that of meat is—

- (a) Wheat, dal and groundnuts
- (b) Bread and butter
- (c) Sprouted gram and groundnuts
- (d) Groundnuts and jaggery



SECTION 2 - CHEMISTRY

Q26. The chemical used as a fixer in photography is-

- (a) Sodium thiosulphate
- (b) Sodium sulphate
- (c) Borax
- (d) Ammonium sulphate

Q27. Water drops are spherical because of-

- (a) Viscosity
- (b) Density
- (c) Polarity
- (d) Surface tension

Q28. Aspirin is-

- (a) Acetyl salicylic acid
- (b) Sodium salicylate
- (c) Methyl salicylate
- (d) Ethyl salicylate

Q29. Which of the following compounds will not undergo a nucleophilic substitution reaction easily, even under drastic conditions?

- (a) Ethyl chloride
- (b) Chlorobenzene
- (c) Allyl chloride
- (d) Benzyl chloride

Q30. Which metal does not react with water to produce hydrogen?

- (a) Cadmium
- (b) Lithium
- (c) Potassium
- (d) Sodium

Q31. The most electronegative element among the following is-

- (a) Sodium
- (b) Bromine
- (c) Fluorine
- (d) Oxygen

Q32. Atomic number is equal to-

- (a) Number of electrons
- (b) Number of neutrons
- (c) Number of protons
- (d) Total number of protons and neutrons

Q33. Consider a standard lead storage battery during its discharging process. Which of the following chemical reactions correctly describes the process occurring at the anode?

- (a) $PbO_2(s) + SO_4^{2-}(aq) + 4H^+(aq) + 2e^- \rightarrow PbSO_4(s) + 2H_2O(l)$
- (b) $Pb(s) + SO_4^{2-}(aq) \rightarrow PbSO_4(s) + 2e^-$
- (c) $PbSO_4(s) + 2e^- \rightarrow Pb(s) + SO_4^{2-}(aq)$
- (d) $2H^+(aq) + 2e^- \rightarrow H_2(g)$

Q34. Vinegar is the trade name of-

- (a) Acetic acid
- (b) Chloroform
- (c) Ethyl alcohol
- (d) Carbon tetrachloride

Q35. Which element behaves chemically both as a metal and a non-metal (metalloid)?

- (a) Boron
- (b) Argon
- (c) Carbon
- (d) Xenon

Q36. Nail polish remover contains-

- (a) Acetone
- (b) Benzene
- (c) Petroleum ether
- (d) Acetic acid

Q37. Which option correctly defines the state of glass?

- (a) Crystalline solid
- (b) Super-cooled liquid
- (c) Condensed gas
- (d) Liquid crystal

Q38. Which element never exhibits a positive oxidation state in any of its compounds?

- (a) Oxygen
- (b) Chlorine
- (c) Fluorine
- (d) Carbon

Q39. Which material is suitable for water purification/softening?

- (a) Silicones
- (b) Zeolites
- (c) Asbestos
- (d) Quartz

Q40. The major constituent of biogas is-

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

Q41. Which of the following is present in emissions from unleaded petrol?

- (a) Carbon monoxide
- (b) Carbon dioxide
- (c) Ethylene
- (d) Hydrocarbons

Q42. Which is used in preparing matchsticks?

- (a) Chile saltpetre
- (b) Indian saltpetre
- (c) Red phosphorus
- (d) Sodium bicarbonate

Q43. In which case can components be separated using a separating funnel?

- (a) Mixture of acetone and water
- (b) Mixture of oil and water
- (c) Different gases in air
- (d) None of the above

Q44. Choose the incorrect statement-

- (a) Epsom salt is an ore containing sodium
- (b) Bauxite is an ore of aluminium

- (c) Asbestos is an ore containing calcium
 - (d) Milarite mineral contains nickel
- Q45. The purest common form of iron is-
- (a) Pig iron
 - (b) Cast iron
 - (c) Wrought iron
 - (d) None of the above
- Q46. The metal that does not give H_2 on treatment with dilute HCl is-
- (a) Zn
 - (b) Fe
 - (c) Ag
 - (d) Ca
- Q47. The number of gram-molecules (moles) of oxygen atoms in 6.02×10^{24} CO molecules is-
- (a) 1
 - (b) 0.5
 - (c) 5
 - (d) 10
- Q48. The most extensive, commercially useful source of thorium as monazite sand occurs in India at-
- (a) Orissa coast
 - (b) Travancore coast
 - (c) West Bengal coast
 - (d) Gujarat coast
- Q49. The main active constituent of tea and coffee is-
- (a) Nicotine
 - (b) Chlorophyll
 - (c) Caffeine
 - (d) Aspirin
- Q50. If 5.85 g of $NaCl$ (Molecular weight = 58.5) is dissolved in 90 g of pure water, what is the mole fraction of the solute ($NaCl$) in the solution?
- (a) 0.1
 - (b) 0.0196
 - (c) 0.05
 - (d) 0.02

SECTION 3 - PHYSICS

Q51. Mirage is due to-

- (a) Equal heating of different parts of the atmosphere
- (b) Magnetic disturbances in the atmosphere
- (c) Depletion of ozone layer in the atmosphere
- (d) Unequal heating of different parts of the atmosphere

Q52. A light-year is a unit of-

- (a) Time
- (b) Light
- (c) Intensity of light
- (d) Distance

Q53. The light from the Sun reaches Earth in nearly-

- (a) 8 minutes
- (b) 4 minutes
- (c) 2 minutes
- (d) 16 minutes

Q54. —is not used in the field of physics.

- (a) Stock value
- (b) Latent heat
- (c) Nuclear fusion
- (d) Refractive index

Q55. The working principle of a washing machine is-

- (a) Diffusion
- (b) Centrifugation
- (c) Reverse osmosis
- (d) Dialysis

Q56. The speed of light is minimum in-

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

Q57. Stars appear to move from east to west because-

- (a) Earth rotates from east to west
- (b) Earth rotates from west to east
- (c) All stars move from east to west
- (d) The background of stars moves from west to east

Q58. Radiocarbon (^{14}C) is produced in the atmosphere as a result of-

- (a) Action of solar radiations on CO_2 in the atmosphere
- (b) Collision between fast neutrons and nitrogen nuclei in the atmosphere
- (c) Action of ultraviolet light on atmospheric oxygen
- (d) Lightning discharge in the atmosphere

Q59. Nuclear sizes are expressed in the unit-

- (a) Tesla
- (b) Newton
- (c) Angstrom
- (d) Fermi

Q60. Planets do not twinkle because-

- (a) They are nearer to Earth and hence we receive a greater amount of light
- (b) They are very far away resulting in decreased intensity of light
- (c) They emit light of constant intensity
- (d) Their distance from Earth does not change with time

Q61. Absorption of ink by blotting paper involves-

- (a) Siphon action
- (b) Diffusion through the blotting
- (c) Capillary action
- (d) Viscosity of ink

Q62. RADAR is used for-

- (a) Receiving a signal in a radio receiver
- (b) Locating submerged submarines
- (c) Locating geostationary satellites
- (d) Detecting and locating the position of objects such as aeroplanes

Q63. Sound waves in air are-

- (a) Electromagnetic
- (b) Longitudinal
- (c) Polarized
- (d) Transverse

Q64. Sound of frequency below 20 Hz is called-

- (a) Audio sounds
- (b) Infrasonic
- (c) Supersonic
- (d) Ultrasonic

Q65. Select the scalar quantity-

- (a) Pressure
- (b) Force
- (c) Velocity
- (d) Acceleration

Q66. Metals are good conductors of electricity because-

- (a) They have high melting points
- (b) The atoms are lightly packed
- (c) They contain free electrons
- (d) All of the above

Q67. Moment of inertia is a-

- (a) Phasor
- (b) Scalar
- (c) Vector
- (d) Tensor

Q68. Sound travels fastest in-

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

Q69. One thousand microns is equal to-

- (a) 10^{-3} m
- (b) 10 m

- (c) 10^{-6} m
- (d) 10^{-12} r

Q70. Superconductors are substances which-

- (a) Offer no resistance to the flow of electricity
- (b) Offer high resistance to the flow of current
- (c) Conduct electricity at high temperatures
- (d) Conduct electricity at low temperature

Q71. Radio telescopes are better than optical telescopes because-

- (a) They can detect faint galaxies
- (b) They can work in cloudy conditions
- (c) They can work during day and night
- (d) All of the above

Q72. Intensity of sound at a point varies with distance from the source as-

- (a) Directly proportional to the square of distance
- (b) Directly proportional to distance
- (c) Inversely proportional to the square of distance
- (d) Inversely proportional to distance

Q73. Rainbow is due to-

- (a) Refraction and reflection of sunlight by water droplets
- (b) Absorption of sunlight in minute water droplets
- (c) Diffusion of sunlight through water droplets
- (d) Ionization of water deposits

Q74. Isotopes of an element contain-

- (a) Equal number of protons and electrons
- (b) Same number of protons, different number of neutrons
- (c) Same number of neutrons, different number of protons
- (d) Equal number of nucleons

Q75. The purpose of the choke in a tube light is to-

- (a) Induce low resistance
- (b) Induce high voltage
- (c) Induce low voltage
- (d) Induce high resistance

SECTION 4 - ENGLISH

Q76. The banyan tree has fallen _____ the road.

- (a) Above
- (b) In
- (c) Across
- (d) Between

Q77. Do not cry _____ the spilt milk.

- (a) To
- (b) Over
- (c) About
- (d) Upon

Q78. Sachin and Rama regularly subscribe _____ the Employment News.

- (a) To
- (b) For
- (c) In
- (d) Into

Q79. All of us should abide _____ the laws of our country.

- (a) By
- (b) On
- (c) To
- (d) In

Q80. Pratima is very much worried _____ her mother's health.

- (a) To
- (b) For
- (c) About
- (d) Of

Q81. Everyone in this universe is accountable _____ his actions.

- (a) For
- (b) About
- (c) Of
- (d) Against

Q82. The gifts were divided equally _____ the orphans.

- (a) Between
- (b) Among
- (c) In
- (d) To

Q83. I have been ill _____ last Sunday.

- (a) From
- (b) Since
- (c) On
- (d) Of

Q84. Regular exercise is conducive _____ health.

- (a) To
- (b) In
- (c) For
- (d) Of

Q85. He was fined and expelled _____ the school.

- (a) From
- (b) Out of
- (c) In
- (d) Inside

SECTION 5 - GENERAL KNOWLEDGE

- Q86. The "Montreux Record" is a register associated with which of the following international environmental frameworks?
- (a) Migratory Species Conservation (Bonn Convention)
 - (b) Transboundary Movement of Hazardous Wastes (Basel Convention)
 - (c) Wetlands of International Importance (Ramsar Convention)
 - (d) International Trade in Endangered Species (CITES)
- Q87. Which of the following constitutional provisions was famously described by Dr. B.R. Ambedkar as the "Heart and Soul of the Indian Constitution"?
- (a) Right to Freedom of Religion (Article 25)
 - (b) Right to Constitutional Remedies (Article 32)
 - (c) Directive Principles of State Policy (Article 39)
 - (d) Preamble of the Constitution
- Q88. The famous dynamic geographic phenomenon known as the "Grand Banks", recognized as one of the world's richest commercial fishing grounds, is formed by the convergence of which two ocean currents?
- (a) Kuroshio Current and Oyashio Current
 - (b) Gulf Stream and Labrador Current
 - (c) Benguela Current and Agulhas Current
 - (d) Canaries Current and North Atlantic Drift
- Q89. Who was the first Indian nationalist leader to estimate the national income of India and pioneer the "Drain of Wealth" theory during British rule?
- (a) Gopal Krishna Gokhale
 - (b) Mahadev Govind Ranade
 - (c) Dadabhai Naoroji
 - (d) Romesh Chunder Dutt
- Q90. In the context of global public health history, which country became the first in the world to completely eliminate mother-to-child transmission of both HIV and syphilis, receiving official validation from the WHO?
- (a) Cuba
 - (b) Thailand
 - (c) New Zealand
 - (d) Sweden

- Q91. The terms "Bull", "Bear", "Stag", and "Lame Duck" are specialized terminologies fundamentally associated with which economic sector?
- (a) Agricultural Commodity Markets
 - (b) Stock Exchange and Share Market
 - (c) International Banking Regulations
 - (d) Corporate Credit Rating Agencies
- Q92. Which ancient Indian treatise, deeply mapping historical statecraft, economic policy, and military strategy, is traditionally divided into 15 books (Adhikaranas)?
- (a) Manusmriti
 - (b) Arthashastra
 - (c) Mudrarakshasa
 - (d) Rajatarangini
- Q93. The "Pulitzer Prize", widely recognized as a pinnacle of excellence in journalism, literature, and musical composition, is administered and awarded annually by which prestigious institution?
- (a) Harvard University
 - (b) Columbia University
 - (c) Oxford University
 - (d) The Smithsonian Institution
- Q94. Which deep-sea trench is recognized as the deepest point in the entire Atlantic Ocean basin?
- (a) Mariana Trench
 - (b) Puerto Rico Trench
 - (c) Java Trench
 - (d) South Sandwich Trench
- Q95. The fundamental structural framework of the "Red Cross" organization was established following the horrific experiences of its founder, Henry Dunant, at which historic European battle in 1859?
- (a) Battle of Waterloo
 - (b) Battle of Solferino
 - (c) Battle of Magenta
 - (d) Battle of Sedan
- Q96. The specialized clinical test known as the "Mantoux Test" is widely administered in medical diagnostics to screen for exposure to which infectious disease?

- (a) Typhoid Fever
 - (b) Tuberculosis
 - (c) Hepatitis B
 - (d) Diphtheria
- Q97. Which state in India is traditionally celebrated as the birthplace of Kathakali, a highly stylized classical Indian dance-drama noted for its attractive make-up of characters, elaborate costumes, and detailed gestures?
- (a) Tamil Nadu
 - (b) Andhra Pradesh
 - (c) Karnataka
 - (d) Kerala
- Q98. Under the provisions of the Indian Constitution, who holds the official executive authority to appoint the Chief Election Commissioner of India?
- (a) The Prime Minister of India
 - (b) The Chief Justice of India
 - (c) The President of India
 - (d) The Speaker of the Lok Sabha
- Q99. The international body known as the "United Nations Environment Programme" (UNEP), which coordinates global responses to environmental issues, is headquartered in which city?
- (a) Geneva, Switzerland
 - (b) Nairobi, Kenya
 - (c) New York, USA
 - (d) Vienna, Austria
- Q100. Which prestigious national award is recognized as the highest civilian honor bestowed for exceptional service towards the advancement of art, literature, and science in India?
- (a) Padma Vibhushan
 - (b) Bharat Ratna
 - (c) Dadasaheb Phalke Award
 - (d) Param Vir Chakra

SOLUTIONS

Q1. Correct Answer: (D)

The second meiotic division is completed only after sperm entry into the ovum. This occurs during fertilization in human reproduction.

Q2. Correct Answer: (A)

Leprosy is the least infectious among the given diseases. It spreads only through prolonged close contact.

Q3. Correct Answer: (C)

Sleeping sickness is transmitted by the tsetse fly. It is not a mosquito-borne disease.

Q4. Correct Answer: (D)

Sulphur is present in amino acids like cysteine and methionine. These are called sulphur-containing amino acids.

Q5. Correct Answer: (C)

Sodium ions help in transmission of nerve impulses. They play a major role in action potential generation.

Q6. Correct Answer: (C)

Vitamin C is highly unstable during cooking and storage. Heat and oxygen destroy it easily.

Q7. Correct Answer: (D)

Chloroquine is used as an anti-malarial drug. It acts against Plasmodium parasites.

Q8. Correct Answer: (B)

Pellagra is caused by deficiency of niacin (Vitamin B3). It mainly affects the skin and nervous system.

Q9. Correct Answer: (A)

Cod liver oil is a rich natural source of Vitamin D. Vitamin D is important for healthy bones.

Q10. Correct Answer: (D)

Biopsy is used for accurate cancer diagnosis. It involves microscopic examination of tissues.

Q11. Correct Answer: (D)

Trypsin is a digestive enzyme secreted by the pancreas. The other options are hormones.

Q12. Correct Answer: (D)

Sunlight helps the body synthesize Vitamin D. Ultraviolet rays activate Vitamin D formation in skin.

Q13. Correct Answer: (C)

Fluoride deficiency leads to dental caries. It weakens tooth enamel and increases decay.

Q14. Correct Answer: (C)

Vitamin C promotes collagen formation and wound healing. It helps repair body tissues efficiently.

Q15. Correct Answer: (B)

Rabies or hydrophobia spreads through the bite of infected dogs. It is a fatal viral disease affecting the nervous system.

Q16. Correct Answer: (A)

Soybean protein has high biological value. It contains most essential amino acids.

Q17. Correct Answer: (B)

Carotene gives cow's milk a yellow color. It is a precursor of Vitamin A.

Q18. Correct Answer: (B)

Heavy physical work requires greater calorie intake. About 3000 calories/day are needed in this case.

Q19. Correct Answer: (B)

Foot-and-mouth disease mainly affects cattle. It is a contagious viral disease in livestock.

Q20. Correct Answer: (C)

Loris belongs to the primate group. Primates include monkeys, apes, and humans.

Q21. Correct Answer: (C)

Mushrooms belong to the kingdom Fungi. They reproduce by spores and lack chlorophyll.

Q22. Correct Answer: (A)

Newspaper ink may contain lead contamination. Lead is harmful when consumed with food.

Q23. Correct Answer: (B)

In chloroplasts, protons accumulate in the thylakoid lumen. In mitochondria, they accumulate in the intermembrane space.

Q24. Correct Answer: (B)

Sunhemp is commonly used for green manuring in India. It improves soil fertility and organic matter.

Q25. Correct Answer: (C)

Sprouted gram and groundnuts together provide better protein quality. Their amino acid composition resembles animal protein more closely.

Q26. Correct Answer: (A)

Sodium thiosulphate is used as a fixer in photography. It removes unreacted silver halides from the film.

Q27. Correct Answer: (D)

Water drops become spherical due to surface tension. Surface tension minimizes the surface area of liquid.

Q28. Correct Answer: (A)

Aspirin is chemically known as acetyl salicylic acid. It is commonly used as a pain reliever and antipyretic.

Q29. Correct Answer: (B)

Chlorobenzene does not undergo nucleophilic substitution easily. The $C - Cl$ bond acquires partial double bond character due to resonance.

Q30. Correct Answer: (A)

Cadmium does not react with water to produce hydrogen gas. Highly reactive metals like sodium and potassium do react.

Q31. Correct Answer: (C)

Fluorine is the most electronegative element. It has the strongest tendency to attract electrons.

Q32. Correct Answer: (C)

Atomic number is equal to the number of protons in the nucleus. It uniquely identifies an element.

Q33. Correct Answer: (B)

At the anode, lead gets oxidized into lead sulphate. Oxidation releases electrons during battery discharge.

Q34. Correct Answer: (A)

Vinegar is the common name for dilute acetic acid. It is widely used in cooking and preservation.

Q35. Correct Answer: (A)

Boron shows properties of both metals and non-metals. Therefore, it is classified as a metalloid.

Q36. Correct Answer: (A)

Acetone is commonly used in nail polish removers. It acts as an effective solvent.

Q37. Correct Answer: (B)

Glass is considered a super-cooled liquid. It lacks a definite crystalline structure.

Q38. Correct Answer: (C)

Fluorine never shows a positive oxidation state. It is the most electronegative element.

Q39. Correct Answer: (B)

Zeolites are used for water softening and purification. They remove calcium and magnesium ions from hard water.

Q40. Correct Answer: (B)

Methane is the major constituent of biogas. It is produced during anaerobic decomposition.

Q41. Correct Answer: (D)

Hydrocarbons are present in emissions from unleaded petrol. Incomplete combustion releases these pollutants.

Q42. Correct Answer: (C)

Red phosphorus is used in making matchsticks. It helps in ignition by friction.

Q43. Correct Answer: (B)

A separating funnel is used to separate immiscible liquids. Oil and water form separate layers.

Q44. Correct Answer: (A)

Epsom salt is magnesium sulphate, not a sodium compound. Its formula is $MgSO_4 \cdot 7H_2O$.

Q45. Correct Answer: (C)

Wrought iron is the purest common form of iron. It contains very low carbon content.

Q46. Correct Answer: (C)

Silver does not react with dilute hydrochloric acid. It is less reactive than hydrogen.

Q47. Correct Answer: (D)

6.02×10^{24} CO molecules contain 10 moles of oxygen atoms. Each CO molecule contains one oxygen atom.

Q48. Correct Answer: (B)

The Travancore coast is rich in monazite sand deposits. Monazite is an important source of thorium.

Q49. Correct Answer: (C)

Caffeine is the active stimulant present in tea and coffee. It stimulates the central nervous system.

Q50. Correct Answer: (B)

The mole fraction of NaCl is approximately 0.0196. It is calculated using moles of solute divided by total moles.

Q51. Correct Answer: (D)

Mirage occurs due to unequal heating of different layers of air. It causes bending of light rays because of atmospheric refraction.

Q52. Correct Answer: (D)

A light-year is a unit of distance. It represents the distance travelled by light in one year.

Q53. Correct Answer: (A)

Light from the Sun reaches Earth in about 8 minutes. The average distance between Sun and Earth is 1 AU.

Q54. Correct Answer: (A)

Stock value belongs to economics, not physics. The other options are important concepts in physics.

Q55. Correct Answer: (B)

A washing machine works on the principle of centrifugation. Rapid spinning separates water from clothes.

Q56. Correct Answer: (D)

The speed of light is minimum in glass. Light slows down more in denser media.

Q57. Correct Answer: (B)

Stars appear to move because Earth rotates from west to east. This creates an apparent east-to-west motion of stars.

Q58. Correct Answer: (B)

Radiocarbon is formed when neutrons collide with nitrogen nuclei. This process occurs in the upper atmosphere.

Q59. Correct Answer: (D)

Nuclear sizes are measured in fermi units. One fermi equals 10^{-15} meter.

Q60. Correct Answer: (A)

Planets do not twinkle because they are much closer to Earth. Their apparent size reduces atmospheric fluctuations.

Q61. Correct Answer: (C)

Blotting paper absorbs ink due to capillary action. Liquid rises through tiny pores against gravity.

Q62. Correct Answer: (D)

RADAR is used to detect and locate objects like aircraft. It works using reflected radio waves.

Q63. Correct Answer: (B)

Sound waves in air are longitudinal waves. Particles vibrate parallel to the direction of propagation.

Q64. Correct Answer: (B)

Sound frequencies below 20 Hz are called infrasonic waves. Humans cannot hear infrasonic sounds.

Q65. Correct Answer: (A)

Pressure is a scalar quantity because it has only magnitude. Force, velocity, and acceleration are vectors.

Q66. Correct Answer: (C)

Metals conduct electricity due to the presence of free electrons. These electrons move easily through the metal lattice.

Q67. Correct Answer: (D)

Moment of inertia is a tensor quantity. Its value depends on the axis of rotation.

Q68. Correct Answer: (B)

Sound travels fastest in steel because solids are more rigid. Particles are closely packed in solids.

Q69. Correct Answer: (A)

One thousand microns equal 10^{-3} meter. A micron is equal to 10^{-6} meter.

Q70. Correct Answer: (A)

Superconductors offer zero electrical resistance. This occurs below a critical low temperature.

Q71. Correct Answer: (D)

Radio telescopes can work day and night and even in cloudy weather. They detect radio waves from celestial objects.

Q72. Correct Answer: (C)

Sound intensity decreases inversely with the square of distance. This follows the inverse square law.

Q73. Correct Answer: (A)

Rainbow formation involves refraction and reflection of sunlight. Water droplets disperse light into different colors.

Q74. Correct Answer: (B)

Isotopes have the same number of protons but different neutrons. Hence they belong to the same element.

Q75. Correct Answer: (B)

The choke in a tube light produces high voltage during starting. This helps ionize the gas inside the tube.

Q76. Correct Answer: (C)

A tree generally falls across a road, blocking the path. The option “Above” is grammatically and logically incorrect.

Q77. Correct Answer: (B)

“Cry over spilt milk” is a common English idiom. It means not to worry about past mistakes.

Q78. Correct Answer: (A)

The correct phrase is “subscribe to”. It is commonly used for newspapers and magazines.

Q79. Correct Answer: (A)

The correct expression is “abide by the law”. It means to obey rules or regulations.

Q80. Correct Answer: (C)

“Worried about” is the correct prepositional usage. It expresses concern regarding something.

Q81. Correct Answer: (A)

A person is accountable for his actions. It refers to responsibility for one’s conduct.

Q82. Correct Answer: (B)

“Among” is used for more than two people or groups. The gifts were distributed among many orphans.

Q83. Correct Answer: (B)

“Since” is used with a specific point in time. It is commonly used in present perfect tense.

Q84. Correct Answer: (A)

The phrase “conducive to” means beneficial or favorable. Regular exercise is beneficial to health.

Q85. Correct Answer: (A)

A student is expelled from a school. “From” is the correct preposition used here.

Q86. Correct Answer: (C)

The Montreux Record is linked with the Ramsar Convention on wetlands. It lists wetlands facing ecological threats or environmental changes.

Q87. Correct Answer: (B)

Dr. B.R. Ambedkar called Article 32 the “Heart and Soul” of the Constitution. It guarantees the right to constitutional remedies.

Q88. Correct Answer: (B)

The Grand Banks are formed by the meeting of the Gulf Stream and Labrador Current. This convergence creates nutrient-rich fishing grounds.

Q89. Correct Answer: (C)

Dadabhai Naoroji introduced the “Drain of Wealth” theory. He explained how British rule economically exploited India.

Q90. Correct Answer: (A)

Cuba became the first country validated by WHO for eliminating mother-to-child transmission of HIV and syphilis. This was a major achievement in public health history.

Q91. Correct Answer: (B)

Terms like Bull, Bear, Stag, and Lam Duck belong to the stock market. They describe investor behavior and market conditions.

Q92. Correct Answer: (B)

The Arthashastra is an ancient Indian treatise on governance and economics. It is traditionally divided into 15 books.

Q93. Correct Answer: (B)

The Pulitzer Prize is awarded by Columbia University. It recognizes excellence in journalism and literature.

Q94. Correct Answer: (B)

The Puerto Rico Trench is the deepest point in the Atlantic Ocean. It lies north of Puerto Rico in the Caribbean region.

Q95. Correct Answer: (B)

Henry Dunant founded the Red Cross after witnessing the Battle of Solferino. The suffering of wounded soldiers inspired humanitarian reforms.

Q96. Correct Answer: (B)

The Mantoux Test is used to detect exposure to tuberculosis infection. It measures the body’s immune response to tuberculin.

Q97. Correct Answer: (D)

Kathakali originated in the state of Kerala. It is famous for elaborate costumes and expressive gestures.

Q98. Correct Answer: (C)

The President of India appoints the Chief Election Commissioner. This authority is provided under the Constitution of India.

Q99. Correct Answer: (B)

The headquarters of UNEP is located in Nairobi, Kenya. It coordinates international environmental activities.

Q100. Correct Answer: (B)

Bharat Ratna is the highest civilian award in India. It is awarded for exceptional national service and achievement.

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