

PGIMER B.SC NURSING SAMPLE PAPER 02

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 one of the following diseases is inheritable?

- (a) Leukaemia
- (b) Colour blindness
- (c) Malignancy
- (d) Hepatitis

Q2. Which elements are present in all proteins?

Carbon Hydrogen Oxygen Nitrogen

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

Q3. For which of the following diseases is no vaccine yet available?

- (a) Tetanus
- (b) Malaria
- (c) Measles
- (d) Mumps

Q4. Which vitamin is synthesised in the body by intestinal bacteria?

- (a) Vitamin B1
- (b) Vitamin B4
- (c) Vitamin D
- (d) Vitamin K

Q5. BCG vaccination (Bacillus Calmette–Guérin) gives immunity from—

- (a) Polio
- (b) Cholera
- (c) Smallpox
- (d) Tuberculosis

Q6. In which one of the following does antibody formation take place?

- (a) RBCs
- (b) Blood platelets
- (c) Blood plasma
- (d) Donnan's membrane

Q7. From an evolutionary point of view, which is closest to humans?

- (a) Dolphin
- (b) Flying fish
- (c) Shark
- (d) Tortoise

Q8. How do most insects respire?

- (a) Through skin
- (b) Through gills
- (c) By lungs
- (d) By tracheal system

Q9. The regulating centre for swallowing and vomiting is the—

- (a) Cerebellum
- (b) Cerebrum
- (c) Medulla oblongata
- (d) Pons

Q10. Production of which of the following is a function of the liver?

- (a) Lipase
- (b) Urea
- (c) Mucus
- (d) Hydrochloric acid

Q11. During sleep, a man's blood pressure—

- (a) Increases
- (b) Decreases
- (c) Remains constant
- (d) Fluctuates

Q12. Oncogene is responsible for—

- (a) AIDS
- (b) Typhoid
- (c) Malaria
- (d) Cancer

Q13. Which acid is produced when milk turns sour?

- (a) Acetic acid
- (b) Tartaric acid
- (c) Lactic acid
- (d) Butyric acid

Q14. Two richest known sources of edible protein are—

- (a) Meat and eggs
- (b) Milk and vegetables
- (c) Soybean and groundnut
- (d) Some algae and other micro-organisms

Q15. Which nutrients are most likely to be affected by food processing and storage?

- (a) Carbohydrates
- (b) Fats
- (c) Proteins
- (d) Vitamins

Q16. In the pitcher plant, which part becomes modified into the pitcher?

- (a) Stem
- (b) Leaf
- (c) Stipule
- (d) Petiole

Q17. In which animal is respiration done by skin?

- (a) Flying fish
- (b) Sea horse
- (c) Frog
- (d) Chameleon

Q18. Which bacteria help improve soil fertility?

- (a) Clostridium
- (b) Rhizobium
- (c) Salmonella
- (d) Staphylococcus

Q19. Which chamber of the human heart pumps fully oxygenated blood to the aorta and the body?

- (a) Right atrium

- (b) Left atrium
- (c) Right ventricle
- (d) Left ventricle

Q20. Which one of the following is a vitamin?

- (a) Citric acid
- (b) Folic acid
- (c) Glutamic acid
- (d) Linoleic acid

Q21. Which organism is responsible for converting milk into curd?

- (a) Fungi
- (b) Bacteria
- (c) Virus
- (d) None of these

Q22. In which animal is skin a respiratory organ?

- (a) Cockroach
- (b) Frog
- (c) Shark
- (d) Whale

Q23. A typical human rib cage consists of how many ribs?

- (a) 12
- (b) 14
- (c) 16
- (d) 24

Q24. What is the normal pH range of human blood?

- (a) 4.0–4.5
- (b) 6.45–6.55
- (c) 7.35–7.45
- (d) 8.25–8.35

Q25. Which of the following diseases is not caused by a virus?

- (a) Cholera
- (b) Chickenpox
- (c) Hepatitis
- (d) Measles

SECTION 2 - CHEMISTRY

Q26. Which radioisotope is most dangerous to handle (based on half-life)?

- (a) 3 billion years
- (b) 100 years
- (c) 0.01 minute
- (d) 13 days

Q27. The gas used for artificial ripening of green fruit is-

- (a) Ethylene
- (b) Ethane
- (c) Carbon dioxide
- (d) Acetylene

Q28. Zone refining is used for purification of-

- (a) Au
- (b) Ge
- (c) Ag
- (d) Cu

Q29. The main chemical constituent responsible for the flavour of cardamom oil is-

- (a) Cineole
- (b) Eugenol
- (c) Geraniol
- (d) Limonene

Q30. The molecule with highest percentage ionic character is-

- (a) HI
- (b) HF
- (c) HCl
- (d) HBr

Q31. The gas used in the manufacture of vanaspati from vegetable oil is-

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

Q32. The ionic radii of N^{3-} , O^{2-} , F^{-} and Na^{+} follow the order-

- (a) $N^{3-} > O^{2-} > F^{-} > Na^{+}$
- (b) $N^{3-} > Na^{+} > O^{2-} > F^{-}$
- (c) $Na^{+} > O^{2-} > N^{3-} > F^{-}$
- (d) $O^{2-} > F^{-} > Na^{+} > N^{3-}$

Q33. The graphite rods in a nuclear reactor-

- (a) React with U to release energy
- (b) Produce neutrons
- (c) Undergo combustion that triggers fission
- (d) Convert fast neutrons into thermal neutrons

Q34. The first metal used by humans was-

- (a) Iron
- (b) Copper
- (c) Gold
- (d) Bronze

Q35. The hydronium ion is-

- (a) H^{-}
- (b) HO^{-}
- (c) H_2
- (d) H_3O^{+}

Q36. The most electropositive element among the following is-

- (a) Na
- (b) Ca
- (c) K
- (d) Cs

Q37. The number of de Broglie waves fitting into the nth Bohr orbit is-

- (a) n^2
- (b) n
- (c) n-2
- (d) n^3

Q38. The mass of one Avogadro number of helium atoms is-

- (a) 1.00 g
- (b) 4.00 g
- (c) 8.00 g
- (d) $4 \times 6.02 \times 10^{23}$ g

Q39. Items amenable to detection by soft X-rays are-

- (a) Contrabands
- (b) Lead in bullets
- (c) Narcotics
- (d) Genuine coins from counterfeit coins

Q40. A material that can be deformed permanently by heat and pressure is called a-

- (a) Thermoplastic
- (b) Thermoset
- (c) Chemical compound
- (d) Polymer

Q41. Which of the following organic compounds is primary responsible for the sharp, characteristic smell of garlic?

- (a) Allyl methyl sulfide
- (b) Allicin (Diallyl thiosulfinate)
- (c) Ethanol
- (d) Acetic acid

Q42. The polymer used in making non-stick surface coatings for cookware is commonly known as—

- (a) Polyvinyl chloride (PVC)
- (b) Polystyrene
- (c) Polytetrafluoroethylene (PTFE / Teflon)
- (d) Polyethylene terephthalate (PET)

Q43. Which of the following subatomic particles has the least rest mass?

- (a) Proton
- (b) Electron
- (c) Neutron
- (d) Alpha particle

Q44. The organic acid present in abundance in tomatoes is—

- (a) Citric acid and Malic acid
 - (b) Lactic acid
 - (c) Tartaric acid
 - (d) Carbonic acid
- Q45. The conversion of a solid directly into its vapor state without passing through the liquid phase is called—
- (a) Evaporation
 - (b) Condensation
 - (c) Sublimation
 - (d) Deposition
- Q46. Which among the following is the most abundant rare/noble gas present in the Earth's atmosphere?
- (a) Helium
 - (b) Neon
 - (c) Argon
 - (d) Krypton
- Q47. What is the approximate percentage of carbon present in the hardest, most premium variety of coal known as Anthracite?
- (a) 40% to 55%
 - (b) 60% to 75%
 - (c) 85% to 95%
 - (d) Less than 35%
- Q48. Which law states that at a constant temperature, the volume of a given mass of gas is inversely proportional to its pressure?
- (a) Charles's Law
 - (b) Boyle's Law
 - (c) Avogadro's Law
 - (d) Gay-Lussac's Law
- Q49. The pH value of an aqueous solution that turns blue litmus paper into red must be—
- (a) Exactly 7
 - (b) Greater than 7
 - (c) Less than 7
 - (d) Between 8 and 14

Q50. Which gas is predominantly released when a reactive metal like Zinc reacts with dilute Hydrochloric acid?

- (a) Oxygen gas
- (b) Hydrogen gas
- (c) Carbon dioxide gas
- (d) Chlorine gas

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SECTION 3 - PHYSICS

Q51. Light from the laser is—

- (a) Monochromatic
- (b) Coherent
- (c) Divergent
- (d) Both A and B

Q52. Choke coil is used to control current in—

- (a) AC circuit only
- (b) DC circuit only
- (c) Both AC and DC circuits
- (d) Integrated circuits

Q53. Decibel is the unit used for—

- (a) Speed of light
- (b) Intensity of heat
- (c) Intensity of sound
- (d) Radio wave frequency

Q54. Short-sightedness or myopia can be corrected by using—

- (a) Convex lens
- (b) Concave lens
- (c) Cylindrical lens
- (d) Bifocal lens

Q55. It is more difficult to walk on sand than on concrete because—

- (a) Sand is soft and concrete hard
- (b) Friction between sand and feet is less than on concrete
- (c) Friction between sand and feet is more than on concrete
- (d) Sand is grainy and concrete smooth

Q56. Magnetism at the centre of a bar magnet is—

- (a) Minimum
- (b) Maximum
- (c) Zero
- (d) Minimum or maximum

Q57. Which is not emitted by radioactive substances?

- (a) Electrons (β)
- (b) Electromagnetic radiations (γ)
- (c) Alpha particles (α)
- (d) Neutrons

Q58. Lux is the SI unit of—

- (a) Intensity of illumination
- (b) Luminous efficiency
- (c) Luminous flux
- (d) Luminous intensity

Q59. Small oil films on water show brilliant colours due to—

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

Q60. Point A is at lower potential than point B. An electron between them will—

- (a) Move towards A
- (b) Move towards B
- (c) Move at right angles to AB
- (d) Remain at rest

Q61. Materials used for rain-proof coats/tents are water-proof due to—

- (a) Surface tension
- (b) Viscosity
- (c) Specific gravity
- (d) Elasticity

Q62. RADAR is used for—

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

Q63. Optical fibre works on the principle of—

- (a) Total internal reflection
- (b) Refraction
- (c) Scattering
- (d) Interference

Q64. What is the fundamental principle behind the working of a transformer?

- (a) Self-induction
- (b) Mutual induction
- (c) Coulomb's law
- (d) Ampere's law

Q65. When light travels from an optically denser medium to a rarer medium, the angle of refraction becomes 90 degrees at a specific angle of incidence. What is this angle of incidence called?

- (a) Angle of deviation
- (b) Polarizing angle
- (c) Critical angle
- (d) Angle of reflection

Q66. Which physical quantity remains constant when a planet revolves around the Sun in an elliptical orbit according to Kepler's second law?

- (a) Linear momentum
- (b) Kinetic energy
- (c) Angular momentum
- (d) Linear speed

Q67. Why do clear nights feel significantly colder than cloudy nights during winter?

- (a) Due to conduction from the upper atmosphere
- (b) Due to greenhouse radiation from the clouds
- (c) Due to terrestrial radiation escaping freely into space
- (d) Due to convective currents moving downward

Q68. What happens to the focal length of a convex lens when it is completely immersed in water?

- (a) It decreases
- (b) It increases
- (c) It remains exactly the same
- (d) It becomes zero

- Q69. Which electromagnetic wave has the shortest wavelength in the electromagnetic spectrum?
- (a) Ultraviolet rays
 - (b) Gamma rays
 - (c) X-rays
 - (d) Infrared waves
- Q70. A persistent echo can be clearly heard only if the reflecting surface is at a minimum threshold distance from the source of the sound. What is this approximate minimum distance?
- (a) 5 meters
 - (b) 17 meters
 - (c) 34 meters
 - (d) 100 meters
- Q71. What type of semiconductor is obtained when pure Silicon is doped with a trivalent impurity like Indium or Boron?
- (a) n-type semiconductor
 - (b) p-type semiconductor
 - (c) Intrinsic semiconductor
 - (d) Insulator
- Q72. If the distance between two point masses is doubled, what happens to the gravitational force acting between them?
- (a) It is doubled
 - (b) It becomes four times
 - (c) It is halved
 - (d) It becomes one-fourth
- Q73. Which fundamental thermodynamic process takes place at a perfectly constant volume?
- (a) Isothermal process
 - (b) Isobaric process
 - (c) Isochoric process
 - (d) Adiabatic process
- Q74. What is the equivalent resistance when three identical resistors, each of resistance R , are connected together in a parallel arrangement?
- (a) $3R$
 - (b) $R/3$

- (c) R
- (d) R^3

Q75. The working of a rocket propulsion system is a direct application of which physical conservation law?

- (a) Conservation of mass
- (b) Conservation of energy
- (c) Conservation of linear momentum
- (d) Conservation of angular momentum



SECTION 4 - ENGLISH

Q76. Identify the segment of the sentence that contains a grammatical error:

”The chief nursing officer, along with a dedicated team of clinical researchers, / are presenting / the groundbreaking patient-care data / at the annual national conference.”

- (a) The chief nursing officer, along with a dedicated team of clinical researchers,
- (b) are presenting
- (c) the groundbreaking patient-care data
- (d) at the annual national conference.

Q77. Choose the option that provides the most accurate improvement for the underlined segment:

If the triage team had recognized the early signs of anaphylaxis sooner, the patient’s critical condition could have been averted entirely.

- (a) had recognized
- (b) would have recognized
- (c) recognized
- (d) should recognize

Q78. Select the most appropriate meaning for the highlighted idiomatic expression:

The medical supervisor told the nervous intern to keep her chin up despite the stressful environment of the emergency ward.

- (a) To remain exceptionally vigilant during surgical procedures.
- (b) To stay cheerful, confident, and courageous in a difficult situation.
- (c) To acknowledge a mistake immediately to the department head.
- (d) To maintain a completely neutral expression when treating patients.

Q79. Identify the segment of the sentence that contains a grammatical error:

”Scarcely had the lab assistant finished / calibrating the diagnostic machinery / than a fresh batch of blood samples / arrived at the testing facility.”

- (a) Scarcely had the lab assistant finished
- (b) calibrating the diagnostic machinery
- (c) than a fresh batch of blood samples
- (d) arrived at the testing facility.

Q80. Choose the word that is closest in meaning (SYNONYM) to the underlined word:

The hospital board implemented stringent quality control guidelines to eliminate medication dispensation errors.

- (a) Flexible

- (b) Lax
- (c) Rigorous
- (d) Magnanimous

Q81. Choose the option that provides the most accurate improvement for the underlined segment:

The senior researcher decided to decline the pharmaceutical sponsorship because she was not only skeptical of the testing methodology but also feared its long-term ethical implications.

- (a) not only skeptical of the testing methodology but also feared
- (b) skeptical not only of the testing methodology but also fearing
- (c) not only skeptical of the testing methodology but also fearful of
- (d) not skeptical only of the testing methodology but also she was fearing

Q82. Choose the word that is most opposite in meaning (ANTONYM) to the given word:

ALACRITY

- (a) Lethargy
- (b) Zeal
- (c) Promptness
- (d) Aptitude

Q83. Identify the segment of the sentence that contains a grammatical error:

"The statistical charts generated by the new healthcare software / were more superior than the ones / compiled manually / by the clerical department."

- (a) The statistical charts generated by the new healthcare software
- (b) were more superior than the ones
- (c) compiled manually
- (d) by the clerical department.

Q84. Select the option that displays the correct spelling of the word meaning "a temporary rest or relief from something stressful or difficult":

- (a) Respeit
- (b) Respite
- (c) Respyte
- (d) Reespite

Q85. Choose the correct active voice conversion for the given passive sentence:

"The contaminated medical waste was safely disposed of by the sanitation crew before the surprise inspection."

- (a) The sanitation crew was safely disposing of the contaminated medical waste before the surprise inspection.
- (b) The sanitation crew safely disposed of the contaminated medical waste before the surprise inspection.
- (c) The sanitation crew had safely disposed the contaminated medical waste before surprise inspection.
- (d) Safely disposing of the contaminated medical waste was done by the sanitation crew before the surprise inspection.



SECTION 5 - GENERAL KNOWLEDGE

- Q86. The landmark "Alma-Ata Declaration" of 1978 is historically recognized as a pivotal global milestone in the development of which health sector?
- (a) Eradication of Smallpox globally
 - (b) Framework for Primary Health Care (PHC)
 - (c) Regulation of international clinical trials
 - (d) Establishment of the global maternal health safety net
- Q87. Which of the following international organizations partnered with the WHO to establish the "Triple Billion" targets aimed at addressing healthcare access and tracking global health emergencies?
- (a) United Nations Children's Fund (UNICEF)
 - (b) United Nations Development Programme (UNDP)
 - (c) World Bank Group
 - (d) World Health Organization (Independent Internal Framework)
- Q88. Under which Article of the Constitution of India can the President declare a Financial Emergency if the financial stability or credit of India is threatened?
- (a) Article 352
 - (b) Article 356
 - (c) Article 360
 - (d) Article 368
- Q89. The "National Institute of Virology" (NIV), which plays a leading role in tracking viral outbreaks and handling vaccine development protocols across India, is headquartered in which city?
- (a) New Delhi
 - (b) Pune
 - (c) Bengaluru
 - (d) Hyderabad
- Q90. The prestigious "Shanti Swarup Bhatnagar Prize" is awarded annually in India to recognize outstanding, breakthrough research and contributions in which domain?
- (a) Classical Music and Performing Arts
 - (b) Science and Technology
 - (c) Investigative Journalism
 - (d) Environmental Conservation and Forestry

- Q91. Which deep-sea strait separates the Andaman Islands from the Nicobar Islands in the Bay of Bengal / Indian Ocean basin?
- (a) Nine Degree Channel
 - (b) Ten Degree Channel
 - (c) Palk Strait
 - (d) Duncan Passage
- Q92. Who was the first Indian nationalist leader to systematically estimate the national income of India and pioneer the historic "Drain of Wealth" theory?
- (a) Gopal Krishna Gokhale
 - (b) Mahadev Govind Ranade
 - (c) Dadabhai Naoroji
 - (d) Romesh Chunder Dutt
- Q93. The global public health partnership known as the "Gavi Alliance" functions primarily to solve which global healthcare challenge?
- (a) Funding clinical research for rare oncology medications
 - (b) Improving access to new and underused vaccines for children in low-income nations
 - (c) Eradicating clean water scarcity in desert regions
 - (d) Organizing emergency field surgical kits during armed conflicts
- Q94. Which specific schedule of the Constitution of India contains the provisions regarding the allocation of seats in the Rajya Sabha (Council of States)?
- (a) Third Schedule
 - (b) Fourth Schedule
 - (c) Sixth Schedule
 - (d) Eighth Schedule
- Q95. The "Kupffer cells", which play a critical specialized immune defense role by destroying pathogens and worn-out blood cells, are resident macrophages located in which human organ?
- (a) Spleen
 - (b) Liver
 - (c) Kidneys
 - (d) Bone Marrow
- Q96. The historical "Poona Pact" of 1932 was a landmark agreement signed between which two prominent Indian leaders?
- (a) Mahatma Gandhi and Muhammad Ali Jinnah

- (b) Jawaharlal Nehru and Subhas Chandra Bose
 - (c) Mahatma Gandhi and Dr. B.R. Ambedkar
 - (d) Sardar Vallabhbhai Patel and Motilal Nehru
- Q97. The international financial entity known as the "International Development Association" (IDA), which provides concessional loans and grants to the world's poorest developing nations, is managed under which parent organization?
- (a) International Monetary Fund (IMF)
 - (b) World Bank Group
 - (c) World Economic Forum (WEF)
 - (d) Asian Development Bank (ADB)
- Q98. What is the standard international minimum runway length requirement specified for track and field athletics areas used for executing the long jump or triple jump?
- (a) Minimum 30 meters
 - (b) Minimum 40 meters
 - (c) Minimum 50 meters
 - (d) Minimum 60 meters
- Q99. The specialized ecological zone termed a "Mangrove forest" flourishes predominantly in coastal areas characterized by which type of natural environment?
- (a) High-altitude freshwater runoffs
 - (b) Intertidal saline or brackish water environments
 - (c) Sub-tropical arid sand tracts
 - (d) Deep inland river basins
- Q100. Who was the first Indian woman to win an individual Olympic medal in any athletic event?
- (a) P.T. Usha
 - (b) Karnam Malleswari
 - (c) Saina Nehwal
 - (d) Mary Kom

SOLUTIONS

Q1. Correct Answer: (B)

Colour blindness is a genetic disorder inherited through genes. It is commonly linked to the X-chromosome.

Q2. Correct Answer: (D)

All proteins contain carbon, hydrogen, oxygen, and nitrogen. These are the essential elements of amino acids.

Q3. Correct Answer: (B)

At present, no fully effective vaccine exists for malaria in standard usage. Malaria is caused by Plasmodium parasites transmitted by mosquitoes.

Q4. Correct Answer: (D)

Vitamin K is synthesized by intestinal bacteria in humans. It helps in blood clotting mechanisms.

Q5. Correct Answer: (D)

BCG vaccine provides protection against tuberculosis. It is prepared from weakened strains of Mycobacterium bovis.

Q6. Correct Answer: (C)

Antibodies are mainly present in blood plasma. They help the body fight infections and foreign particles.

Q7. Correct Answer: (A)

Dolphins are mammals and evolutionarily closer to humans. The other organisms belong to very distant groups.

Q8. Correct Answer: (D)

Most insects respire through a tracheal system. Tiny openings called spiracles help in gas exchange.

Q9. Correct Answer: (C)

The medulla oblongata controls swallowing and vomiting reflexes. It is a part of the hindbrain.

Q10. Correct Answer: (B)

The liver converts ammonia into urea. Urea is later excreted through urine.

Q11. Correct Answer: (D)

Blood pressure fluctuates during sleep depending on body activity. It usually becomes lower than daytime levels.

Q12. Correct Answer: (D)

Oncogenes are genes responsible for cancer development. Mutation in these genes causes uncontrolled cell division.

Q13. Correct Answer: (C)

Lactic acid is formed when milk turns sour. It is produced by bacterial fermentation of lactose.

Q14. Correct Answer: (C)

Soybean and groundnut are rich plant protein sources. They contain high amounts of essential amino acids.

Q15. Correct Answer: (D)

Vitamins are easily affected during food processing and storage. Heat and air exposure reduce vitamin content.

Q16. Correct Answer: (B)

In pitcher plants, the leaf gets modified into a pitcher. It helps trap and digest insects.

Q17. Correct Answer: (C)

Frogs can respire through their moist skin. This process is called cutaneous respiration.

Q18. Correct Answer: (B)

Rhizobium bacteria improve soil fertility by nitrogen fixation. They live symbiotically in root nodules of legumes.

Q19. Correct Answer: (D)

The left ventricle pumps oxygenated blood into the aorta. It supplies blood to the entire body.

Q20. Correct Answer: (B)

Folic acid is a vitamin belonging to the Vitamin B complex group. It is important for RBC formation.

Q21. Correct Answer: (B)

Bacteria convert milk into curd through fermentation. Lactobacillus is commonly involved in this process.

Q22. Correct Answer: (B)

Frog skin acts as a respiratory organ. Gas exchange occurs through its moist surface.

Q23. Correct Answer: (D)

Humans have 24 ribs arranged in 12 pairs. They form the rib cage protecting vital organs.

Q24. Correct Answer: (C)

Normal human blood pH ranges from 7.35 to 7.45. This slightly alkaline nature is essential for body functions.

Q25. Correct Answer: (A)

Cholera is caused by bacteria, not viruses. It is caused by *Vibrio cholerae*.

Q26. Correct Answer: (C)

A radioisotope with a very short half-life emits radiation very rapidly. Hence, it becomes extremely dangerous to handle.

Q27. Correct Answer: (A)

Ethylene gas is used for artificial ripening of fruits. It acts as a natural plant hormone.

Q28. Correct Answer: (B)

Zone refining is used for purification of germanium and silicon. These ultra-pure semiconductors are used in electronics.

Q29. Correct Answer: (A)

Cineole is the major constituent responsible for cardamom flavour. It is an aromatic compound present in essential oils.

Q30. Correct Answer: (B)

HF has the highest ionic character due to maximum electronegativity difference. Fluorine is the most electronegative element.

Q31. Correct Answer: (A)

Hydrogen gas is used in the manufacture of vanaspathi ghee. Vegetable oils undergo catalytic hydrogenation.

Q32. Correct Answer: (A)

These ions are isoelectronic species containing 10 electrons each. Radius decreases with increasing nuclear charge.

Q33. Correct Answer: (D)

Graphite acts as a moderator in nuclear reactors. It slows down fast neutrons into thermal neutrons.

Q34. Correct Answer: (B)

Copper was the first metal used by humans. It marked the beginning of the Chalcolithic Age.

Q35. Correct Answer: (D)

The hydronium ion is represented by H_3O^+ . It forms when water accepts a proton.

Q36. Correct Answer: (D)

Cesium is the most electropositive element among the options. It loses electrons very easily.

Q37. Correct Answer: (B)

According to Bohr's theory, the n th orbit contains n de Broglie wavelengths. This explains quantized electron orbits.

Q38. Correct Answer: (B)

One Avogadro number of helium atoms equals one mole. The molar mass of helium is 4 grams.

Q39. Correct Answer: (D)

Soft X-rays help distinguish genuine coins from counterfeit ones. Differences in internal structure become visible.

Q40. Correct Answer: (A)

Thermoplastics soften on heating and can be reshaped permanently. They are widely used in molding applications.

Q41. Correct Answer: (B)

Allicin is mainly responsible for the characteristic smell of garlic. It is a sulfur-containing organic compound.

Q42. Correct Answer: (C)

PTFE or Teflon is used for non-stick cookware coatings. It is highly resistant to heat and chemicals.

Q43. Correct Answer: (B)

Electrons possess the least rest mass among the listed particles. Their mass is approximately 9.11×10^{-31} kg.

Q44. Correct Answer: (A)

Tomatoes contain citric acid and malic acid in abundance. These acids contribute to their sour taste.

Q45. Correct Answer: (C)

Sublimation is the direct conversion of solid into vapor. Camphor and iodine commonly show sublimation.

Q46. Correct Answer: (C)

Argon is the most abundant noble gas in Earth's atmosphere. It constitutes nearly 0.93% of air.

Q47. Correct Answer: (C)

Anthracite coal contains the highest percentage of carbon. It is the hardest and highest-quality coal.

Q48. Correct Answer: (B)

Boyle's Law states that pressure is inversely proportional to volume. This relation holds at constant temperature.

Q49. Correct Answer: (C)

Acidic solutions turn blue litmus red. Acids always have pH values less than 7.

Q50. Correct Answer: (B)

Zinc reacts with dilute hydrochloric acid to release hydrogen gas. The reaction forms zinc chloride and hydrogen.

Q51. Correct Answer: (D)

Laser light is both monochromatic and coherent in nature. It consists of waves having same wavelength and phase.

Q52. Correct Answer: (A)

A choke coil controls current in AC circuits using inductive reactance. It offers negligible power loss compared to resistors.

Q53. Correct Answer: (C)

Decibel is the unit used to measure sound intensity. It expresses sound level on a logarithmic scale.

Q54. Correct Answer: (B)

Myopia is corrected using a concave lens. It diverges light rays before they enter the eye.

Q55. Correct Answer: (B)

Walking on sand is difficult because friction is less effective. Feet sink into sand, reducing forward push.

Q56. Correct Answer: (C)

Magnetism at the center of a bar magnet is nearly zero. Magnetic strength is maximum at the poles.

Q57. Correct Answer: (D)

Radioactive substances mainly emit alpha, beta, and gamma radiations. Neutrons are not commonly emitted in normal radioactive decay.

Q58. Correct Answer: (A)

Lux is the SI unit of illumination intensity. It measures luminous flux per unit area.

Q59. Correct Answer: (B)

Brilliant colours in oil films are caused by interference of light. Different wavelengths interfere constructively and destructively.

Q60. Correct Answer: (A)

An electron moves towards higher potential opposite to electric field direction. Hence it moves toward point A.

Q61. Correct Answer: (A)

Rain-proof materials resist water due to surface tension. Water droplets cannot pass easily through tiny pores.

Q62. Correct Answer: (D)

RADAR detects and locates moving objects like aircraft. It works using reflected radio waves.

Q63. Correct Answer: (A)

Optical fibres work on total internal reflection. Light signals repeatedly reflect within the fibre core.

Q64. Correct Answer: (B)

Transformers operate on the principle of mutual induction. A changing current in one coil induces current in another.

Q65. Correct Answer: (C)

The critical angle is the angle of incidence for which refraction becomes 90 degrees. Beyond this angle, total internal reflection occurs.

Q66. Correct Answer: (C)

According to Kepler's second law, angular momentum remains conserved. The planet sweeps equal areas in equal intervals of time.

Q67. Correct Answer: (C)

Clear nights allow terrestrial heat radiation to escape into space freely. Clouds usually trap heat and keep nights warmer.

Q68. Correct Answer: (B)

The focal length of a convex lens increases in water. Its refractive power decreases due to reduced refractive index difference.

Q69. Correct Answer: (B)

Gamma rays have the shortest wavelength in the electromagnetic spectrum. They possess the highest frequency and energy.

Q70. Correct Answer: (B)

An echo is heard distinctly when the reflector is about 17 meters away. This corresponds to the persistence of hearing.

Q71. Correct Answer: (B)

Doping silicon with trivalent impurities forms a p-type semiconductor. Holes become the majority charge carriers.

Q72. Correct Answer: (D)

According to Newton's law of gravitation, force varies inversely as square of distance. Doubling distance reduces force to one-fourth.

Q73. Correct Answer: (C)

An isochoric process occurs at constant volume. No work is done during volume change.

Q74. Correct Answer: (B)

For three identical resistors in parallel, equivalent resistance becomes $R/3$. Parallel combination reduces total resistance.

Q75. Correct Answer: (C)

Rocket propulsion works on conservation of linear momentum. Expelled gases produce an equal and opposite reaction force.

Q76. Correct Answer: (B)

The subject "The chief nursing officer" is singular in number. Therefore, the correct verb should be "is presenting".

Q77. Correct Answer: (A)

The sentence is already grammatically correct in third conditional form. "Had recognized" properly expresses a past unreal condition.

Q78. Correct Answer: (B)

"Keep your chin up" means to remain positive and confident. It is used to encourage someone during difficulties.

Q79. Correct Answer: (C)

The correct correlative conjunction is "Scarcely... when", not "than". Hence the grammatical error lies in segment C.

Q80. Correct Answer: (C)

"Stringent" means strict or rigorous in nature. It refers to rules that are firmly enforced.

Q81. Correct Answer: (C)

The sentence requires parallel structure after "not only... but also". "Fearful of" correctly balances the construction.

Q82. Correct Answer: (A)

"Alacrity" means eagerness or prompt enthusiasm. Its opposite meaning is lethargy or laziness.

Q83. Correct Answer: (B)

"Superior" itself is a comparative adjective. Using "more superior" creates a double comparison error.

Q84. Correct Answer: (B)

“Respite” is the correct spelling of the word. It means temporary relief or rest from difficulty.

Q85. Correct Answer: (B)

The active voice correctly identifies the doer of the action. “The sanitation crew safely disposed of the contaminated medical waste” is grammatically accurate.

Q86. Correct Answer: (B)

The Alma-Ata Declaration of 1978 emphasized Primary Health Care (PHC). It promoted “Health for All” as a global healthcare goal.

Q87. Correct Answer: (C)

The World Bank Group partnered with WHO for the Triple Billion targets. These targets focus on universal health coverage and emergency preparedness.

Q88. Correct Answer: (C)

Article 360 deals with Financial Emergency in India. It can be declared if financial stability is threatened.

Q89. Correct Answer: (B)

The National Institute of Virology (NIV) is located in Pune. It is India’s premier institute for viral research.

Q90. Correct Answer: (B)

The Shanti Swarup Bhatnagar Prize honors excellence in Science and Technology. It is one of India’s highest scientific awards.

Q91. Correct Answer: (B)

The Ten Degree Channel separates the Andaman and Nicobar Islands. It lies in the Bay of Bengal region.

Q92. Correct Answer: (C)

Dadabhai Naoroji proposed the Drain of Wealth theory. He also estimated India’s national income during British rule.

Q93. Correct Answer: (B)

Gavi Alliance works to improve vaccine access in poorer nations. It mainly supports immunization programs for children.

Q94. Correct Answer: (B)

The Fourth Schedule contains Rajya Sabha seat allocation details. It specifies representation of states and union territories.

Q95. Correct Answer: (B)

Kupffer cells are specialized macrophages found in the liver. They destroy pathogens and old blood cells.

Q96. Correct Answer: (C)

The Poona Pact was signed between Mahatma Gandhi and Dr. B.R. Ambedkar. It dealt with political representation of depressed classes.

Q97. Correct Answer: (B)

The International Development Association functions under the World Bank Group. It provides concessional loans to developing nations.

Q98. Correct Answer: (B)

The standard minimum runway length for long jump and triple jump is 40 meters. It allows athletes sufficient acceleration before take-off.

Q99. Correct Answer: (B)

Mangrove forests grow in saline or brackish intertidal regions. They are commonly found along tropical coastlines.

Q100. Correct Answer: (B)

Karnam Malleswari was the first Indian woman to win an Olympic medal. She won a bronze medal in weightlifting at the 2000 Sydney Olympics.