

PGIMER B.SC PARAMEDICAL SAMPLE PAPER 01

A) Time Allowed: 1 Hour 30 Minutes.

B) Maximum Marks: 100

C) Total Questions: 100

General Instructions:

- This paper consists of five sections: Biology (25), Chemistry (25), Physics (25), English (10), and General Knowledge (15).
- Each question has four options (A, B, C, D), with only one correct answer.
- +1 mark is awarded for each correct answer and 0.25 marks are deducted for each incorrect answer.
- The question paper is available in English language only.

SECTION 1 : PHYSICS

- Q1. A particle moves in a circle of radius R with constant angular velocity ω . The magnitude of its centripetal acceleration is:
- A) ωR
 - B) $\omega^2 R$
 - C) ωR^2
 - D) $\omega^2 R^2$
- Q2. The work done by the centripetal force on a particle moving in a circular path is:
- A) Positive
 - B) Negative
 - C) Zero
 - D) Maximum
- Q3. If the linear momentum of a body is increased by 100%, its kinetic energy increases by:
- A) 100%
 - B) 200%
 - C) 300%
 - D) 400%
- Q4. The escape velocity of a body from the Earth's surface depends on:
- A) Its mass
 - B) Its angle of projection
 - C) The acceleration due to gravity
 - D) Its initial velocity
- Q5. Which of the following properties of a wave remains unchanged when it passes from one medium to another?
- A) Frequency
 - B) Velocity
 - C) Wavelength
 - D) Amplitude
- Q6. The stress-strain graph for an ideal elastic material follows:
- A) A parabola
 - B) A straight line
 - C) An exponential curve
 - D) A circle
- Q7. The excess pressure inside a spherical soap bubble of radius r and surface tension T is:
- A) T/r
 - B) $2T/r$
 - C) $4T/r$
 - D) $8T/r$
- Q8. According to the kinetic theory of gases, the absolute zero of temperature is the temperature at which:
- A) All gases become liquid
 - B) Molecular motion ceases

- C) Water freezes
D) Volume of gas is zero
- Q9. The efficiency of a Carnot engine depends on:
A) The working substance
B) The temperatures of source and sink
C) The size of the engine
D) The speed of the engine
- Q10. A sound wave in a gas is a:
A) Transverse wave
B) Longitudinal wave
C) Stationary wave
D) Electromagnetic wave
- Q11. Two point charges $+q$ and $-q$ are separated by a small distance d . The electric field at the midpoint is:
A) Zero
B) Uniform
C) Directed from $+q$ to $-q$
D) Directed from $-q$ to $+q$
- Q12. The resistance of an ideal voltmeter is:
A) Zero
B) Low
C) High
D) Infinite
- Q13. A metallic wire of resistance R is stretched to double its length. Its new resistance will be:
A) $R/2$
B) $2R$
C) $4R$
D) $R/4$
- Q14. When a charged particle moves in a uniform magnetic field, its:
A) Speed changes
B) Kinetic energy changes
C) Path is a straight line
D) Path is a circle
- Q15. Lenz's law is a consequence of the law of conservation of:
A) Charge
B) Energy
C) Momentum
D) Mass
- Q16. The refractive index of a prism depends on:
A) The angle of the prism
B) The material of the prism

- C) The wavelength of incident light
D) All of the above
- Q17. In Young's double-slit experiment, the fringe width is:
A) Directly proportional to wavelength
B) Inversely proportional to distance between slits
C) Directly proportional to distance of screen
D) All of the above
- Q18. The photoelectric effect proves that light has:
A) Wave nature
B) Particle nature
C) Dual nature
D) None
- Q19. The de-Broglie wavelength of a particle of mass m and kinetic energy K is:
A) $h\sqrt{2mK}$
B) $h\sqrt{mK}$
C) $\sqrt{2mK}h$
D) $h2mK$
- Q20. In the Bohr model, the energy of an electron in the n^{th} orbit is proportional to:
A) n
B) n^2
C) $1/n$
D) $1/n^2$
- Q21. The half-life of a radioactive sample is 10 days. The amount left after 30 days is:
A) $1/2$
B) $1/4$
C) $1/8$
D) $1/16$
- Q22. In a forward-biased p-n junction diode, the width of the depletion layer:
A) Increases
B) Decreases
C) Remains constant
D) Becomes zero
- Q23. The output of a NAND gate is low when:
A) Both inputs are low
B) Both inputs are high
C) One input is low
D) None of the above
- Q24. A body dropped from a height h reaches the ground in time t . If dropped from $4h$, the time taken is:
A) $2t$
B) $4t$
C) $t/2$
D) $\sqrt{2}t$

Q25. The moment of inertia of a disc of mass M and radius R about its central axis is:

- A) MR^2
- B) $\frac{1}{2}MR^2$
- C) $\frac{2}{5}MR^2$
- D) $\frac{1}{4}MR^2$



SECTION 2 : CHEMISTRY

- Q26. Which of the following molecules has a zero dipole moment?
- A) H_2O
 - B) NF_3
 - C) BF_3
 - D) SO_2
- Q27. The hybridization of the central atom in XeF_4 is:
- A) sp^3
 - B) sp^3d
 - C) sp^3d^2
 - D) dsp^2
- Q28. According to MO theory, the bond order of the O_2^{2-} ion is:
- A) 1
 - B) 1.5
 - C) 2
 - D) 2.5
- Q29. Which transition metal ion is colorless in aqueous solution?
- A) Cu^{2+}
 - B) Fe^{3+}
 - C) Zn^{2+}
 - D) Ni^{2+}
- Q30. The reaction $2A + B \rightarrow C$ is found to be first order in A and zero order in B. The rate law is:
- A) $k[A]^2[B]$
 - B) $k[A][B]$
 - C) $k[A]$
 - D) $k[A]^2$
- Q31. Which of the following is a Bronsted-Lowry acid but not a Lewis acid?
- A) BF_3
 - B) NH_3
 - C) H_2O
 - D) $AlCl_3$
- Q32. The process of extracting gold using dilute $NaCN$ solution is known as:
- A) Hall-Heroult process
 - B) MacArthur-Forrest process
 - C) Mond process
 - D) Zone refining
- Q33. Which of the following defect in crystals lowers the density of the substance?
- A) Frenkel
 - B) Schottky
 - C) Interstitial
 - D) F-center

- Q34. The most stable carbocation among the following is:
A) Methyl
B) Ethyl
C) Isopropyl
D) Tert-butyl
- Q35. The Cannizzaro reaction is NOT given by:
A) Formaldehyde
B) Benzaldehyde
C) Acetaldehyde
D) 2,2-Dimethylpropanal
- Q36. Which of the following is an example of a condensation polymer?
A) Teflon
B) Nylon-6,6
C) PVC
D) Polyethylene
- Q37. The half-life of a first-order reaction is 60 minutes. The time required for 75% completion is:
A) 30 min
B) 60 min
C) 90 min
D) 120 min
- Q38. Which reagent is used to convert an aldehyde to an alkane in the Wolff-Kishner reduction?
A) $Zn(Hg)/HCl$
B) NH_2NH_2/KOH
C) $LiAlH_4$
D) $NaBH_4$
- Q39. The coordination number of Na^+ in an $NaCl$ crystal lattice is:
A) 4
B) 6
C) 8
D) 12
- Q40. Which of the following oxides is amphoteric?
A) Na_2O
B) CaO
C) Al_2O_3
D) CO_2
- Q41. The formal charge on the central Oxygen atom in the Ozone (O_3) molecule is:
A) 0
B) +1
C) -1
D) +2

- Q42. Which molecule exhibits geometrical isomerism?
- A) 1-Butene
 - B) 2-Butene
 - C) 2-Methylpropene
 - D) Propane
- Q43. The Arrhenius equation is given by:
- A) $k = Ae^{-E_a/RT}$
 - B) $k = Ae^{E_a/RT}$
 - C) $k = E_a e^{-A/RT}$
 - D) $k = Ae^{-RT/E_a}$
- Q44. Which among the following is the strongest acid?
- A) CH_3COOH
 - B) $ClCH_2COOH$
 - C) $Cl_2CHCOOH$
 - D) Cl_3CCOOH
- Q45. The number of stereoisomers for 2,3-dichlorobutane is:
- A) 1
 - B) 2
 - C) 3
 - D) 4
- Q46. Which catalyst is used in the contact process for the manufacture of H_2SO_4 ?
- A) V_2O_5
 - B) Fe
 - C) Ni
 - D) Pt
- Q47. The magnetic moment of an ion with 3 unpaired electrons is:
- A) 1.73 BM
 - B) 2.82 BM
 - C) 3.87 BM
 - D) 4.90 BM
- Q48. Which of the following is an ambident nucleophile?
- A) OH^-
 - B) CN^-
 - C) H_2O
 - D) Cl^-
- Q49. The geometry of $[Ni(CN)_4]^{2-}$ complex is:
- A) Tetrahedral
 - B) Square planar
 - C) Octahedral
 - D) Trigonal bipyramidal
- Q50. Which gas is released when a metal carbonate reacts with a mineral acid?
- A) H_2
 - B) O_2

- C) CO_2
- D) N_2



SECTION 3 : BIOLOGY

- Q51. Which specific enzyme is responsible for synthesizing a short RNA primer to initiate DNA replication?
- A) DNA Polymerase I
 - B) DNA Primase
 - C) Helicase
 - D) DNA Ligase
- Q52. Which immunoglobulin is known to cross the placenta to provide passive immunity to the fetus?
- A) IgA
 - B) IgG
 - C) IgM
 - D) IgE
- Q53. In the human nephron, which segment is responsible for the greatest percentage of water reabsorption?
- A) Proximal Convoluted Tubule
 - B) Loop of Henle
 - C) Distal Convoluted Tubule
 - D) Collecting Duct
- Q54. Which of the following describes the function of the T-tubules in muscle fibers?
- A) Storing calcium ions
 - B) Rapid transmission of action potentials
 - C) Anchoring actin filaments
 - D) Generating ATP
- Q55. During the electron transport chain, protons are pumped from the matrix into which location?
- A) Cytosol
 - B) Intermembrane space
 - C) Mitochondrial matrix
 - D) Nucleus
- Q56. What is the primary role of surfactant produced by Type II pneumocytes?
- A) Facilitating gas exchange
 - B) Reducing surface tension in alveoli
 - C) Phagocytosing bacteria
 - D) Regulating lung pH
- Q57. Which phase of meiosis is characterized by the presence of chiasmata?
- A) Leptotene
 - B) Zygotene
 - C) Diplotene
 - D) Pachytene
- Q58. Which enzyme converts angiotensin I to angiotensin II?
- A) Renin

- B) Angiotensin-Converting Enzyme (ACE)
 - C) Aldosterone synthase
 - D) Erythropoietin
- Q59. The Wobble Hypothesis explains which phenomenon?
- A) Degeneracy of the genetic code
 - B) DNA replication accuracy
 - C) Protein folding patterns
 - D) Ribosome assembly
- Q60. Which of the following is an example of an autosomal dominant disorder?
- A) Cystic fibrosis
 - B) Huntington's disease
 - C) Sickle cell anemia
 - D) Hemophilia A
- Q61. What is the result of non-disjunction during Meiosis I?
- A) Normal gametes only
 - B) Gametes with $n + 1$ or $n - 1$ chromosomes
 - C) Polyploidy
 - D) Mitotic failure
- Q62. Which pancreatic cells are responsible for the secretion of insulin?
- A) Alpha cells
 - B) Beta cells
 - C) Delta cells
 - D) F-cells
- Q63. The Okazaki fragments refer to short segments of DNA found on which strand?
- A) Leading strand
 - B) Lagging strand
 - C) Coding strand
 - D) Template strand
- Q64. The primary structure of a protein is defined by:
- A) Hydrogen bonds
 - B) The linear sequence of amino acids
 - C) Interaction between R-groups
 - D) The overall folding
- Q65. Which hormone is released by the juxtaglomerular apparatus in response to low blood pressure?
- A) Renin
 - B) Aldosterone
 - C) Vasopressin
 - D) Atrial Natriuretic Peptide
- Q66. What is the role of bile salts in digestion?
- A) Emulsification of fats
 - B) Breaking down proteins

- C) Neutralizing stomach acid
 - D) Digesting starches
- Q67. Which stage of the cell cycle involves the replication of DNA?
- A) G1 phase
 - B) S phase
 - C) G2 phase
 - D) M phase
- Q68. Which vitamin is synthesized by human intestinal bacteria?
- A) Vitamin C
 - B) Vitamin K
 - C) Vitamin A
 - D) Vitamin D
- Q69. What happens to the diaphragm during inspiration?
- A) It relaxes
 - B) It contracts and flattens
 - C) It remains in a fixed position
 - D) It moves inwards
- Q70. Which blood vessel carries oxygenated blood from the lungs to the heart?
- A) Pulmonary artery
 - B) Pulmonary vein
 - C) Aorta
 - D) Superior vena cava
- Q71. The TATA box is a sequence found in which region of a eukaryotic gene?
- A) Exon
 - B) Intron
 - C) Promoter
 - D) Terminator
- Q72. Which organelle is often referred to as the suicide bag of the cell?
- A) Mitochondria
 - B) Lysosomes
 - C) Golgi apparatus
 - D) Ribosome
- Q73. What is the function of reverse transcriptase in HIV?
- A) Synthesizing RNA from DNA
 - B) Synthesizing DNA from RNA
 - C) Repairing viral DNA
 - D) Breaking down viral RNA
- Q74. Which molecule acts as the final electron acceptor in anaerobic glycolysis?
- A) Oxygen
 - B) Pyruvate
 - C) NAD^+
 - D) Glucose

Q75. Which hormone is essential for the maturation of T-lymphocytes?

- A) Thyroxine
- B) Thymosin
- C) Cortisol
- D) Adrenaline



SECTION 4 : ENGLISH

- Q76. Choose the correct sentence in reported speech: He said, "I am working on a new project."
- A) He said that he was working on a new project.
 - B) He said that he is working on a new project.
 - C) He said that I was working on a new project.
 - D) He said he has been working on a new project.
- Q77. Which word is a synonym for "Meticulous"?
- A) Careless
 - B) Diligent
 - C) Hasty
 - D) Indifferent
- Q78. Fill in the blank: "Hardly had he finished his work _____ the lights went out."
- A) than
 - B) when
 - C) then
 - D) as
- Q79. Which of the following is the correct spelling?
- A) Efervescent
 - B) Effervescent
 - C) Effervesent
 - D) Efervesent
- Q80. Identify the passive voice form of: "She is writing a letter."
- A) A letter was written by her.
 - B) A letter is being written by her.
 - C) A letter is written by her.
 - D) A letter has been written by her.
- Q81. Select the correct collective noun for a group of "lions".
- A) Herd
 - B) Pride
 - C) Pack
 - D) School
- Q82. Which of these words is an antonym for "Vague"?
- A) Precise
 - B) Ambiguous
 - C) Unclear
 - D) Obscure
- Q83. Fill in the blank with the correct preposition: "He died _____ cancer."
- A) of
 - B) from
 - C) with
 - D) by

- Q84. Choose the correctly punctuated sentence.
- A) The teacher said, "Everyone must study hard."
 - B) The teacher said "Everyone must study hard".
 - C) The teacher said: "everyone must study hard."
 - D) The teacher said Everyone must study hard.
- Q85. Identify the meaning of the idiom: "To beat about the bush."
- A) To be very direct
 - B) To avoid the main topic
 - C) To win a competition
 - D) To be extremely busy
- Q86. Which sentence is grammatically correct?
- A) She have many books.
 - B) She has many books.
 - C) She have had many books.
 - D) She were having many books.
- Q87. The word "altruist" refers to a person who:
- A) Only cares about themselves
 - B) Is unselfishly concerned for others
 - C) Enjoys hurting others
 - D) Is afraid of people
- Q88. Which sentence contains a dangling modifier?
- A) Running to the bus, my bag fell.
 - B) Running to the bus, I dropped my bag.
 - C) I dropped my bag while running to the bus.
 - D) As I ran to the bus, I dropped my bag.
- Q89. Fill in the blank: "He is _____ than his brother."
- A) taller
 - B) tall
 - C) tallest
 - D) more tall
- Q90. Select the correctly spelled word.
- A) Receive
 - B) Recieve
 - C) Receeve
 - D) Resieve

SECTION 5 : GENERAL KNOWLEDGE

- Q91. Who was the first person to set foot on the moon?
A) Buzz Aldrin
B) Yuri Gagarin
C) Neil Armstrong
D) Michael Collins
- Q92. The “Great Barrier Reef” is located off the coast of which country?
A) Brazil
B) Australia
C) Indonesia
D) South Africa
- Q93. Which is the largest gland in the human body?
A) Pancreas
B) Thyroid
C) Liver
D) Adrenal
- Q94. “World Health Day” is celebrated on:
A) April 7
B) June 5
C) December 1
D) May 1
- Q95. Which river is known as the “Sorrow of Bihar”?
A) Gandak
B) Kosi
C) Son
D) Bagmati
- Q96. The “Statue of Liberty” was gifted to the United States by:
A) Germany
B) France
C) United Kingdom
D) Canada
- Q97. Who is known as the “Father of the Indian Constitution”?
A) Jawaharlal Nehru
B) Mahatma Gandhi
C) B.R. Ambedkar
D) Sardar Patel
- Q98. Which layer of the atmosphere contains the ozone layer?
A) Troposphere
B) Stratosphere
C) Mesosphere
D) Thermosphere

Q99. The headquarters of the International Court of Justice is in:

- A) Geneva
- B) New York
- C) The Hague
- D) Rome

Q100. Which gas is most abundant in the Earth's atmosphere?

- A) Oxygen
- B) Carbon Dioxide
- C) Nitrogen
- D) Argon



SOLUTIONS

Q1. Correct Answer: (B)

The centripetal acceleration is given by:

$$a_c = \omega^2 R$$

Q2. Correct Answer: (C)

Centripetal force is always perpendicular to displacement, so the work done is zero.

Q3. Correct Answer: (C)

$$K = \frac{p^2}{2m}$$

If momentum doubles, kinetic energy becomes four times. Thus increase:

$$(4K - K) = 3K = 300\%$$

Q4. Correct Answer: (C)

Escape velocity depends on:

$$v_e = \sqrt{2gR}$$

Hence it depends on the acceleration due to gravity.

Q5. Correct Answer: (A)

Frequency remains constant when a wave passes from one medium to another.

Q6. Correct Answer: (B)

An ideal elastic material obeys Hooke's law and has a linear stress-strain graph.

Q7. Correct Answer: (C)

For a soap bubble:

$$\Delta P = \frac{4T}{r}$$

Q8. Correct Answer: (B)

At absolute zero, molecular motion theoretically ceases.

Q9. Correct Answer: (B)

Carnot efficiency:

$$\eta = 1 - \frac{T_2}{T_1}$$

It depends only on source and sink temperatures.

Q10. Correct Answer: (B)

Sound waves in gases are longitudinal waves.

Q11. Correct Answer: (C)

At the midpoint, electric field due to both charges is directed from positive to negative charge.

Q12. Correct Answer: (D)

An ideal voltmeter has infinite resistance.

Q13. Correct Answer: (C)

$$R = \rho \frac{L}{A}$$

When length doubles, area becomes half, so:

$$R' = 4R$$

Q14. Correct Answer: (D)

A charged particle in a uniform magnetic field moves in a circular path.

Q15. Correct Answer: (B)

Lenz's law is based on the law of conservation of energy.

Q16. Correct Answer: (D)

Refractive index depends on prism material, wavelength, and prism geometry.

Q17. Correct Answer: (D)

Fringe width:

$$\beta = \frac{\lambda D}{d}$$

Hence all three statements are correct.

Q18. Correct Answer: (B)

Photoelectric effect demonstrates the particle nature of light.

Q19. Correct Answer: (A)

De-Broglie wavelength:

$$\lambda = \frac{h}{\sqrt{2mK}}$$

Q20. Correct Answer: (D)

Bohr energy:

$$E_n \propto \frac{1}{n^2}$$

Q21. Correct Answer: (C)

After three half-lives:

$$\left(\frac{1}{2}\right)^3 = \frac{1}{8}$$

Q22. Correct Answer: (B)

Forward bias decreases the depletion layer width.

Q23. Correct Answer: (B)

A NAND gate gives LOW output only when both inputs are HIGH.

Q24. Correct Answer: (A)

$$t = \sqrt{\frac{2h}{g}}$$

For height $4h$:

$$t' = \sqrt{\frac{8h}{g}} = 2t$$

Q25. Correct Answer: (B)

Moment of inertia of a solid disc about its central axis:

$$I = \frac{1}{2}MR^2$$

Q26. Correct Answer: (C)

BF_3 has a trigonal planar symmetric structure, so its dipole moment is zero.

Q27. Correct Answer: (C)

In XeF_4 , xenon undergoes sp^3d^2 hybridization.

Q28. Correct Answer: (A)

For O_2^{2-} :

$$BondOrder = \frac{N_b - N_a}{2} = 1$$

Q29. Correct Answer: (C)

Zn^{2+} has completely filled $3d^{10}$ orbitals and is colorless.

Q30. Correct Answer: (C)

Since the reaction is first order in A and zero order in B:

$$Rate = k[A]$$

Q31. Correct Answer: (C)

H_2O can donate a proton and act as a Bronsted acid, but is not typically considered a Lewis acid.

Q32. Correct Answer: (B)

Gold extraction using dilute sodium cyanide is called the MacArthur-Forrest process.

Q33. Correct Answer: (B)

Schottky defect decreases the density because equal numbers of cations and anions are missing.

Q34. Correct Answer: (D)

Tert-butyl carbocation is the most stable due to maximum hyperconjugation and inductive effect.

Q35. Correct Answer: (C)

Cannizzaro reaction is not shown by aldehydes containing α -hydrogen atoms such as acetaldehyde.

Q36. Correct Answer: (B)

Nylon-6,6 is a condensation polymer formed by elimination of water molecules.

Q37. Correct Answer: (D)

75% completion means 25% reactant remains:

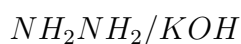
$$\left(\frac{1}{2}\right)^2 = \frac{1}{4}$$

Hence time required:

$$2t_{1/2} = 120min$$

Q38. Correct Answer: (B)

Wolff-Kishner reduction uses:



Q39. Correct Answer: (B)

The coordination number of Na^+ in NaCl crystal is 6.

Q40. Correct Answer: (C)

Al_2O_3 is amphoteric and reacts with both acids and bases.

Q41. Correct Answer: (B)

The central oxygen atom in ozone carries a formal charge of +1.

Q42. Correct Answer: (B)

2-Butene exhibits cis-trans geometrical isomerism.

Q43. Correct Answer: (A)

Arrhenius equation:

$$k = Ae^{-E_a/RT}$$

Q44. Correct Answer: (D)

Cl_3CCOOH is strongest due to the strong electron-withdrawing effect of three chlorine atoms.

Q45. Correct Answer: (C)

2,3-Dichlorobutane has three stereoisomers (one meso and one pair of enantiomers).

Q46. Correct Answer: (A)

Vanadium pentoxide (V_2O_5) is used in the Contact Process.

Q47. Correct Answer: (C)

Magnetic moment:

$$\mu = \sqrt{n(n+2)}$$

For $n = 3$:

$$\mu = \sqrt{15} = 3.87 BM$$

Q48. Correct Answer: (B)

CN^- is an ambident nucleophile and can attack through carbon or nitrogen.

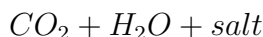
Q49. Correct Answer: (B)



has square planar geometry.

Q50. Correct Answer: (C)

Metal carbonate + acid produces:



Hence carbon dioxide gas is evolved.

Q51. Correct Answer: (B)

DNA Primase synthesizes short RNA primers required for DNA replication.

Q52. Correct Answer: (B)

IgG is the only immunoglobulin that readily crosses the placenta and provides passive immunity to the fetus.

Q53. Correct Answer: (A)

Approximately 65–70% of filtered water is reabsorbed in the Proximal Convolute Tubule.

Q54. Correct Answer: (B)

T-tubules rapidly conduct action potentials from the cell membrane to the interior of muscle fibers.

Q55. Correct Answer: (B)

During electron transport, protons are pumped into the intermembrane space, creating a proton gradient.

Q56. Correct Answer: (B)

Pulmonary surfactant reduces alveolar surface tension and prevents alveolar collapse.

Q57. Correct Answer: (C)

Chiasmata become visible during the diplotene stage of Prophase I.

Q58. Correct Answer: (B)

Angiotensin-Converting Enzyme (ACE) converts Angiotensin I into Angiotensin II.

Q59. Correct Answer: (A)

The Wobble Hypothesis explains the degeneracy of the genetic code due to flexible base pairing.

Q60. Correct Answer: (B)

Huntington's disease is an autosomal dominant genetic disorder.

Q61. Correct Answer: (B)

Non-disjunction in Meiosis I produces gametes with abnormal chromosome numbers:

$$n + 1 \quad \text{or} \quad n - 1$$

Q62. Correct Answer: (B)

Beta cells of the pancreas secrete insulin.

Q63. Correct Answer: (B)

Okazaki fragments are synthesized on the lagging strand.

Q64. Correct Answer: (B)

Primary protein structure refers to the linear sequence of amino acids.

Q65. Correct Answer: (A)

The juxtaglomerular apparatus releases renin when blood pressure decreases.

Q66. Correct Answer: (A)

Bile salts emulsify fats, increasing the surface area for lipase action.

Q67. Correct Answer: (B)

DNA replication occurs during the S (Synthesis) phase of the cell cycle.

Q68. Correct Answer: (B)

Vitamin K is synthesized by intestinal bacteria.

Q69. Correct Answer: (B)

During inspiration, the diaphragm contracts and flattens.

Q70. Correct Answer: (B)

Pulmonary veins carry oxygenated blood from the lungs to the left atrium.

Q71. Correct Answer: (C)

The TATA box is a promoter sequence involved in transcription initiation.

Q72. Correct Answer: (B)

Lysosomes contain hydrolytic enzymes and are called the "suicide bags" of the cell.

Q73. Correct Answer: (B)

Reverse transcriptase synthesizes DNA from an RNA template.

Q74. Correct Answer: (B)

In anaerobic glycolysis, pyruvate acts as the final electron acceptor and is converted to lactate.

Q75. Correct Answer: (B)

Thymosin secreted by the thymus is essential for T-lymphocyte maturation.

Q76. Correct Answer: (A)

Reported speech:

"He said that he was working on a new project."

Q77. Correct Answer: (B)

"Meticulous" means careful and diligent.

Q78. Correct Answer: (B)

The correct construction is:

"Hardly had he finished his work when the lights went out."

Q79. Correct Answer: (B)

"Effervescent" is the correct spelling.

Q80. Correct Answer: (B)

Passive voice:

"A letter is being written by her."

Q81. Correct Answer: (B)

A group of lions is called a pride.

Q82. Correct Answer: (A)

The antonym of vague is precise.

Q83. Correct Answer: (A)

The correct expression is:

"He died of cancer."

Q84. Correct Answer: (A)

The sentence is correctly punctuated with quotation marks and comma placement.

Q85. Correct Answer: (B)

"To beat about the bush" means to avoid the main topic.

Q86. Correct Answer: (B)

"She has many books" is grammatically correct.

Q87. Correct Answer: (B)

An altruist is a person who is unselfishly concerned for others.

Q88. Correct Answer: (A)

"Running to the bus, my bag fell" contains a dangling modifier.

Q89. Correct Answer: (A)

The comparative form is:

"He is taller than his brother."

Q90. Correct Answer: (A)

"Receive" is the correct spelling.

Q91. Correct Answer: (C)

Neil Armstrong was the first person to set foot on the Moon on July 20, 1969.

Q92. Correct Answer: (B)

The Great Barrier Reef is located off the northeastern coast of Australia.

Q93. Correct Answer: (C)

The liver is the largest gland in the human body.

Q94. Correct Answer: (A)

World Health Day is celebrated every year on April 7 under the World Health Organization (WHO).

Q95. Correct Answer: (B)

The Kosi River is known as the "Sorrow of Bihar" because of its frequent floods.

Q96. Correct Answer: (B)

The Statue of Liberty was gifted to the United States by France in 1886.

Q97. Correct Answer: (C)

Dr. B.R. Ambedkar is known as the Father of the Indian Constitution.

Q98. Correct Answer: (B)

The ozone layer is located in the Stratosphere.

Q99. Correct Answer: (C)

The headquarters of the International Court of Justice is located in The Hague, Netherlands.

Q100. Correct Answer: (C)

Nitrogen constitutes approximately 78% of the Earth's atmosphere, making it the most abundant gas.

