

PGIMER B.SC NURSING SAMPLE PAPER 10

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

1. Which of the following describes the “Fluid Mosaic Model” of the plasma membrane most accurately?
 - A) A static lipid bilayer with embedded proteins.
 - B) A phospholipid bilayer with proteins that can move laterally.
 - C) A protein layer with lipids embedded in it.
 - D) A rigid structure with non-moving lipids and proteins.
2. During DNA replication, which enzyme is responsible for the removal of RNA primers and filling the gaps with DNA?
 - A) DNA Polymerase III
 - B) DNA Polymerase I
 - C) Primase
 - D) Helicase
3. Which hormone is primarily responsible for the rapid growth of the uterine endometrium during the proliferative phase?
 - A) Progesterone
 - B) Estrogen
 - C) LH
 - D) FSH
4. In the human nephron, which substance is almost completely reabsorbed in the proximal convoluted tubule?
 - A) Urea
 - B) Creatinine
 - C) Glucose
 - D) Sodium
5. Which cell type in the alveoli is responsible for gas exchange?
 - A) Type I pneumocyte
 - B) Type II pneumocyte
 - C) Macrophage
 - D) Goblet cell
6. The “Kupffer cells” found in the liver are specialized:
 - A) Hepatocytes
 - B) Macrophages
 - C) Endothelial cells
 - D) Bile duct cells
7. Which vitamin acts as a coenzyme in transamination reactions?
 - A) Vitamin B1
 - B) Vitamin B6
 - C) Vitamin B12
 - D) Vitamin C
8. “Anaphylactic shock” is a clinical manifestation of which hypersensitivity type?
 - A) Type I
 - B) Type II

- C) Type III
 - D) Type IV
9. The “SA Node” is located in the wall of the:
- A) Left Atrium
 - B) Right Atrium
 - C) Left Ventricle
 - D) Right Ventricle
10. Which neurotransmitter is primarily excitatory in the central nervous system?
- A) GABA
 - B) Glycine
 - C) Glutamate
 - D) Serotonin
11. The “Oxidative phosphorylation” occurs in the:
- A) Mitochondrial matrix
 - B) Inner mitochondrial membrane
 - C) Cytosol
 - D) Ribosomes
12. Which immunoglobulin is found in secretions like saliva, tears, and breast milk?
- A) IgG
 - B) IgA
 - C) IgM
 - D) IgE
13. “Okazaki fragments” are synthesized on the:
- A) Leading strand
 - B) Lagging strand
 - C) Coding strand
 - D) Template strand
14. Which enzyme is essential for the replication of HIV (RNA virus)?
- A) DNA Polymerase
 - B) Reverse Transcriptase
 - C) Ligase
 - D) Primase
15. The primary buffer system of the blood is:
- A) Phosphate buffer
 - B) Bicarbonate buffer
 - C) Protein buffer
 - D) Hemoglobin buffer
16. Which of the following is an example of an “Autosomal Recessive” disorder?
- A) Huntington’s disease
 - B) Cystic fibrosis
 - C) Hemophilia A
 - D) Color blindness

17. Which part of the brain controls breathing and heart rate?
 - A) Cerebellum
 - B) Hypothalamus
 - C) Medulla Oblongata
 - D) Thalamus
18. The “T-cells” mature in the:
 - A) Bone Marrow
 - B) Thymus
 - C) Spleen
 - D) Lymph nodes
19. Which hormone increases blood sugar by promoting glycogenolysis?
 - A) Insulin
 - B) Glucagon
 - C) Somatostatin
 - D) Prolactin
20. The “Sarcomere” is the functional unit of:
 - A) Bone
 - B) Muscle
 - C) Nerve
 - D) Kidney
21. Which enzyme is responsible for the unwinding of DNA?
 - A) Ligase
 - B) Helicase
 - C) Topoisomerase
 - D) Polymerase
22. What is the function of “Bile”?
 - A) Emulsification of fats
 - B) Digestion of starch
 - C) Digestion of proteins
 - D) Absorption of vitamins
23. Which structure in the sperm helps it penetrate the egg?
 - A) Acrosome
 - B) Mitochondria
 - C) Centriole
 - D) Tail
24. Which condition is caused by an excess of Growth Hormone in adults?
 - A) Gigantism
 - B) Acromegaly
 - C) Dwarfism
 - D) Cretinism
25. “Crossing over” occurs during:
 - A) Prophase I
 - B) Metaphase I

- C) Anaphase I
- D) Prophase II



SECTION 2 : CHEMISTRY

- Q26. What is the hybridization of central atom in SF_6 ?
- A) sp^3
 - B) sp^3d
 - C) sp^3d^2
 - D) sp^3d^3
- Q27. Which molecule has a linear shape?
- A) CO_2
 - B) H_2O
 - C) NH_3
 - D) CH_4
- Q28. The “Lewis base” in the reaction $BF_3 + NH_3 \rightarrow NH_3BF_3$ is:
- A) BF_3
 - B) NH_3
 - C) Both
 - D) Neither
- Q29. Which gas is most easily liquefied?
- A) He
 - B) H_2
 - C) NH_3
 - D) N_2
- Q30. The “Oxidation state” of Oxygen in OF_2 is:
- A) -2
 - B) -1
 - C) +2
 - D) +1
- Q31. Which element is used to treat “Bipolar Disorder”?
- A) Sodium
 - B) Lithium
 - C) Potassium
 - D) Calcium
- Q32. The “Rate law” for a reaction $2A + B \rightarrow C$ is $Rate = k[A][B]$. The order is:
- A) 1
 - B) 2
 - C) 3
 - D) 0
- Q33. “ $KMnO_4$ ” acts as a powerful:
- A) Reducing agent
 - B) Oxidizing agent
 - C) Catalyst
 - D) Solvent

- Q34. The "IUPAC" name of $CH_3 - CH(OH) - CH_3$ is:
A) Propan-1-ol
B) Propan-2-ol
C) Ethanol
D) Propanone
- Q35. "Bakelite" is a cross-linked polymer of:
A) Phenol & Formaldehyde
B) Adipic acid & Hexamethylene diamine
C) Ethylene
D) Styrene
- Q36. Which acid is found in "Tamarind"?
A) Citric acid
B) Tartaric acid
C) Lactic acid
D) Formic acid
- Q37. The "pH" of a 0.01 M HCl solution is:
A) 1
B) 2
C) 3
D) 12
- Q38. Which transition metal shows the highest oxidation state?
A) Osmium
B) Iron
C) Copper
D) Zinc
- Q39. "Heavy water" is:
A) D_2O
B) H_2O
C) T_2O
D) H_2O_2
- Q40. Which compound shows "Geometrical isomerism"?
A) But-2-ene
B) But-1-ene
C) Propene
D) Ethane
- Q41. The "Most stable" carbocation is:
A) Methyl
B) Primary
C) Secondary
D) Tertiary
- Q42. "Chlorination of methane" is an example of:
A) Substitution
B) Addition

- C) Elimination
D) Rearrangement
- Q43. Which metal is liquid at room temperature?
A) Gallium
B) Mercury
C) Bromine
D) Cesium
- Q44. "Tollen's reagent" is:
A) Ammoniacal silver nitrate
B) Copper sulphate
C) Sodium hydroxide
D) Potassium permanganate
- Q45. Which is an "Amphoteric oxide"?
A) ZnO
B) Na_2O
C) CaO
D) SO_2
- Q46. "Radioactive decay" follows:
A) Zero order
B) First order
C) Second order
D) Third order
- Q47. The "Coordination number" of Cl^- in $NaCl$ is:
A) 4
B) 6
C) 8
D) 12
- Q48. Which gas is used in "Welding"?
A) Ethyne (Acetylene)
B) Methane
C) Ethene
D) Propane
- Q49. "Diamond" is a form of:
A) Carbon
B) Silicon
C) Boron
D) Nitrogen
- Q50. The "Bond angle" in H_2O is approximately:
A) 104.5°
B) 109.5°
C) 120°
D) 180°

SECTION 3 : PHYSICS

- Q51. The “Dimensions” of Planck’s constant are the same as:
A) Force
B) Angular momentum
C) Power
D) Energy
- Q52. A “Projectile” at the highest point has:
A) Only horizontal velocity
B) Only vertical velocity
C) Both velocities
D) Zero velocity
- Q53. The “Escape velocity” from the Earth is:
A) 11.2 km/s
B) 9.8 km/s
C) 3.0×10^8 m/s
D) 4.2 km/s
- Q54. Which “Lens” is used to correct Nearsightedness (Myopia)?
A) Convex
B) Concave
C) Cylindrical
D) Bifocal
- Q55. The “Unit of Magnetic Flux” is:
A) Tesla
B) Weber
C) Gauss
D) Henry
- Q56. “Lenz’s Law” is based on the principle of conservation of:
A) Charge
B) Energy
C) Momentum
D) Mass
- Q57. The “Speed of Light” in vacuum is:
A) 3×10^8 m/s
B) 3×10^5 m/s
C) 3×10^{10} m/s
D) 3×10^6 m/s
- Q58. “Ohm’s Law” is applicable to:
A) Conductors
B) Semiconductors
C) Insulators
D) Electrolytes

- Q59. Which “Wave” is electromagnetic?
- A) Sound
 - B) X-rays
 - C) Water waves
 - D) Seismic waves
- Q60. “Bernoulli’s principle” relates to:
- A) Fluid dynamics
 - B) Heat transfer
 - C) Electricity
 - D) Magnetism
- Q61. The “Binding energy” of an atom is due to:
- A) Strong nuclear force
 - B) Gravitational force
 - C) Electromagnetic force
 - D) Weak force
- Q62. “Photoelectric effect” provides evidence for:
- A) Wave nature of light
 - B) Particle nature of light
 - C) Dual nature
 - D) None
- Q63. Which “Logic Gate” acts as an inverter?
- A) AND
 - B) OR
 - C) NOT
 - D) NAND
- Q64. “Total Internal Reflection” occurs when light moves from:
- A) Denser to Rarer
 - B) Rarer to Denser
 - C) Air to Water
 - D) Water to Glass
- Q65. The “Resistance” of an ideal Ammeter is:
- A) Zero
 - B) Infinite
 - C) Very High
 - D) Moderate
- Q66. “Surface Tension” of a liquid decreases with:
- A) Increase in temperature
 - B) Decrease in temperature
 - C) Increase in pressure
 - D) No change
- Q67. “Half-life” of a radioactive substance depends on:
- A) Temperature
 - B) Pressure

- C) Nature of the element
D) Amount of sample
- Q68. Which “Color” has the shortest wavelength?
A) Red
B) Yellow
C) Violet
D) Green
- Q69. “Transformer” works on the principle of:
A) Self-induction
B) Mutual induction
C) Electromagnetic induction
D) Both B & C
- Q70. “Work done” in moving a charge in an equipotential surface is:
A) Zero
B) Positive
C) Negative
D) Infinite
- Q71. “Weightlessness” in space is due to:
A) Absence of gravity
B) Free fall
C) Zero mass
D) Atmospheric pressure
- Q72. “Specific heat” is maximum for:
A) Water
B) Copper
C) Iron
D) Mercury
- Q73. “Nuclear Fusion” is the source of energy in:
A) Sun
B) Atom bomb
C) Power plants
D) Batteries
- Q74. “Transistors” are primarily used as:
A) Amplifiers
B) Switches
C) Both A & B
D) None
- Q75. “Frequency” of human audible sound is:
A) 20 Hz - 20 kHz
B) 0 - 20 Hz
C) Above 20 kHz
D) 50 Hz - 50 kHz

SECTION 4 : ENGLISH

- Q76. Choose the synonym for “Resilient”:
 A) Flexible
 B) Rigid
 C) Fragile
 D) Weak
- Q77. “She is good ---- playing the piano.”
 A) at
 B) in
 C) on
 D) for
- Q78. Choose the correct spelling:
 A) Bureaucracy
 B) Beuracracy
 C) Buraucracy
 D) Burocracy
- Q79. Identify the part of speech of ‘fast’ in: “He is a fast runner.”
 A) Noun
 B) Adjective
 C) Adverb
 D) Verb
- Q80. The synonym for “Apathy” is:
 A) Interest
 B) Indifference
 C) Passion
 D) Empathy
- Q81. Complete the sentence: “If I ---- you, I would accept the offer.”
 A) was
 B) were
 C) am
 D) be
- Q82. Choose the passive voice of: “They have finished the work.”
 A) The work was finished by them.
 B) The work has been finished by them.
 C) The work is finished by them.
 D) The work had been finished by them.
- Q83. Choose the correct plural of “Mouse”:
 A) Mouses
 B) Mice
 C) Mouses
 D) Mices

Q84. Identify the antonym for “Vast”:

- A) Huge
- B) Tiny
- C) Large
- D) Broad

Q85. The phrase “A bird in the hand is worth two in the bush” means:

- A) Have some is better than having nothing
- B) Having something valuable is better than chasing possibilities
- C) Take risks
- D) Be patient



SECTION 5 : GENERAL KNOWLEDGE

- Q86. Who was the first woman to reach Mount Everest?
- A) Junko Tabei
 - B) Bachendri Pal
 - C) Arunima Sinha
 - D) Santosh Yadav
- Q87. The “Blue Planet” is:
- A) Mars
 - B) Earth
 - C) Venus
 - D) Neptune
- Q88. The “Parliament of Japan” is known as:
- A) Diet
 - B) Knesset
 - C) Duma
 - D) Congress
- Q89. Who discovered “Penicillin”?
- A) Alexander Fleming
 - B) Louis Pasteur
 - C) Robert Koch
 - D) Joseph Lister
- Q90. The “Great Wall of China” was built by which dynasty?
- A) Qin
 - B) Ming
 - C) Han
 - D) Tang
- Q91. The “Currency of Russia” is:
- A) Ruble
 - B) Euro
 - C) Dollar
 - D) Yuan
- Q92. The “World Wide Web” was invented by:
- A) Tim Berners-Lee
 - B) Bill Gates
 - C) Steve Jobs
 - D) Mark Zuckerberg
- Q93. “Indira Point” is the southernmost point of:
- A) India
 - B) Africa
 - C) Australia
 - D) Asia

- Q94. The “Black Death” refers to a:
- A) Plague epidemic
 - B) Forest fire
 - C) War
 - D) Famine
- Q95. The “United Nations Day” is observed on:
- A) October 24
 - B) December 10
 - C) August 15
 - D) January 26
- Q96. “Kathak” is a classical dance from:
- A) North India
 - B) South India
 - C) East India
 - D) West India
- Q97. The “Red Cross” was founded by:
- A) Henry Dunant
 - B) Mother Teresa
 - C) Florence Nightingale
 - D) Mahatma Gandhi
- Q98. “Vatican City” is the smallest country in:
- A) Europe
 - B) Asia
 - C) Africa
 - D) America
- Q99. The “Highest civilian award” in India is:
- A) Bharat Ratna
 - B) Padma Vibhushan
 - C) Padma Shri
 - D) Padma Bhushan
- Q100. The “Taj Mahal” was built by:
- A) Shah Jahan
 - B) Akbar
 - C) Jahangir
 - D) Aurangzeb

SOLUTIONS

Q1. Correct Answer: (B)

The Fluid Mosaic Model describes the plasma membrane as a phospholipid bilayer with laterally moving proteins.

Q2. Correct Answer: (B)

DNA Polymerase I removes RNA primers and fills the gaps with DNA.

Q3. Correct Answer: (B)

Estrogen stimulates rapid growth of the uterine endometrium during the proliferative phase.

Q4. Correct Answer: (C)

Glucose is almost completely reabsorbed in the proximal convoluted tubule.

Q5. Correct Answer: (A)

Type I pneumocytes are responsible for gaseous exchange in alveoli.

Q6. Correct Answer: (B)

Kupffer cells are specialized macrophages present in the liver.

Q7. Correct Answer: (B)

Vitamin B6 acts as a coenzyme in transamination reactions.

Q8. Correct Answer: (A)

Anaphylactic shock is a Type I hypersensitivity reaction.

Q9. Correct Answer: (B)

The SA node is located in the wall of the right atrium.

Q10. Correct Answer: (C)

Glutamate is the primary excitatory neurotransmitter in the CNS.

Q11. Correct Answer: (B)

Oxidative phosphorylation occurs on the inner mitochondrial membrane.

Q12. Correct Answer: (B)

IgA is found in saliva, tears, and breast milk.

Q13. Correct Answer: (B)

Okazaki fragments are synthesized on the lagging strand.

Q14. Correct Answer: (B)

Reverse transcriptase is essential for HIV replication.

Q15. Correct Answer: (B)

The bicarbonate buffer system is the primary blood buffer.

Q16. Correct Answer: (B)

Cystic fibrosis is an autosomal recessive disorder.

Q17. Correct Answer: (C)

The medulla oblongata controls breathing and heart rate.

Q18. Correct Answer: (B)

T-cells mature in the thymus gland.

Q19. Correct Answer: (B)

Glucagon increases blood sugar by promoting glycogenolysis.

Q20. Correct Answer: (B)

Sarcomere is the functional unit of muscle.

Q21. Correct Answer: (B)

Helicase unwinds the DNA double helix.

Q22. Correct Answer: (A)

Bile helps in emulsification of fats.

Q23. Correct Answer: (A)

The acrosome helps sperm penetrate the egg.

Q24. Correct Answer: (B)

Excess growth hormone in adults causes acromegaly.

Q25. Correct Answer: (A)

Crossing over occurs during Prophase I of meiosis.

Q26. Correct Answer: (C)

The hybridization in SF_6 is sp^3d^2 .

Q27. Correct Answer: (A)

CO_2 has a linear molecular shape.

Q28. Correct Answer: (B)

NH_3 donates an electron pair and acts as a Lewis base.

Q29. Correct Answer: (C)

NH_3 is most easily liquefied due to hydrogen bonding.

Q30. Correct Answer: (C)

In OF_2 , oxygen has oxidation state +2.

Q31. Correct Answer: (B)

Lithium is used in treatment of bipolar disorder.

Q32. Correct Answer: (B)

Overall order is:

$$1 + 1 = 2$$

Q33. Correct Answer: (B)

$KMnO_4$ is a strong oxidizing agent.

Q34. Correct Answer: (B)

$CH_3 - CH(OH) - CH_3$ is Propan-2-ol.

Q35. Correct Answer: (A)

Bakelite is made from phenol and formaldehyde.

Q36. Correct Answer: (B)

Tamarind contains tartaric acid.

Q37. Correct Answer: (B)

For 0.01 M HCl:

$$pH = -\log(10^{-2}) = 2$$

Q38. Correct Answer: (A)

Osmium shows the highest oxidation state.

Q39. Correct Answer: (A)

Heavy water is D_2O .

Q40. Correct Answer: (A)

But-2-ene shows geometrical isomerism.

Q41. Correct Answer: (D)

Tertiary carbocation is the most stable.

Q42. Correct Answer: (A)

Chlorination of methane is a substitution reaction.

Q43. Correct Answer: (B)

Mercury is liquid at room temperature.

Q44. Correct Answer: (A)

Tollen's reagent is ammoniacal silver nitrate.

Q45. Correct Answer: (A)

ZnO is an amphoteric oxide.

Q46. Correct Answer: (B)

Radioactive decay follows first-order kinetics.

Q47. Correct Answer: (B)

Coordination number of Cl^- in NaCl crystal is 6.

Q48. Correct Answer: (A)

Acetylene (ethyne) is used in welding.

Q49. Correct Answer: (A)

Diamond is an allotrope of carbon.

Q50. Correct Answer: (A)

Bond angle in water is approximately 104.5° .

Q51. Correct Answer: (B)

Planck's constant has the dimensions of angular momentum.

Q52. Correct Answer: (A)

At the highest point, a projectile has only horizontal velocity.

Q53. Correct Answer: (A)

Escape velocity from Earth is approximately 11.2 km/s.

Q54. Correct Answer: (B)

A concave lens is used to correct myopia.

Q55. Correct Answer: (B)

The SI unit of magnetic flux is Weber.

Q56. Correct Answer: (B)

Lenz's law is based on conservation of energy.

Q57. Correct Answer: (A)

The speed of light in vacuum is:

$$3 \times 10^8 m/s$$

Q58. Correct Answer: (A)

Ohm's law is mainly applicable to metallic conductors.

Q59. Correct Answer: (B)

X-rays are electromagnetic waves.

Q60. Correct Answer: (A)

Bernoulli's principle relates to fluid dynamics.

Q61. Correct Answer: (C)

Binding energy of atoms is due to electromagnetic force.

Q62. Correct Answer: (B)

Photoelectric effect proves the particle nature of light.

Q63. Correct Answer: (C)

NOT gate acts as an inverter.

Q64. Correct Answer: (A)

Total internal reflection occurs when light travels from denser to rarer medium.

Q65. Correct Answer: (A)

An ideal ammeter has zero resistance.

Q66. Correct Answer: (A)

Surface tension decreases with increase in temperature.

Q67. Correct Answer: (C)

Half-life depends only on the nature of the radioactive element.

Q68. Correct Answer: (C)

Violet color has the shortest wavelength in visible spectrum.

Q69. Correct Answer: (D)

Transformer works on mutual induction and electromagnetic induction.

Q70. Correct Answer: (A)

Work done on an equipotential surface is zero.

Q71. Correct Answer: (B)

Weightlessness in space is due to continuous free fall.

Q72. Correct Answer: (A)

Water has the maximum specific heat capacity.

Q73. Correct Answer: (A)

Nuclear fusion powers the Sun.

Q74. Correct Answer: (C)

Transistors are used as amplifiers and switches.

Q75. Correct Answer: (A)

Human audible frequency range is:

$$20Hz - 20kHz$$

Q76. Correct Answer: (A)

"Resilient" means flexible or able to recover quickly.

Q77. Correct Answer: (A)

The correct phrase is "good at playing the piano."

Q78. Correct Answer: (A)

"Bureaucracy" is the correct spelling.

Q79. Correct Answer: (B)

In the sentence, "fast" describes the noun runner, so it is an adjective.

Q80. Correct Answer: (B)

"Apathy" means indifference.

Q81. Correct Answer: (B)

The correct subjunctive form is "If I were you."

Q82. Correct Answer: (B)

Passive voice:

The work has been finished by them.

Q83. Correct Answer: (B)

Plural of mouse is mice.

Q84. Correct Answer: (B)

The antonym of vast is tiny.

Q85. Correct Answer: (B)

The phrase means having something certain is better than uncertain possibilities.

Q86. Correct Answer: (A)

Junko Tabei was the first woman to climb Mount Everest.

Q87. Correct Answer: (B)

Earth is known as the Blue Planet.

Q88. Correct Answer: (A)

The Parliament of Japan is called the Diet.

Q89. Correct Answer: (A)

Penicillin was discovered by Alexander Fleming.

Q90. Correct Answer: (A)

The Great Wall of China was initially built during the Qin dynasty.

Q91. Correct Answer: (A)

The currency of Russia is Ruble.

Q92. Correct Answer: (A)

The World Wide Web was invented by Tim Berners-Lee.

Q93. Correct Answer: (A)

Indira Point is the southernmost point of India.

Q94. Correct Answer: (A)

Black Death refers to the plague epidemic.

Q95. Correct Answer: (A)

United Nations Day is observed on October 24.

Q96. Correct Answer: (A)

Kathak is a classical dance form of North India.

Q97. Correct Answer: (A)

The Red Cross was founded by Henry Dunant.

Q98. Correct Answer: (A)

Vatican City is the smallest country in Europe.

Q99. Correct Answer: (A)

Bharat Ratna is the highest civilian award in India.

Q100. Correct Answer: (A)

The Taj Mahal was built by Shah Jahan.