NFAT Mock Questions
BSc -MSc Forensic Science

1. Which of the following is the most appropriate reason why viruses are not classified in any of the five kingdoms?
   a) They lack a cellular structure.
   b) They cannot reproduce independently.
   c) They lack metabolic machinery.
   d) All of the above are equally valid reasons for their exclusion.

2. Consider the following statements regarding fungi:
   I. Some unicellular forms like yeast are facultative anaerobes.
   II. Sexual reproduction involves gametangial contact, gametangial copulation, and somatogamy.
   III. Imperfect fungi lack asexual spores.
   IV. Mycorrhiza represents a parasitic association of fungi with roots of higher plants
   Which of the statements are correct?
   a) I and II only
   b) I, II, and III
   c) I, II, and IV
   d) I and III only

3. Which of the following is a key distinguishing feature between the life cycles of a liverwort and a fern?
   a) Presence of archegonia in both.
   b) Dominant gametophytic phase in liverworts, dominant sporophytic phase in ferns.
   c) Dependence on water for fertilization in ferns, not in liverworts.
   d) Absence of vascular tissue in liverworts, presence in ferns.

4. A newly discovered animal possesses a water vascular system, absence of a head, and a complete digestive system with a ventral mouth. To which phylum does it most likely belong?
   a) Annelida
   b) Mollusca
   c) Echinodermata
   d) Arthropoda

5. Which of the following animal groups exhibits both metamerism and a closed circulatory system?
   a) Arthropoda
   b) Mollusca
   c) Annelida
   d) Echinodermata

6. In a typical dicot stem, the sequence of tissues from the periphery to the center would be:
   a) Epidermis → Cortex → Endodermis → Pericycle → Pith
   b) Epidermis → Pericycle → Cortex → Endodermis → Pith
   c) Epidermis → Cortex → Pericycle → Endodermis → Pith
   d) Epidermis → Endodermis → Cortex → Pericycle → Pith

7. A plant tissue composed of uniformly thick-walled, elongated cells with tapering ends, providing mechanical support, is most likely:
   a) Parenchyma
   b) Collenchyma
   c) Sclerenchyma fibers
   d) Sclereids

8. Which of the following statements about cambial ring formation during secondary growth in a dicot stem is incorrect?
   a) It is formed by the activity of intrafascicular and interfascicular cambia.
   b) It produces secondary xylem towards the periphery and secondary phloem towards the center.
   c) Its activity is influenced by physiological and environmental factors.
   d) It is responsible for the increase in girth of the stem.

9. Given a solution with a water potential of -10 bars and a plant cell with a water potential of -5 bars, what will be the direction of water movement?
   a) From solution to cell
   b) From cell to solution
   c) No net movement
   d) Movement depends on solute potential only

10. Which of the following conditions would reduce the rate of transpiration?
a) Increase in light intensity
b) Increase in wind speed
c) Increase in relative humidity
d) Increase in ambient temperature

11. The deficiency symptoms of mobile elements in plants typically appear first in:
a) Younger leaves
b) Older leaves
c) Roots
d) Flowers

12. Which of the following processes directly contributes to the generation of a proton gradient across the thylakoid membrane during photosynthesis?
a) Splitting of water molecules
b) Movement of electrons through Photosystem I
c) Reduction of NADP+ to NADPH
d) Carbon fixation in the Calvin cycle

13. If a C3 plant is grown under conditions of high CO2 concentration and high light intensity, what is the expected outcome regarding photorespiration and net photosynthesis?

a) Photorespiration increases, net photosynthesis decreases.
b) Photorespiration decreases, net photosynthesis increases.
c) Both photorespiration and net photosynthesis remain unchanged.
d) Photorespiration decreases, net photosynthesis decreases.

14. During the conversion of glucose to pyruvate in glycolysis, how many ATP molecules are net synthesized and how many NADH molecules are formed per molecule of glucose?
a) 2 ATP, 2 NADH
b) 4 ATP, 2 NADH
c) 2 ATP, 4 NADH
d) 4 ATP, 4 NADH

15. The immediate source of energy for the synthesis of ATP by ATP synthase in the electron transport chain is:
a) High energy electrons
b) Oxidation of NADH and FADH2
c) Proton gradient across the membrane
d) Direct phosphorylation of ADP

16. Which of the following plant growth regulators is most effective in promoting seed dormancy and abscission?
a) Auxin
b) Gibberellin
c) Cytokinin
d) Abscisic Acid (ABA)

17. A short-day plant would flower if exposed to:
a) 10 hours light / 14 hours dark
b) 14 hours light / 10 hours dark
c) 12 hours light / 12 hours dark with a brief flash of red light in the dark period
d) 16 hours light / 8 hours dark

18. Which type of enzyme would be involved in breaking down fats into fatty acids and glycerol?
a) Hydrolase
b) Lyase
c) Transferase
d) Isomerase

19. A protein molecule undergoes denaturation. Which level of protein structure is least likely to be affected initially?
a) Primary structure
b) Secondary structure
c) Tertiary structure
d) Quaternary structure

20. Which of the following statements about the G0 phase of the cell cycle is correct?
a) Cells in G0 phase are actively dividing.
b) Cells in G0 phase have permanently exited the cell cycle.
c) Cells in G0 phase are metabolically active but do not proliferate.
d) DNA replication occurs in G0 phase.

21. If a diploid cell has 2n = 16 chromosomes at the beginning of meiosis I, how many chromosomes and chromatids will each cell have at the end of meiosis II?
a) 8 chromosomes, 8 chromatids
b) 8 chromosomes, 16 chromatids
c) 16 chromosomes, 16 chromatids
d) 16 chromosomes, 32 chromatids

22. The chief osmotic agent in animal cells that helps maintain fluid balance and blood pressure is:
a) Glucose
b) Amino acids
c) Sodium ions
d) Potassium ions

23. Which of the following statements accurately describes the composition of chyme?
a) Partially digested food mixed with saliva.
b) Fully digested food leaving the small intestine.
c) Acidic, partially digested food mixed with gastric juice.
d) Alkaline fluid secreted by the pancreas into the duodenum.

24. A patient is suffering from severe jaundice. Which of the following would be the most direct cause of this symptom related to digestion?
a) Increased breakdown of red blood cells.
b) Blockage of the bile duct.
c) Excessive secretion of gastric acid.
d) Inefficient absorption of nutrients in the small intestine.

25. During expiration, the diaphragm:
a) Contracts and moves downwards.
b) Relaxes and moves upwards.
c) Contracts and moves upwards.
d) Relaxes and moves downwards.

26. The maximum volume of air a person can breathe in after a forced expiration is called:
a) Tidal Volume
b) Inspiratory Reserve Volume
c) Expiratory Reserve Volume
d) Vital Capacity

27. Which of the following factors would shift the oxygen dissociation curve to the right (indicating decreased affinity of hemoglobin for oxygen)?
a) Decrease in pCO_2
b) Decrease in temperature
c) Increase in pH
d) Increase in 2,3-BPG (bisphosphoglycerate)

28. A person experiences reduced RBC count, leading to fatigue and pallor. Which part of the heart's function would be most directly affected by this condition in the long term, due to inadequate oxygen delivery?
a) Right atrium
b) Left ventricle
c) Right ventricle
d) Pulmonary artery

29. Which of the following statements about the renal corpuscle is correct?
a) It consists of the Bowman's capsule and the PCT.
b) It is the site of selective reabsorption.
c) It filters blood to form glomerular filtrate.
d) It is primarily involved in tubular secretion.

30. If the efferent arteriole leading out of the glomerulus constricts, what would be the immediate effect on Glomerular Filtration Rate (GFR)?
a) GFR would decrease.
b) GFR would increase.
c) GFR would remain unchanged.
d) GFR would fluctuate unpredictably.

31. Which part of the nephron is primarily responsible for the reabsorption of most of the useful substances (like glucose, amino acids) from the filtrate?
a) Bowman's capsule
b) Loop of Henle
c) Proximal Convoluted Tubule (PCT)
d) Distal Convoluted Tubule (DCT)

32. The ability of the human eye to focus on objects at different distances is primarily due to the change in the:
a) Curvature of the cornea
b) Diameter of the pupil
c) Thickness of the lens
d) Length of the eyeball

33. Which of the following accurately describes the sequence of events at a chemical synapse?
a) Neurotransmitter release → Action potential in postsynaptic neuron → Ion channel opening
b) Action potential in presynaptic neuron → Neurotransmitter release → Ion channel opening → Postsynaptic potential
c) Ion channel opening → Neurotransmitter release → Action potential in postsynaptic neuron
d) Postsynaptic potential → Neurotransmitter release → Action potential in presynaptic neuron

34. Damage to the cerebellum would most likely result in:
a) Loss of memory
b) Difficulty in breathing and heart rate regulation
c) Impaired balance and coordination
d) Inability to comprehend language

35. The functional unit of skeletal muscle is the sarcomere. What happens to the A-band and I-band during muscle contraction?
a) A-band shortens, I-band shortens.
b) A-band remains the same, I-band shortens.
c) A-band shortens, I-band remains the same.
d) A-band remains the same, I-band lengthens.

36. Which of the following hormones is a steroid hormone and exerts its effect by binding to intracellular receptors?
a) Insulin
b) Adrenaline
c) Estrogen
d) Glucagon

37. A person suffers from Cushing's syndrome, characterized by high blood glucose, muscle weakness, and redistribution of fat. Which endocrine gland is likely hypersecreting a hormone?
a) Thyroid gland
b) Pancreas
c) Adrenal cortex
d) Pituitary gland

38. Which of the following correctly pairs a hormone with its primary role in maintaining homeostasis?
a) Calcitonin: Increases blood calcium levels
b) ADH: Promotes water reabsorption in the kidney tubules
c) Insulin: Increases blood glucose by stimulating glycogenolysis
d) Parathyroid hormone: Decreases blood calcium levels

39. If the anterior pituitary gland is removed, the secretion of which of the following hormones would not be directly affected?
a) Growth Hormone (GH)
b) Thyroid Stimulating Hormone (TSH)
c) Oxytocin
d) Follicle Stimulating Hormone (FSH)

40. Which of the following is an example of an antagonistic hormonal pair regulating a physiological process?
a) ADH and Aldosterone for water and electrolyte balance.
b) Thyroxine and Calcitonin for metabolic rate.
c) Insulin and Glucagon for blood glucose regulation.
d) Prolactin and Oxytocin for milk production and ejection.

41. Which statement best explains the significance of 'significant figures' in scientific measurements?

a) They indicate the precision of the measuring instrument.

b) They reflect the number of digits in a measurement that are known with certainty plus one uncertain digit.

c) They ensure that calculated results do not imply greater precision than the original measurements.

d) All of the above.

42. Bohr's model of the atom failed to explain the spectra of multi-electron atoms and the Zeeman effect. Which fundamental principle of quantum mechanics, developed later, directly addressed these limitations?

a) Pauli's Exclusion Principle

b) Hund's Rule of Maximum Multiplicity

c) Wave-particle duality of matter

d) Aufbau Principle

43. The first ionization enthalpy of oxygen is less than that of nitrogen, despite oxygen having a higher nuclear charge. This anomaly is best explained by:

a) Smaller atomic size of oxygen.

b) Greater shielding effect in oxygen.

c) Half-filled p-orbital stability in nitrogen.

d) Higher electronegativity of oxygen.

44. Which of the following is the most crucial factor for the existence of resonance in a molecule?

a) Presence of multiple bonds.

b) Delocalization of sigma (σ) electrons.

c) Delocalization of pi (π) electrons or lone pairs.

d) Existence of multiple equivalent Lewis structures.

45. Despite both CCl4 and CHCl3 having polar C-Cl bonds, CCl4 is non-polar while CHCl3is polar. This difference is primarily due to:

a) Difference in bond length.

b) Symmetrical vs. asymmetrical molecular geometry.

c) Difference in electronegativity of carbon and hydrogen.

d) Presence of lone pairs on chlorine atoms.

46. The bond angle in H2O is smaller than the tetrahedral angle and also smaller than the bond angle in NH3 . This progressive decrease is best attributed to:

a) Increasing electronegativity of the central atom.

b) Increasing number of lone pair-lone pair repulsions.

c) Decreasing number of bonding pairs.

d) Differences in hybridization.

47. Which statement accurately describes the underlying principle of the 'Law of Equivalence' in redox reactions?

a) The number of moles of oxidant equals the number of moles of reductant.

b) The number of gram equivalents of oxidant equals the number of gram equivalents of reductant.

c) The mass of oxidant reacted equals the mass of reductant reacted.

d) The volume of oxidant solution equals the volume of reductant solution.

48. Why is the concept of 'state function' fundamental to thermodynamics?

a) It allows for the measurement of heat and work directly.

b) It ensures that the change in a property depends only on the initial and final states, not the path taken.

c) It describes the rate at which a reaction proceeds.

d) It predicts the spontaneity of a process.

49. Real gases deviate from ideal gas behavior most significantly under which set of conditions?

a) Low pressure, high temperature

b) High pressure, low temperature

c) Low pressure, low temperature

d) High pressure, high temperature

50. According to Le Chatelier's Principle, for an exothermic reversible reaction at equilibrium, what effect would an increase in temperature have?

a) Shift the equilibrium to the left (reactants).

b) Shift the equilibrium to the right (products).

c) No effect on equilibrium.

d) Increase the rate of both forward and reverse reactions equally.

51. The addition of a small amount of strong acid to a buffer solution causes only a minimal change in pH. This is because:

a) The strong acid completely neutralizes the weak base component of the buffer.

b) The conjugate base component of the buffer consumes the added H$^+$ ions.

c) The conjugate acid component of the buffer consumes the added H$^+$ ions.

d) The water molecules in the buffer solution absorb the added acid.

52. Which statement most accurately differentiates between Bronsted-Lowry and Lewis acid-base theories?

a) Bronsted-Lowry defines acids as proton donors; Lewis defines acids as electron pair acceptors.

b) Bronsted-Lowry requires the presence of hydrogen; Lewis does not.

c) The Lewis definition is broader as it does not require a proton for acid-base behavior.

d) All acids are Lewis acids, but not all Lewis acids are Bronsted-Lowry acids.

53. Why must oxidation and reduction always occur simultaneously in a redox reaction?

a) To maintain charge neutrality in the reaction.

b) One species must lose electrons for another species to gain them.

c) Both processes involve a change in oxidation state.

d) All of the above.

54. Hydrogen exhibits dual nature, showing properties similar to both alkali metals and halogens. Which of the following is a property that aligns hydrogen with alkali metals?

a) Forms diatomic molecules.

b) Exhibits a -1 oxidation state.

c) Readily loses one electron to form H+.

d) Is a non-metal.

55. The 'diagonal relationship' observed in the periodic table (e.g., between Li and Mg) is primarily attributed to:

a) Similar number of valence electrons.

b) Similar charge/radius ratio of their ions.

c) Similar electronegativity values.

d) Similar metallic character.

56. Which of the following is the primary chemical process responsible for the formation of sulfuric acid (H_2SO_4) in acid rain?

a) Reaction of sulfur with water.

b) Oxidation of sulfur dioxide to sulfur trioxide, followed by reaction with water.

c) Direct dissolution of sulfur in rainwater.

d) Reaction of hydrogen sulfide with oxygen.

57. The 'greenhouse effect' is crucial for maintaining Earth's temperature. Why is the enhanced greenhouse effect considered a global environmental concern?

a) It directly causes ozone depletion.

b) It leads to an increase in Earth's average temperature due to increased trapping of infrared radiation.

c) It reduces atmospheric oxygen levels.

d) It causes acid rain.

58. Which of the following electronic effects explains the increased acidity of chloroacetic acid compared to acetic acid?

a) Resonance effect

b) Hyperconjugation

c) Negative inductive effect (-I effect)

d) Positive inductive effect (+I effect)

59. Identify the statement that correctly differentiates between structural isomers and stereoisomers.

a) Structural isomers have different molecular formulas, stereoisomers have the same.

b) Structural isomers have different connectivity of atoms, stereoisomers have the same connectivity but different spatial arrangements.

c) Stereoisomers can be interconverted by simple bond rotation, structural isomers cannot.

d) Structural isomers have different IUPAC names, while stereoisomers may have the same IUPAC name with stereodesignators.

60. What is the fundamental reason why 'functional groups' are so important in organic chemistry?

a) They determine the physical state of the compound.

b) They are the sites of characteristic chemical reactions and largely determine the compound's properties.

c) They provide information about the molecular mass.

d) They dictate the hybridization of carbon atoms.

61. Markovnikov's rule for the addition of HBr to an unsymmetrical alkene states that the negative part of the addendum adds to the carbon atom of the double bond which has:

a) More hydrogen atoms.

b) Fewer hydrogen atoms.

c) More alkyl groups.

d) Fewer alkyl groups.

62. The relative stability of carbocations follows the order Tertiary > Secondary > Primary > Methyl. This order is primarily explained by:

a) Inductive effect only.

b) Resonance effect only.

c) Hyperconjugation and positive inductive effect.

d) Steric hindrance.

63. Ozonolysis of an alkene is a valuable reaction for:

a) Polymerization of the alkene.

b) Determining the position of the double bond in an unknown alkene.

c) Synthesizing polymers.

d) Converting alkenes to alkanes.

64. A compound is considered 'aromatic' if it is cyclic, planar, has complete conjugation, and follows Huckel's rule. What does Huckel's rule state about the number of π electrons?

a) (4n + 2) π electrons

b) 4n π electrons

c) (2n + 2) π electrons

d) n π electrons

65. A disproportionation reaction is characterized by:

a) An element oxidizing another element.

b) An element reducing another element.

c) An element undergoing both oxidation and reduction simultaneously.

d) Two different elements undergoing oxidation.

66. Which of the following statements about 'isotopes' is correct?

a) They have the same mass number but different atomic numbers.

b) They have different chemical properties due to different electron counts.

c) They have the same atomic number but different mass numbers.

d) They always have different numbers of protons.

67. The large difference in the boiling points of water (100C) and hydrogen sulfide (-60C) can be primarily attributed to:

a) Difference in molecular mass.

b) Difference in electronegativity.

c) Extensive hydrogen bonding in water.

d) Stronger van der Waals forces in hydrogen sulfide.

68. When considering the strength of acids, HClO$_4$ is much stronger than HClO. This trend is best explained by:

a) The increasing atomic size of the central atom.

b) The decreasing electronegativity of the central atom.

c) The increasing number of oxygen atoms, which stabilize the conjugate base through resonance and inductive effects.

d) The increasing bond strength between hydrogen and oxygen.

69. Which of the following is the most significant consequence of the anomalous behaviour of lithium among alkali metals?

a) It is harder than other alkali metals.

b) It forms nitrides.

c) It exhibits a diagonal relationship with magnesium.

d) It has a higher melting point.

70. The stability of different conformers of ethane (e.g., staggered vs. eclipsed) is primarily explained by:

a) Difference in bond lengths.

b) Differences in bond angles.

c) Torsional strain and steric strain.

d) Difference in hybridization.

71. A ball is thrown vertically upwards. Assuming air resistance is negligible, which of the following statements about its motion is correct?

a) The acceleration is constant and directed upwards.

b) The acceleration is constant and directed downwards.

c) The acceleration is variable, decreasing as the ball rises.

d) The acceleration is variable, increasing as the ball rises.

72. A car is moving on a level road. If the radius of the circular path is doubled and the speed is tripled, what is the ratio of the new centripetal acceleration to the original centripetal acceleration?

a) 3:2

b) 9:2

c) 2:9

d) 2:3

73. A block is placed on an inclined plane. The angle of inclination is gradually increased. If μs is the coefficient of static friction, the block will start sliding when the angle of inclination (θ) is:

a) $\theta = \tan^{-1}(\mu s)$

b) $\theta = \sin^{-1}(\mu s)$

c) $\theta = \cos^{-1}(\mu s)$

d) $\theta = \mu s$

74. A system of particles has zero net external force acting on it. Which of the following quantities must remain constant?

a) Velocity of each particle.

b) Momentum of each particle.

c) Kinetic energy of the system.

d) Momentum of the system.

75. A body is rotating with a constant angular velocity. Which of the following statements is correct?

a) The net torque acting on it must be zero.

b) The net force acting on it must be zero.

c) Its angular momentum must be changing.

d) Its kinetic energy must be zero.

76. Consider two planets, P and Q, orbiting a star. Planet P is closer to the star than planet Q. According to Kepler's laws, which statement about their orbital periods (TP and TQ) is true?

a) TP=TQ

b) TP>TQ

c) TP<TQ

d) The relationship depends on the masses of the planets.

77. A wire is stretched by applying a force. If the length of the wire is doubled, the Young's modulus of the material will:

a) Be doubled.

b) Be halved.

c) Remain unchanged.

d) Become four times.

78. Which of the following statements about the surface tension of a liquid is correct?

a) It increases with an increase in temperature.

b) It is caused by cohesive forces between liquid molecules.

c) It is independent of the liquid's nature.

d) It decreases with an increase in the surface area.

79. A gas is compressed isothermally. Which of the following statements is correct?

a) The pressure remains constant.

b) The temperature increases.

c) The internal energy of the gas increases.

d) The heat is rejected by the gas.

80. A heat engine operates between two reservoirs at temperatures T1 and T2 (T1>T2). The maximum possible efficiency of the engine is given by:

a) 1−T2T1

b) 1−T1T2

c) T2T1−1

d) T1T2−1

81. Which of the following statements about simple harmonic motion (SHM) is incorrect?

a) The acceleration is proportional to the displacement.

b) The velocity is maximum at the equilibrium position.

c) The potential energy is maximum at the extreme positions.

d) The total energy is proportional to the amplitude.

82. A wave is traveling on a string. If the tension in the string is quadrupled, the speed of the wave will:

a) Remain the same.

b) Be doubled.

c) Be halved.

d) Be quadrupled.

83. The Doppler effect describes the change in observed frequency of a wave due to the relative motion between the source and the observer. Which of the following is correct?

a) The observed frequency increases if the source and observer move away from each other.

b) The observed frequency decreases if the source and observer move towards each other.

c) The observed frequency is unaffected by relative motion.

d) The observed frequency increases if the source moves towards a stationary observer.

84. Two coherent sources produce interference. The path difference at a point for constructive interference must be:

a) An odd multiple of 2λ

b) An even multiple of 2λ

c) An integral multiple of λ

d) An integral multiple of 4λ

85. In a single-slit diffraction experiment, if the width of the slit is decreased, the width of the central maximum will:

a) Decrease.

b) Increase.

c) Remain the same.

d) First increase, then decrease.

86. Which of the following statements about the electric field due to a uniformly charged sphere is correct?

a) It is zero everywhere inside the sphere.

b) It is constant inside the sphere.

c) It increases linearly with distance inside the sphere.

d) It varies inversely with the square of the distance outside the sphere.

87. A parallel-plate capacitor is charged and then disconnected from the battery. If the distance between the plates is doubled, the energy stored in the capacitor will:

a) Be halved.

b) Be doubled.

c) Remain the same.

d) Become four times.

88. The resistivity of a metallic conductor generally increases with increasing temperature. This is primarily because:

a) The number density of free electrons decreases.

b) The relaxation time of free electrons decreases.

c) The mass of the electrons increases.

d) The charge of the electrons increases.

89. When an ideal gas undergoes an adiabatic expansion:

a) Its internal energy increases.

b) Its temperature decreases.

c) Heat is absorbed by the gas.

d) Its pressure remains constant.

90. Two long parallel wires carry currents in the same direction. The force between them is:

a) Attractive.

b) Repulsive.

c) Zero.

d) Depends on the magnitude of the currents.

91. Which of the following statements about electromagnetic waves is incorrect?

a) They are transverse waves.

b) They travel at the speed of light in a vacuum.

c) They are deflected by electric and magnetic fields.

d) They carry energy and momentum.

92. In an AC circuit containing only an inductor, the current:

a) Is in phase with the voltage.

b) Lags the voltage by 90.

c) Leads the voltage by 90.

d) Leads the voltage by 180.

93. Which of the following electromagnetic radiations has the highest frequency?

a) Radio waves.

b) Microwaves.

c) Infrared waves.

d) Gamma rays.

94. In a Young's double-slit experiment, if white light is used instead of monochromatic light, the central fringe will be:

a) Colored.

b) Dark.

c) White.

d) Fringes will not be observed.

95. The resolving power of a microscope is increased by:

a) Increasing the wavelength of light used.

b) Decreasing the aperture of the objective lens.

c) Increasing the aperture of the objective lens.

d) Decreasing the refractive index of the medium.

96. Which of the following statements about photons is correct?

a) Their momentum is zero.

b) Their energy is inversely proportional to their wavelength.

c) Their speed depends on the medium they are traveling through.

d) Their energy is directly proportional to their frequency.

97. The de Broglie wavelength of a particle is inversely proportional to its:

a) Charge.

b) Momentum.

c) Energy.

d) Velocity.

98. In a nuclear reactor, the purpose of the moderator is to:

a) Absorb neutrons.

b) Slow down neutrons.

c) Speed up neutrons.

d) Control the fission rate.

99. Which of the following statements about semiconductors is correct?

a) Their conductivity is independent of temperature.

b) Their conductivity decreases with increasing temperature.

c) Their conductivity increases with increasing temperature.

d) They have very high conductivity.

100. In a p-n junction diode, the depletion region contains:

a) Mobile electrons and holes.

b) Immobile ions.

c) Majority carriers only.

d) Minority carriers only.

ANSWER KEY

1. d
2. a
3. b
4. c
5. c
6. a
7. c
8. b
9. b
10. c
11. b
12. a
13. b
14. a
15. c
16. d
17. a
18. a
19. a
20. c
21. a
22. c
23. c
24. b
25. b
26. d
27. d
28. b
29. c
30. b
31. c
32. c
33. b
34. c
35. b
36. c
37. c
38. b
39. c

40. c
41. d
42. c
43. c
44. c
45. b
46. b
47. b
48. b
49. b
50. a
51. b
52. c
53. d
54. c
55. b
56. b
57. b
58. c
59. d
60. b
61. b
62. c
63. b
64. a
65. c
66. c
67. c
68. c
69. c
70. c
71. b
72. b
73. a
74. d
75. a
76. c
77. c
78. b
79. d
80. b

81. d
82. b
83. d
84. c
85. b
86. d
87. b
88. b
89. b
90. a
91. c
92. c
93. d
94. c
95. c
96. d
97. b
98. b
99. c
100. b