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## **AFNS MCQs (Q51 – Q100)**

**Q51. The current gain ( $\beta$ ) of a transistor is the ratio of:**

- A)  $I_E / I_B$
- B)  $I_B / I_C$

Prepared by Areeba Munir

C) IC / IB ☒

D) IE / IC

### **Book Reference:**

Book: FSc Physics Part-II – Chapter 14: Electronics – Topic: Transistor Current Gain

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**Q52. The efficiency ( $\eta$ ) of a machine is given by the formula:**

A)  $\eta = \text{Output} / \text{Input} \times 100$  ☒

B)  $\eta = \text{Input} / \text{Output} \times 100$

C)  $\eta = \text{Input} / \text{Power Loss} \times 100$

D)  $\eta = \text{Force} / \text{Work Done} \times 100$

### **Book Reference:**

Book: FSc Physics Part-I – Chapter 5: Work and Energy – Topic: Efficiency of Machines

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**Q53. In Young's Double-Slit Experiment, if slit separation is halved and screen distance is doubled, the fringe width becomes:**

A) Half of original

B) Same as original

C) Double of original

D) Four times original ☒

## **Book Reference:**

Book: FSc Physics Part-II – Chapter 12: Wave Optics – Topic: Young's Double-Slit Experiment

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**Q54. Which of the following best describes an exothermic reaction?**

The advertisement features a dark green background with a faint image of students in uniforms. At the top right is the Pro Genius Academy logo. The main title 'AFNS 2-Way Preparation' is in large yellow and white text. Below it are two yellow boxes comparing 'Self-Learning Course' and 'PGS Pro Notes'. The 'Self-Learning Course' box lists 'Live Classes' with a red 'x' and 'Rec. Lectures', 'PDF Notes', and '60 Mock Test' with green checkmarks. Its fee is 3700/-. The 'PGS Pro Notes' box lists 'Live Classes' with a red 'x' and 'Rec. Lectures' with a red 'x', and 'PDF Notes' and '60 Mock Test' with green checkmarks. Its fee is 3000/-. At the bottom, a black bar contains the text 'Visit Our Website' with a globe icon and the website address 'www.progeniusstudents.com'.

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- A) Absorbs heat from surroundings
- B) Releases heat to surroundings ✓
- C) Has positive enthalpy change

D) Always occurs spontaneously

## **Book Reference:**

Book: FSc Chemistry Part-I – Chapter 6: Thermochemistry – Topic:  
Exothermic and Endothermic Reactions

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### **Q55. Enthalpy means:**

- A) Heat absorbed at constant pressure ☒
- B) Heat absorbed at constant volume
- C) Random motion of particles
- D) Work done by system

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## **Book Reference:**

Book: FSc Chemistry Part-I – Chapter 6: Thermochemistry – Topic:  
Enthalpy

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### **Q56. A molecule with planar trigonal shape shows which type of hybridization?**

- A)  $sp$
- B)  $sp^2$  ☒
- C)  $sp^3$
- D)  $dsp^2$

## **Book Reference:**

Book: FSc Chemistry Part-I — Chapter 4: Chemical Bonding — Topic: Hybridization

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**Q57. The ion  $V^{3+}$  is:**

- A) Colored ☒
- B) Colorless
- C) Transparent
- D) None

## **Book Reference:**

Book: FSc Chemistry Part-II — Chapter 5: Transition Elements — Topic: Color of Transition Metal Ions

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**Q58. He died ----- cancer.**

- A) by
- B) of ☒
- C) with
- D) from

## **Book Reference:**

Book: English Grammar & Composition — Topic: Prepositions

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**Q59. Prostaglandins are released by:**

- A) Liver
- B) Fatty acids ☒
- C) Kidney
- D) Pituitary gland

### **Book Reference:**

Book: FSc Biology Part-II — Chapter 27: Reproduction — Topic: Hormonal Regulation

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**Q60. The functional unit of kidney is:**

- A) Neuron
- B) Nephron ☒
- C) Glomerulus
- D) Tubule

### **Book Reference:**

Book: FSc Biology Part-II — Chapter 16: Excretion — Topic: Structure of Nephron

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**Q61. Which protein complex contains 3 polypeptide chains?**

- A) Hemoglobin
- B) Troponin ☒
- C) Myosin
- D) Actin

### **Book Reference:**

Book: FSc Biology Part-II — Chapter 16: Support & Movement — Topic: Muscle Proteins

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**Q62. In  $\text{XeF}_2\text{XeF}_2$ , the number of lone pairs on Xe atom is:**

- A) 2
- B) 3 ☒
- C) 4
- D) 5

### **Book Reference:**

Book: FSc Chemistry Part-II — Chapter 5: Group VA Elements — Topic: Xenon Compounds

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**Q63. Which molecule has the strongest bond?**

- A) Ethane
- B) Ethene

- C) Ethyne ☒
- D) Benzene

### **Book Reference:**

Book: FSc Chemistry Part-II — Chapter 12: Aliphatic Hydrocarbons — Topic: Bond Strengths

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**Q64. The chemical present in banana responsible for ripening is:**

- A) Ethylene (Ethene) ☒
- B) Methane
- C) Ethanol
- D) Acetylene

### **Book Reference:**

Book: FSc Biology Part-I — Chapter 12: Hormonal Coordination in Plants — Topic: Ethene

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**Q65. In hydrogen atom at ground state, the bond is:**

- A) Positive
- B) Negative
- C) Both positive & negative ✓
- D) None

## **Book Reference:**

Book: FSc Physics Part-I — Chapter 17: Atomic Spectra — Topic: Hydrogen Atom

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**Q66. Which state of matter has the strongest internal energy at  $0^{\circ}\text{C}$ ?**

- A) Gas ☒
- B) Liquid
- C) Solid
- D) Plasma

### **Book Reference:**

Book: FSc Physics Part-I – Chapter 10: Thermal Properties of Matter –  
Topic: Internal Energy

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**Q67. Water shows its maximum density at:**

- A)  $0^{\circ}\text{C}$
- B)  $4^{\circ}\text{C}$  ☒
- C)  $100^{\circ}\text{C}$
- D) 273 K

### **Book Reference:**

Book: FSc Physics Part-I – Chapter 10: Thermal Properties of Matter –  
Topic: Anomalous Expansion of Water

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**Q68. Michelson interferometer is used to measure:**

- A) Frequency of light
- B) Wavelength of light ☒
- C) Energy of light
- D) Velocity of light

### **Book Reference:**

Book: FSc Physics Part-II — Chapter 12: Wave Optics — Topic: Interference

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**Q69. Which vitamin functions as a coenzyme in amino acid metabolism?**

- A) Vitamin B1 (Thiamine)
- B) Vitamin B6 (Pyridoxine) ☒
- C) Vitamin C (Ascorbic acid)
- D) Vitamin D

### **Book Reference:**

Book: FSc Biology Part-I — Chapter 2: Biological Molecules — Topic: Vitamins

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**Q70. The correct order of reactivity towards electrophilic substitution is:**

- A) Benzene > Toluene > Nitrobenzene
- B) Nitrobenzene > Benzene > Toluene
- C) Toluene > Benzene > Nitrobenzene ☒

D) Benzene > Nitrobenzene > Toluene

### **Book Reference:**

Book: FSc Chemistry Part-II — Chapter 14: Aromatic Hydrocarbons —  
Topic: Electrophilic Substitution

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**Q71. Which law explains the concept of mass defect in nuclear reactions?**

- A) Dalton's Law
- B) Avogadro's Law
- C) Einstein's Mass–Energy Equivalence ( $E=mc^2$ ) ☒
- D) Boyle's Law

### **Book Reference:**

Book: FSc Physics Part-II — Chapter 21: Nuclear Physics — Topic: Mass Defect

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**Q72. The pH of a 0.001 M HCl solution is:**

- A) 1
- B) 2
- C) 3 ☒
- D) 4

### **Book Reference:**

Book: FSc Chemistry Part-I — Chapter 9: Acids, Bases & Salts — Topic: pH Scale

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**Q73. The hybridization of the central atom in  $\text{XeF}_4$  is:**

- A)  $\text{sp}^3$
- B)  $\text{sp}^3\text{d}$
- C)  $\text{sp}^3\text{d}^2$  ✓

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- D)  $\text{sp}^3\text{d}^3$

## **Book Reference:**

Book: FSc Chemistry Part-II — Chapter 5: Group VA Elements — Topic: Hybridization

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**Q74. In Kingdom Animalia, which phylum has nephridia for excretion?**

- A) Mollusca
- B) Arthropoda
- C) Annelida ✓
- D) Echinodermata

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## **Book Reference:**

Book: FSc Biology Part-I — Chapter 10: Kingdom Animalia — Topic: Excretory Organs

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**Q75. A block of mass 2 kg is moving with velocity 5 m/s. Its kinetic energy is:**

- A) 10 J
- B) 20 J
- C) 25 J ☒
- D) 50 J

## **Book Reference:**

Book: FSc Physics Part-I — Chapter 5: Work and Energy — Topic: Kinetic Energy

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**Q76. The largest artery in the human body is:**

- A) Pulmonary artery
- B) Coronary artery
- C) Carotid artery
- D) Aorta ☒

## **Book Reference:**

Book: FSc Biology Part-II — Chapter 18: Circulatory System — Topic: Human Heart & Vessels

**Q77. The hormone that controls blood sugar level is:**

- A) Adrenaline
- B) Glucagon
- C) Insulin ☒
- D) Thyroxine

### **Book Reference:**

Book: FSc Biology Part-II — Chapter 27: Endocrine System — Topic: Pancreatic Hormones

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**Q78. Which gases are used in the Haber process for ammonia synthesis?**

- A) Oxygen + Nitrogen
- B) Nitrogen + Hydrogen ☒
- C) Carbon dioxide + Hydrogen
- D) Oxygen + Hydrogen

### **Book Reference:**

Book: FSc Chemistry Part-I — Chapter 6: Chemical Equilibrium — Topic: Haber Process

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**Q79. The chemical formula of bleaching powder is:**

- A)  $\text{CaCl}_2$
- B)  $\text{Ca(OH)}_2$
- C)  $\text{CaOCl}_2$  ✓
- D)  $\text{CaCO}_3$

### **Book Reference:**

Book: FSc Chemistry Part-II – Chapter 5: Group IIA Elements – Topic: Bleaching Powder

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**Q80. The energy produced in stars is mainly due to:**

- A) Nuclear fission
- B) Nuclear fusion ✓
- C) Radioactive decay
- D) Chemical reactions

### **Book Reference:**

Book: FSc Physics Part-II – Chapter 21: Nuclear Physics – Topic: Fusion Reactions

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**Q81. The speed of light in vacuum is:**

- A)  $3 \times 10^6 \times 10^6 \text{ m/s}$
- B)  $3 \times 10^7 \times 10^7 \text{ m/s}$
- C)  $3 \times 10^8 \times 10^8 \text{ m/s}$  ✓



D)  $3 \times 10^9 \times 10^9 \text{ m/s}$

### **Book Reference:**

Book: FSc Physics Part-II — Chapter 12: Wave Optics — Topic: Speed of Light

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**Q82. The antonym of Genuine is:**

- A) Original
- B) Real
- C) Fake ☒
- D) True

### **Book Reference:**

Book: English Grammar & Vocabulary — Topic: Antonyms

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**Q83. The synonym of Precise is:**

- A) Exact ☒
- B) Rough
- C) False
- D) Wrong

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## **Book Reference:**

Book: English Grammar & Vocabulary — Topic: Synonyms

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**Q84. Choose the correct passive voice of the sentence Ali wrote a letter:**

- A) A letter was written by Ali ☒
- B) A letter writes Ali
- C) Ali was written a letter
- D) A letter had been written Ali

## **Book Reference:**

Book: English Grammar & Composition — Topic: Active & Passive Voice

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**Q85. The enzyme responsible for the breakdown of fats is:**

- A) Amylase
- B) Lipase ☒
- C) Protease
- D) Maltase

## **Book Reference:**

Book: FSc Biology Part-I — Chapter 2: Biological Molecules — Topic: Enzymes

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**Q86. The tissue responsible for water transport in plants is:**

- A) Phloem
- B) Xylem ☒
- C) Cambium
- D) Cortex

### **Book Reference:**

Book: FSc Biology Part-I — Chapter 8: Transport — Topic: Xylem

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**Q87. The law of conservation of mass was given by:**

- A) Dalton
- B) Avogadro
- C) Lavoisier ☒
- D) Rutherford

### **Book Reference:**

Book: FSc Chemistry Part-I — Chapter 1: Basic Concepts — Topic: Laws of Chemical Combination

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**Q88. The orbital which has a spherical shape is:**

- A) s-orbital ☒

- B) p-orbital
- C) d-orbital
- D) f-orbital

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## **Book Reference:**

Book: FSc Chemistry Part-I — Chapter 3: Atomic Structure — Topic: Shapes of Orbitals

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**Q89. Which gas contributes the most to the greenhouse effect?**


- A) Methane ( $\text{CH}_4$ )
- B) Carbon dioxide ( $\text{CO}_2$ ) 
- C) Nitrous oxide ( $\text{N}_2\text{O}$ )
- D) Ozone ( $\text{O}_3$ )

## **Book Reference:**

Book: FSc Biology Part-II — Chapter 25: Ecosystem — Topic: Greenhouse Effect

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**Q90. The area under a velocity–time graph represents:**

- A) Speed
- B) Acceleration
- C) Displacement 

D) Force

### **Book Reference:**

Book: FSc Physics Part-I – Chapter 2: Motion – Topic: Graphical Analysis

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**Q91. The synonym of Cautious is:**

- A) Careful ☒
- B) Careless
- C) Rough
- D) Aggressive

### **Book Reference:**

Book: English Grammar & Vocabulary – Topic: Synonyms

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**Q92. Which amine is the most basic?**

- A) Ammonia ☒
- B) Aniline
- C) Methylamine
- D) Ethylamine

### **Book Reference:**

Book: FSc Chemistry Part-II – Chapter 15: Amines – Topic: Basicity

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**Q93. Which process occurs in mitochondria?**

- A) Anaerobic respiration
- B) Aerobic respiration ☒
- C) Photosynthesis
- D) Fermentation

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### **Book Reference:**

Book: FSc Biology Part-I — Chapter 5: Cell — Topic: Mitochondria

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**Q94. The wavelength range of visible light is:**

- A) 200–400 nm
- B) 400–700 nm ☒
- C) 700–900 nm
- D) 1000–1200 nm

### **Book Reference:**

Book: FSc Physics Part-II — Chapter 12: Wave Optics — Topic: Spectrum

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**Q95. Which catalyst is used in the Haber process?**

- A) Nickel
- B) Iron with promoters ☒
- C) Platinum
- D) Copper

## **Book Reference:**

Book: FSc Chemistry Part-I — Chapter 6: Chemical Equilibrium — Topic: Haber Process

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**Q96. The smallest bone in the human body is:**

- A) Malleus
- B) Incus
- C) Stapes ☒
- D) Femur

## **Book Reference:**

Book: FSc Biology Part-II — Chapter 16: Support & Movement — Topic: Skeleton

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**Q97. The process by which plants lose water in the form of vapor is called:**

- A) Respiration
- B) Photosynthesis
- C) Transpiration ☒
- D) Translocation

## **Book Reference:**

Book: FSc Biology Part-I — Chapter 8: Transport — Topic: Transpiration

---

**Q98. The SI unit of power is:**

- A) Joule
- B) Watt ☒
- C) Newton
- D) Pascal

### **Book Reference:**

Book: FSc Physics Part-I — Chapter 5: Work and Energy — Topic: Power

---

**Q99. The chemical formula of common salt is:**

- A) KCl
- B) NaCl ☒
- C)  $\text{CaCl}_2$
- D)  $\text{Na}_2\text{CO}_3$

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### **Book Reference:**

Book: FSc Chemistry Part-I — Chapter 1: Basic Concepts — Topic: Common Compounds

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**Q100. Deficiency of iodine in the human body causes:**

- A) Diabetes
- B) Goiter ☒
- C) Rickets



D) Scurvy

## **Book Reference:**

Book: FSc Biology Part-II — Chapter 27: Endocrine System — Topic: Thyroid Disorders

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