

AFOQT Practice Questions and Answers

Verbal Analogies (Questions 1-10)

These test relationships between words.

1. Tree is to Forest as Soldier is to:

- A) Weapon
- B) Battle
- C) Army
- D) Uniform

Answer: C) Army

Explanation: A tree is a component of a forest, just as a soldier is a component of an army.

2. Hunger is to Eat as Thirst is to:

- A) Drink
- B) Sleep
- C) Run
- D) Read

Answer: A) Drink

Explanation: Hunger is satisfied by eating, just as thirst is satisfied by drinking.

3. Book is to Read as Food is to:

- A) Cook
- B) Eat
- C) Buy
- D) Grow

Answer: B) Eat

Explanation: A book is meant to be read, just as food is meant to be eaten.

4. Pen is to Ink as Pencil is to:

- A) Eraser

- B) Paper
- C) Lead
- D) Sharpener

Answer: C) Lead

Explanation: A pen uses ink to write, just as a pencil uses lead (graphite) to write.

5. Bird is to Fly as Fish is to:

- A) Swim
- B) Walk
- C) Jump
- D) Crawl

Answer: A) Swim

Explanation: Flying is the natural movement of a bird, just as swimming is the natural movement of a fish.

6. Hot is to Cold as Light is to:

- A) Bright
- B) Heavy
- C) Dark
- D) Fast

Answer: C) Dark

Explanation: Hot and cold are opposites, just as light and dark are opposites.

7. Doctor is to Patient as Lawyer is to:

- A) Judge
- B) Client
- C) Court
- D) Law

Answer: B) Client

Explanation: A doctor treats a patient, just as a lawyer represents a client.

8. Circle is to Sphere as Square is to:

- A) Rectangle
- B) Cube
- C) Triangle
- D) Pyramid

Answer: B) Cube

Explanation: A circle is a 2D shape, and its 3D counterpart is a sphere; a square is 2D, and its 3D counterpart is a cube.

9. Whisper is to Shout as Trickle is to:

- A) Drip
- B) Flow
- C) Gush
- D) Leak

Answer: C) Gush

Explanation: Whispering is quiet speaking, opposite to shouting (loud); trickling is slow flow, opposite to gushing (fast flow).

10. Oven is to Bake as Stove is to:

- A) Boil
- B) Freeze
- C) Grill
- D) Microwave

Answer: A) Boil

Explanation: An oven is used primarily to bake, just as a stove is used primarily to boil.

Arithmetic Reasoning (Questions 11-20)

These involve word problems and practical math.

11. If a car travels 240 miles in 4 hours, what is its average speed?

- A) 50 mph
- B) 60 mph

C) 70 mph

D) 80 mph

Answer: B) 60 mph

Explanation: Average speed = total distance \div time. So, 240 miles \div 4 hours = 60 mph.

12. A shirt costs \$20 after a 25% discount. What was the original price?

A) \$25

B) \$26.67

C) \$27

D) \$30

Answer: A) \$25

Explanation: The discounted price is 75% of the original (100% - 25%). Let original be x ; $0.75x = 20$, so $x = 20 \div 0.75 = 25$. Subtract the discount amount from original to verify.

13. If 3 workers build a wall in 8 days, how many days for 6 workers?

A) 4 days

B) 6 days

C) 12 days

D) 16 days

Answer: A) 4 days

Explanation: Work rate is inverse to workers. 3 workers take 8 days, so total work = $3 \times 8 = 24$ worker-days. For 6 workers: $24 \div 6 = 4$ days.

14. A recipe for 4 people uses 2 cups of flour. How much for 10 people?

A) 4 cups

B) 5 cups

C) 6 cups

D) 8 cups

Answer: B) 5 cups

Explanation: Ratio is $10/4 = 2.5$ times more people, so flour = $2 \times 2.5 = 5$ cups.

15. John has \$150. He spends $1/3$ on food and $1/4$ of the remainder on books. How much left?

- A) \$50
- B) \$75
- C) \$100
- D) \$112.50

Answer: B) \$75

Explanation: Food: $150 \times \frac{1}{3} = 50$, remainder = $150 - 50 = 100$. Books: $100 \times \frac{1}{4} = 25$. Left: $100 - 25 = 75$.

16. A tank holds 100 gallons. It fills at 5 gal/min and drains at 2 gal/min. Time to fill if both open?

- A) 20 min
- B) 25 min
- C) 33.33 min
- D) 50 min

Answer: C) 33.33 min

Explanation: Net fill rate = $5 - 2 = 3$ gal/min. Time = $100 \div 3 \approx 33.33$ min.

17. If 5 apples cost \$2, how much for 8 apples?

- A) \$2.40
- B) \$3.20
- C) \$3.50
- D) \$4.00

Answer: B) \$3.20

Explanation: Cost per apple = $2 \div 5 = 0.40$. For 8: $8 \times 0.40 = 3.20$.

18. A plane flies 600 miles at 200 mph. Return at 150 mph. Average speed?

- A) 171.43 mph
- B) 175 mph
- C) 180 mph
- D) 200 mph

Answer: A) 171.43 mph

Explanation: Time to = $600/200 = 3$ hrs, return = $600/150 = 4$ hrs. Total distance = 1200, total time = 7 hrs. Average = $1200 \div 7 \approx 171.43$ mph. Use harmonic mean for average speed: $2ab/(a+b) = 2 \times 200 \times 150 / (200+150) = 60000/350 \approx 171.43$.

20. If $2/5$ of a number is 40, what is the number?

A) 50

B) 80

C) 100

D) 200

Answer: C) 100

Explanation: Let number = x. $2/5 x = 40$, so $x = 40 \times 5/2 = 100$.

Word Knowledge (Questions 21-30)

These test synonyms or definitions.

21. Audacious most nearly means:

A) Timid

B) Bold

C) Quiet

D) Lazy

Answer: B) Bold

Explanation: Audacious means daring or bold.

22. Benevolent most nearly means:

A) Kind

B) Angry

C) Sad

D) Greedy

Answer: A) Kind

Explanation: Benevolent means well-meaning and kind.

23. Cacophony most nearly means:

- A) Harmony
- B) Noise
- C) Silence
- D) Melody

Answer: B) Noise

Explanation: Cacophony means a harsh, discordant mixture of sounds.

24. Debilitate most nearly means:

- A) Strengthen
- B) Weaken
- C) Heal
- D) Build

Answer: B) Weaken

Explanation: Debilitate means to make someone weak.

25. Eloquent most nearly means:

- A) Silent
- B) Articulate
- C) Rude
- D) Confused

Answer: B) Articulate

Explanation: Eloquent means fluent or persuasive in speaking.

26. Furtive most nearly means:

- A) Open
- B) Secretive
- C) Loud
- D) Honest

Answer: B) Secretive

Explanation: Furtive means attempting to avoid notice, secretive.

27. Gregarious most nearly means:

- A) Solitary
- B) Sociable
- C) Shy
- D) Angry

Answer: B) Sociable

Explanation: Gregarious means fond of company, sociable.

28. Harbinger most nearly means:

- A) Follower
- B) Herald
- C) Enemy
- D) Friend

Answer: B) Herald

Explanation: Harbinger means a person or thing that announces or signals the approach of another.

29. Impeccable most nearly means:

- A) Faulty
- B) Flawless
- C) Dirty
- D) Broken

Answer: B) Flawless

Explanation: Impeccable means in accordance with the highest standards, flawless.

30. Jubilant most nearly means:

- A) Sad
- B) Joyful
- C) Angry

D) Tired

Answer: B) Joyful

Explanation: Jubilant means feeling or expressing great happiness.

Math Knowledge (Questions 31-40)

These test mathematical concepts and equations.

31. Solve for x: $3x + 5 = 20$.

A) 5

B) 6

C) 7

D) 8

Answer: A) 5

Explanation: Subtract 5 from both sides: $3x = 15$. Divide by 3: $x = 5$.

32. What is the area of a circle with radius 3? (Use $\pi \approx 3.14$)

A) 9.42

B) 18.84

C) 28.26

D) 37.68

Answer: C) 28.26

Explanation: Area = $\pi r^2 = 3.14 \times 3^2 = 3.14 \times 9 = 28.26$.

33. Factor: $x^2 - 9$.

A) $(x-3)(x+3)$

B) $(x-9)(x+1)$

C) $(x-3)^2$

D) $(x+9)(x-1)$

Answer: A) $(x-3)(x+3)$

Explanation: This is a difference of squares: $a^2 - b^2 = (a-b)(a+b)$, where $a=x$, $b=3$.

34. Simplify: $2(3x + 4) - 5x$.

- A) $x + 8$
- B) $x - 8$
- C) $6x + 8$
- D) $x + 4$

Answer: A) $x + 8$

Explanation: Distribute: $6x + 8 - 5x = (6x - 5x) + 8 = x + 8$.

35. What is $\sqrt{64}$?

- A) 6
- B) 7
- C) 8
- D) 9

Answer: C) 8

Explanation: The square root of 64 is the number that, when multiplied by itself, gives 64: $8 \times 8 = 64$.

36. Solve for y: $2y/3 = 4$.

- A) 3
- B) 6
- C) 8
- D) 12

Answer: B) 6

Explanation: Multiply both sides by 3: $2y = 12$. Divide by 2: $y = 6$.

37. What is the volume of a cube with side 4?

- A) 16
- B) 32
- C) 64
- D) 128

Answer: C) 64

Explanation: Volume = side³ = $4 \times 4 \times 4 = 64$.

38. Convert 25% to a fraction.

- A) 1/2
- B) 1/4
- C) 1/5
- D) 1/3

Answer: B) 1/4

Explanation: $25\% = 25/100 = 1/4$ after simplifying by dividing numerator and denominator by 25.

39. What is 4! (4 factorial)?

- A) 12
- B) 16
- C) 20
- D) 24

Answer: D) 24

Explanation: $4! = 4 \times 3 \times 2 \times 1 = 24$.

40. Solve the inequality: $x + 2 > 5$.

- A) $x > 3$
- B) $x > 7$
- C) $x < 3$
- D) $x < 7$

Answer: A) $x > 3$

Explanation: Subtract 2 from both sides: $x > 3$.

Reading Comprehension (Questions 41-50)

These involve short passages followed by questions. (Passages are brief for this format.)

41. Passage: The Amazon Rainforest is home to diverse wildlife and plays a key role in global oxygen production. Deforestation threatens its existence. What is the main threat mentioned?

- A) Wildlife
- B) Oxygen
- C) Deforestation
- D) Diversity

Answer: C) Deforestation

Explanation: The passage states that deforestation threatens the rainforest's existence.

42. Passage: Solar energy is renewable and reduces carbon emissions compared to fossil fuels. What advantage is highlighted?

- A) Cost
- B) Renewal
- C) Emissions reduction
- D) Both B and C

Answer: D) Both B and C

Explanation: The passage notes it is renewable and reduces emissions.

43. Passage: Exercise improves physical health and mental well-being by releasing endorphins. What does exercise release?

- A) Calories
- B) Endorphins
- C) Stress
- D) Weight

Answer: B) Endorphins

Explanation: The passage directly states that exercise releases endorphins.

44. Passage: The Industrial Revolution began in Britain in the 18th century, leading to urbanization. Where did it begin?

- A) Britain

B) USA

C) France

D) Germany

Answer: A) Britain

Explanation: The passage specifies it began in Britain.

45. Passage: Vaccines work by stimulating the immune system to recognize pathogens. How do vaccines work?

A) Killing pathogens

B) Stimulating immune system

C) Replacing immune system

D) Ignoring pathogens

Answer: B) Stimulating immune system

Explanation: The passage explains that vaccines stimulate the immune system.

46. Passage: Climate change is caused by human activities like burning fossil fuels, resulting in rising temperatures. What is a cause?

A) Rising temperatures

B) Burning fossil fuels

C) Human activities (general)

D) Both B and C

Answer: D) Both B and C

Explanation: The passage lists human activities, specifically burning fossil fuels.

47. Passage: Shakespeare wrote plays like Hamlet and Romeo and Juliet, influencing literature. What did he write?

A) Novels

B) Plays

C) Poems

D) Essays

Answer: B) Plays

Explanation: The passage mentions plays like Hamlet.

48. Passage: Healthy diets include fruits, vegetables, and whole grains to prevent diseases. What do healthy diets include?

A) Fruits only

B) Fruits, vegetables, whole grains

C) Meat

D) Sweets

Answer: B) Fruits, vegetables, whole grains

Explanation: The passage lists these items.

49. Passage: Electric cars use batteries instead of gasoline, reducing pollution. What do they use?

A) Gasoline

B) Batteries

C) Diesel

D) Solar

Answer: B) Batteries

Explanation: The passage states they use batteries.

50. Passage: The human heart has four chambers and pumps blood throughout the body. How many chambers?

A) 2

B) 3

C) 4

D) 5

Answer: C) 4

Explanation: The passage directly states four chambers.

Situational Judgment (Questions 51-60)

These test leadership and decision-making in scenarios.

51. Your team misses a deadline due to one member's delay. What do you do?

- A) Ignore it
- B) Blame the member publicly
- C) Discuss privately and find solutions
- D) Quit the team

Answer: C) Discuss privately and find solutions

Explanation: This promotes accountability and improvement without demotivating the team.

52. A subordinate questions your decision. How do you respond?

- A) Dismiss them
- B) Explain your reasoning
- C) Change the decision
- D) Punish them

Answer: B) Explain your reasoning

Explanation: This builds trust and understanding in leadership.

53. You notice unethical behavior by a peer. What action?

- A) Join in
- B) Ignore it
- C) Report to supervisor
- D) Confront publicly

Answer: C) Report to supervisor

Explanation: Reporting maintains integrity and follows protocol.

54. Team conflict over tasks. Your role?

- A) Let them fight
- B) Assign tasks arbitrarily
- C) Mediate and assign based on strengths
- D) Do all tasks yourself

Answer: C) Mediate and assign based on strengths

Explanation: Mediation resolves conflict and optimizes performance.

55. High-stress situation, team panicking. What do you do?

- A) Panic with them
- B) Stay calm and delegate
- C) Leave the scene
- D) Yell at them

Answer: B) Stay calm and delegate

Explanation: Calm leadership stabilizes the team.

56. You make a mistake in a report. Next step?

- A) Hide it
- B) Blame others
- C) Admit and correct
- D) Ignore

Answer: C) Admit and correct

Explanation: Honesty builds credibility.

57. Subordinate underperforms due to personal issues. Response?

- A) Fire them
- B) Offer support and resources
- C) Increase workload
- D) Gossip

Answer: B) Offer support and resources

Explanation: Empathy improves morale and performance.

58. Group project, one member not contributing. Action?

- A) Do their work
- B) Confront and involve if needed
- C) Exclude them
- D) Complain to others

Answer: B) Confront and involve if needed

Explanation: Direct address encourages responsibility.

59. New policy you disagree with. How handle?

- A) Refuse to follow
- B) Implement while suggesting improvements
- C) Sabotage it
- D) Quit

Answer: B) Implement while suggesting improvements

Explanation: Shows professionalism and initiative.

60. Time-sensitive task, resources limited. Priority?

- A) Delay
- B) Prioritize key elements

C) Ask for extension

D) Give up

Answer: B) Prioritize key elements

Explanation: Efficient resource use ensures completion.

General Science (Questions 61-70)

These test basic scientific knowledge.

61. What is the chemical symbol for water?

A) H₂O

B) CO₂

C) O₂

D) NaCl

Answer: A) H₂O

Explanation: Water is composed of two hydrogen atoms and one oxygen atom, symbolized as H₂O.

62. What planet is known as the Red Planet?

A) Venus

B) Mars

C) Jupiter

D) Saturn

Answer: B) Mars

Explanation: Mars appears red due to iron oxide on its surface.

63. What is the process by which plants make food?

A) Respiration

B) Photosynthesis

C) Digestion

D) Fermentation

Answer: B) Photosynthesis

Explanation: Photosynthesis uses sunlight, CO₂, and water to produce glucose and oxygen.

64. What is the boiling point of water in Celsius?

A) 0

B) 32

C) 100

D) 212

Answer: C) 100

Explanation: Water boils at 100°C at standard atmospheric pressure.

65. What force keeps planets in orbit around the sun?

A) Magnetism

B) Gravity

C) Friction

D) Inertia

Answer: B) Gravity

Explanation: Gravity is the attractive force between masses, holding planets in orbit.

66. What is the basic unit of life?

A) Atom

B) Molecule

C) Cell

D) Organ

Answer: C) Cell

Explanation: Cells are the smallest structural and functional unit of organisms.

67. What gas do humans exhale?

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

Answer: B) Carbon dioxide

Explanation: Respiration produces CO₂ as a byproduct.

68. What is the hardest natural substance on Earth?

- A) Gold
- B) Iron
- C) Diamond
- D) Quartz

Answer: C) Diamond

Explanation: Diamond ranks 10 on the Mohs hardness scale.

69. What type of energy is stored in food?

- A) Kinetic
- B) Potential
- C) Chemical
- D) Thermal

Answer: C) Chemical

Explanation: Food stores energy in chemical bonds.

70. What is the pH of pure water?

A) 0

B) 7

C) 14

D) 4

Answer: B) 7

Explanation: Pure water is neutral with a pH of 7.

Aviation Information (Questions 71-80)

These test knowledge of aviation principles.

71. What does the altimeter measure?

A) Speed

B) Altitude

C) Direction

D) Fuel

Answer: B) Altitude

Explanation: The altimeter measures the aircraft's height above sea level or ground.

72. What is the primary control surface for roll?

A) Rudder

B) Elevator

C) Ailerons

D) Flaps

Answer: C) Ailerons

Explanation: Ailerons on the wings control roll by moving oppositely.

73. What causes lift in an airplane?

- A) Thrust
- B) Bernoulli's principle
- C) Gravity
- D) Drag

Answer: B) Bernoulli's principle

Explanation: Airflow over the wing creates lower pressure above, generating lift.

74. What is a stall in aviation?

- A) Engine failure
- B) Loss of lift
- C) Overspeed
- D) Landing

Answer: B) Loss of lift

Explanation: A stall occurs when the angle of attack is too high, disrupting airflow over the wing.

75. What does VFR stand for?

- A) Visual Flight Rules
- B) Variable Frequency Radio
- C) Vertical Flight Route
- D) Velocity for Rotation

Answer: A) Visual Flight Rules

Explanation: VFR allows pilots to fly using visual references.

76. What is the function of the rudder?

- A) Pitch

B) Yaw

C) Roll

D) Thrust

Answer: B) Yaw

Explanation: The rudder controls yaw, the left-right movement of the nose.

77. What is Mach number?

A) Speed relative to sound

B) Altitude

C) Fuel efficiency

D) Weight

Answer: A) Speed relative to sound

Explanation: Mach 1 is the speed of sound.

78. What gas is used in aircraft tires?

A) Oxygen

B) Nitrogen

C) Helium

D) Carbon dioxide

Answer: B) Nitrogen

Explanation: Nitrogen is inert and prevents oxidation.

79. What is the cockpit voice recorder for?

A) Navigation

B) Recording conversations

C) Fuel monitoring

D) Weather tracking

Answer: B) Recording conversations

Explanation: It records cockpit audio for accident investigations.

80. What does IFR stand for?

- A) Instrument Flight Rules
- B) International Flight Route
- C) In-Flight Refueling
- D) Internal Fuel Reserve

Answer: A) Instrument Flight Rules

Explanation: IFR allows flying using instruments in poor visibility.

Instrument Comprehension (Questions 81-90)

These are adapted to text; imagine instrument readings.

81. The artificial horizon shows the nose down 10 degrees, wings level. The compass is 180 degrees. What is the aircraft attitude?

- A) Climbing south
- B) Diving north
- C) Diving south
- D) Level west

Answer: C) Diving south

Explanation: Nose down indicates diving, compass 180 is south, wings level means no bank.

82. Altimeter reads 5000 ft, airspeed 150 knots, heading 090. What direction?

- A) North
- B) East
- C) South

D) West

Answer: B) East

Explanation: Heading 090 degrees is east.

83. Horizon instrument shows left bank 30 degrees, nose level. Heading 270. Attitude?

A) Banking left west

B) Banking right east

C) Level north

D) Diving south

Answer: A) Banking left west

Explanation: Left bank with heading 270 (west), nose level.

84. Vertical speed indicator shows +500 fpm. What does it mean?

A) Descending

B) Climbing

C) Level

D) Stalling

Answer: B) Climbing

Explanation: Positive feet per minute indicates climb.

85. Turn coordinator shows right turn, ball centered. What?

A) Coordinated right turn

B) Slipping left

C) Skidding right

D) No turn

Answer: A) Coordinated right turn

Explanation: Ball centered means coordinated, needle shows direction.

86. Compass shows 000 degrees. That's?

- A) North
- B) South
- C) East
- D) West

Answer: A) North

Explanation: 000 or 360 degrees is north.

87. Horizon shows right bank 45 degrees, nose up. Attitude?

- A) Climbing left turn
- B) Diving right turn
- C) Climbing right turn
- D) Level left

Answer: C) Climbing right turn

Explanation: Right bank with nose up indicates climbing right turn.

88. Airspeed indicator reads 0. What likely?

- A) Flying fast
- B) Pitot tube blocked
- C) Normal cruise
- D) High altitude

Answer: B) Pitot tube blocked

Explanation: Airspeed relies on pitot tube; blockage causes erroneous reading.

89. Attitude indicator shows inverted. What?

- A) Upside down

- B) Normal
- C) Climbing
- D) Descending

Answer: A) Upside down

Explanation: Inverted means the aircraft is upside down.

90. Heading indicator shows 135 degrees. Direction?

- A) Northeast
- B) Southeast
- C) Southwest
- D) Northwest

Answer: B) Southeast

Explanation: 135 degrees is southeast.

Block Counting (Questions 91-100)

These are text-described 3D block stacks; count how many blocks touch a given one.

91. Imagine a 3x3x3 cube stack. How many blocks touch the center block?

- A) 4
- B) 6
- C) 8
- D) 26

Answer: B) 6

Explanation: The center is touched by 6 faces (front, back, left, right, top, bottom) in a full cube.

92. In a pyramid stack: base 4 blocks, then 3, 2, 1 on top. How many touch the top block?

- A) 1

B) 2

C) 3

D) 4

Answer: A) 1

Explanation: The top block touches only the one below it.

93. A 2x2x2 cube. How many touch a corner block?

A) 1

B) 2

C) 3

D) 4

Answer: C) 3

Explanation: A corner touches three adjacent blocks.

94. Stack: layer 1 (bottom): 5 blocks in row; layer 2: 4; layer 3: 3. How many touch a middle bottom block?

A) 2

B) 3

C) 4

D) 5

Answer: C) 4

Explanation: Middle bottom touches left/right (same layer), two above if aligned, but assuming stepped, adjust; typically touches neighbors and above.

Wait, to precise: Assuming linear row, but for 3D, assume cube-like. For bottom middle: left, right, above =3. But let's say 4 if edges.

Answer: B) 3

Explanation: Left, right, and above.

95. In a 4x4x1 flat layer. How many touch a center block?

- A) 4
- B) 6
- C) 8
- D) 0

Answer: A) 4

Explanation: In 2D flat, center touches up, down, left, right =4.

96. 3-layer stack: bottom 3x3, middle 2x2, top 1x1. How many touch the top?

- A) 1
- B) 2
- C) 4
- D) 9

Answer: A) 1

Explanation: Top touches one below if centered.

97. Full 5x5x5 cube. How many touch an edge (not corner) block?

- A) 3
- B) 4
- C) 5
- D) 6

Answer: C) 5

Explanation: Edge block touches 4 in plane +1 below or above, but in full, 5 (missing one side).

For internal edge: actually in 3D, edge has 5.

98. Stack with missing blocks: assume complete $2 \times 2 \times 2$ minus one corner. How many touch the opposite corner?

- A) 2
- B) 3
- C) 4
- D) 5

Answer: B) 3

Explanation: Normally 3, minus one doesn't affect opposite.

99. In a cross shape stack: center and four arms. How many touch center?

- A) 2
- B) 3
- C) 4
- D) 5

Answer: C) 4

Explanation: Center touches the four arms.

100. $3 \times 3 \times 3$ with center hollow. How many touch a face center block?

- A) 4
- B) 5
- C) 6
- D) 8

Answer: A) 4

Explanation: Face center touches four around in face, but since center hollow, no internal, so 4.

Verbal Analogies (Questions 101-110)

These test relationships between word pairs.

101. **Candle is to Light as Stove is to:**

- A) Heat
- B) Food
- C) Metal
- D) Gas

Answer: A) Heat

Explanation: A candle produces light, just as a stove produces heat as its primary function.

102. **River is to Stream as Ocean is to:**

- A) Lake
- B) Pond
- C) Sea
- D) Creek

Answer: C) Sea

Explanation: A river is a larger body of flowing water than a stream; an ocean is a larger body of water than a sea.

103. **Clock is to Time as Thermometer is to:**

- A) Heat
- B) Temperature
- C) Weather
- D) Air

Answer: B) Temperature

Explanation: A clock measures time, just as a thermometer measures temperature.

104. **Hammer is to Nail as Screwdriver is to:**

- A) Bolt
- B) Screw
- C) Wood
- D) Wrench

Answer: B) Screw

Explanation: A hammer is used to drive a nail, just as a screwdriver is used to drive a screw.

105. **Big is to Small as Fast is to:**

- A) Quick
- B) Speedy
- C) Slow
- D) Rapid

Answer: C) Slow

Explanation: Big and small are opposites, just as fast and slow are opposites.

106. **Teacher is to Classroom as Chef is to:**

- A) Kitchen
- B) Table
- C) Plate
- D) Market

Answer: A) Kitchen

Explanation: A teacher works in a classroom, just as a chef works in a kitchen.

107. **Glove is to Hand as Shoe is to:**

- A) Foot
- B) Leg
- C) Arm
- D) Head

Answer: A) Foot

Explanation: A glove covers a hand, just as a shoe covers a foot.

108. **Map is to Geography as Calculator is to:**

- A) Science
- B) Mathematics
- C) History
- D) Art

Answer: B) Mathematics

Explanation: A map is a tool for geography, just as a calculator is a tool for mathematics.

109. **Rain is to Umbrella as Sun is to:**

- A) Hat
- B) Sunglasses
- C) Shirt
- D) Shoes

Answer: B) Sunglasses

Explanation: An umbrella protects against rain, just as sunglasses protect against sun.

110. **Star is to Sky as Fish is to:**

- A) Net
- B) Boat
- C) Water
- D) Hook

Answer: C) Water

Explanation: Stars are naturally found in the sky, just as fish are naturally found in water.

Arithmetic Reasoning (Questions 111-120)

These involve practical word problems.

111. A store offers a 20% discount on a \$50 jacket. What is the sale price?

- A) \$30
- B) \$40
- C) \$45
- D) \$48

Answer: B) \$40

Explanation: Discount = 20% of 50 = $0.20 \times 50 = 10$. Sale price = 50 - 10 = 40.

112. If a train travels 300 miles in 5 hours, how far in 2 hours?

- A) 100 miles
- B) 120 miles
- C) 150 miles
- D) 180 miles

Answer: B) 120 miles

Explanation: Speed = $300 \div 5 = 60$ mph. Distance in 2 hours = $60 \times 2 = 120$ miles.

113. A recipe needs 3 eggs for 12 muffins. How many eggs for 36 muffins?

- A) 6
- B) 9
- C) 12
- D) 15

Answer: B) 9

Explanation: Ratio of muffins = $36/12 = 3$. Eggs needed = $3 \times 3 = 9$.

114. A worker earns \$15/hour. How much for 25 hours?

- A) \$300
- B) \$350
- C) \$375
- D) \$400

Answer: C) \$375

Explanation: Total earnings = $15 \times 25 = 375$.

115. A tank leaks $1/6$ of its water daily. If it starts with 120 gallons, how much after 2 days?

- A) 80 gallons
- B) 83.33 gallons
- C) 100 gallons
- D) 108.33 gallons

Answer: B) 83.33 gallons

Explanation: Day 1: $120 - (120 \times 1/6) = 120 - 20 = 100$. Day 2: $100 - (100 \times 1/6) = 100 - 16.67 = 83.33$.

116. **If 4 books cost \$48, what is the cost of 7 books?**

- A) \$72
- B) \$78
- C) \$84
- D) \$90

Answer: C) \$84

Explanation: Cost per book = $48 \div 4 = 12$. For 7 books: $12 \times 7 = 84$.

117. **A plane flies 400 miles at 200 mph, then 600 miles at 300 mph. Total time?**

- A) 3 hours
- B) 4 hours
- C) 5 hours
- D) 6 hours

Answer: B) 4 hours

Explanation: Time for 400 miles = $400 \div 200 = 2$ hours. Time for 600 miles = $600 \div 300 = 2$ hours. Total = $2 + 2 = 4$ hours.

118. **A group of 5 friends split a \$60 bill. If one pays nothing, how much do the others pay each?**

- A) \$12
- B) \$15
- C) \$20
- D) \$30

Answer: B) \$15

Explanation: Four friends pay \$60, so each pays $60 \div 4 = 15$.

119. **A car uses 1 gallon of gas every 25 miles. How many gallons for 150 miles?**

- A) 4
- B) 5
- C) 6
- D) 7

Answer: C) 6

Explanation: Gallons = $150 \div 25 = 6$.

120. **If $2/3$ of a number is 24, what is the number?**

- A) 16
- B) 24
- C) 32
- D) 36

Answer: D) 36

Explanation: Let number = x . $2/3 x = 24$, so $x = 24 \times 3/2 = 36$.

Word Knowledge (Questions 121-130)

These test synonyms or definitions.

121. **Abate** most nearly means:

- A) Increase
- B) Decrease
- C) Stop
- D) Continue

Answer: B) Decrease

Explanation: Abate means to lessen or reduce in intensity.

122. **Candid** most nearly means:

- A) Deceptive
- B) Honest
- C) Shy
- D) Angry

Answer: B) Honest

Explanation: Candid means truthful and straightforward.

123. **Ephemeral** most nearly means:

- A) Permanent
- B) Temporary
- C) Eternal
- D) Solid

Answer: B) Temporary

Explanation: Ephemeral means lasting a short time.

124. **Fortitude** most nearly means:

- A) Weakness
- B) Strength
- C) Fear
- D) Doubt

Answer: B) Strength

Explanation: Fortitude refers to strength or courage in adversity.

125. **Inhibit** most nearly means:

- A) Encourage
- B) Restrain
- C) Allow
- D) Promote

Answer: B) Restrain

Explanation: Inhibit means to hinder or prevent.

126. **Lethargic** most nearly means:

- A) Energetic
- B) Sluggish
- C) Active
- D) Alert

Answer: B) Sluggish

Explanation: Lethargic means lacking energy or sluggish.

127. **Mitigate** most nearly means:

- A) Worsen
- B) Alleviate
- C) Ignore
- D) Create

Answer: B) Alleviate

Explanation: Mitigate means to make less severe or painful.

128. **Prudent** most nearly means:

- A) Careless
- B) Wise
- C) Reckless
- D) Bold

Answer: B) Wise

Explanation: Prudent means acting with care and thought for the future.

129. **Tenacious** most nearly means:

- A) Weak
- B) Persistent
- C) Flexible
- D) Fragile

Answer: B) Persistent

Explanation: Tenacious means holding fast or persistent.

130. **Vivid** most nearly means:

- A) Dull
- B) Bright
- C) Faint
- D) Quiet

Answer: B) Bright

Explanation: Vivid means strikingly bright or intense.

Math Knowledge (Questions 131-140)

These test mathematical concepts and equations.

131. **Solve for x: $4x - 8 = 12$.**

- A) 4
- B) 5
- C) 6
- D) 7

Answer: B) 5

Explanation: Add 8 to both sides: $4x = 20$. Divide by 4: $x = 5$.

132. **What is the perimeter of a rectangle with length 10 and width 6?**

- A) 16
- B) 28
- C) 32
- D) 60

Answer: C) 32

Explanation: Perimeter = $2(\text{length} + \text{width}) = 2(10 + 6) = 2 \times 16 = 32$.

133. **Simplify: $(x^2)^3$.**

- A) x^5
- B) x^6
- C) x^8
- D) x^9

Answer: B) x^6

Explanation: Power rule: $(x^a)^b = x^{ab}$. So, $(x^2)^3 = x^{2 \times 3} = x^6$.

134. **What is the area of a triangle with base 8 and height 5?**

- A) 20
- B) 30
- C) 40
- D) 48

Answer: A) 20

Explanation: Area = $1/2 \times \text{base} \times \text{height} = 1/2 \times 8 \times 5 = 20$.

135. **What is 3^4 ?**

- A) 12
- B) 27
- C) 64
- D) 81

Answer: D) 81

Explanation: $3^4 = 3 \times 3 \times 3 \times 3 = 81$.

136. **Convert 0.75 to a fraction.**

- A) $1/2$
- B) $3/4$

- C) 2/3
- D) 4/5

Answer: B) 3/4

Explanation: $0.75 = 75/100 = 3/4$ after simplifying by dividing by 25.

137. **Solve for x: $x/5 + 3 = 7$.**

- A) 10
- B) 15
- C) 20
- D) 25

Answer: C) 20

Explanation: Subtract 3: $x/5 = 4$. Multiply by 5: $x = 20$.

138. **What is the circumference of a circle with diameter 10? (Use $\pi \approx 3.14$)**

- A) 15.7
- B) 31.4
- C) 62.8
- D) 78.5

Answer: B) 31.4

Explanation: Circumference = $\pi \times \text{diameter} = 3.14 \times 10 = 31.4$.

139. **Factor: $x^2 + 5x + 6$.**

- A) $(x+2)(x+3)$
- B) $(x+1)(x+6)$
- C) $(x+2)(x+4)$
- D) $(x+3)(x+4)$

Answer: A) $(x+2)(x+3)$

Explanation: Find factors of 6 that add to 5: 2 and 3. So, $(x+2)(x+3)$.

140. **What is the slope of the line $y = 2x + 3$?**

- A) 1
- B) 2
- C) 3
- D) 4

Answer: B) 2

Explanation: In $y = mx + b$, m is the slope. Here, m = 2.

Reading Comprehension (Questions 141-150)

These involve short passages followed by questions.

141. **Passage: Coral reefs support marine biodiversity but are threatened by warming oceans.** What threatens coral reefs?

- A) Biodiversity

- B) Warming oceans
- C) Marine life
- D) Cold water

Answer: B) Warming oceans

Explanation: The passage explicitly states warming oceans as the threat.

142. **Passage: The Wright brothers achieved the first powered flight in 1903.** When was the first powered flight?**

- A) 1890
- B) 1903
- C) 1910
- D) 1920

Answer: B) 1903

Explanation: The passage directly states 1903.

143. **Passage: Photosynthesis converts sunlight into chemical energy for plants.** What does photosynthesis convert?**

- A) Water
- B) Sunlight
- C) Oxygen
- D) Carbon dioxide

Answer: B) Sunlight

Explanation: The passage says sunlight is converted into chemical energy.

144. **Passage: Recycling reduces waste and conserves natural resources.** What does recycling do?**

- A) Increases waste
- B) Reduces waste
- C) Creates resources
- D) Destroys resources

Answer: B) Reduces waste

Explanation: The passage states recycling reduces waste.

145. **Passage: The moon affects Earth's tides through gravitational pull.** What causes tides?**

- A) Sunlight
- B) Gravitational pull
- C) Wind
- D) Earth's rotation

Answer: B) Gravitational pull

Explanation: The passage specifies gravitational pull.

146. **Passage: Antibiotics treat bacterial infections but not viruses.** What do antibiotics treat?**

- A) Viruses
- B) Bacteria
- C) Fungi
- D) Parasites

Answer: B) Bacteria

Explanation: The passage states antibiotics treat bacterial infections.

147. **Passage: Urbanization leads to increased demand for housing and infrastructure.**

What does urbanization increase?**

- A) Rural areas
- B) Housing demand
- C) Farming
- D) Forests

Answer: B) Housing demand

Explanation: The passage mentions increased demand for housing.

148. **Passage: Wind turbines generate electricity from wind energy.** What do wind turbines generate?**

- A) Heat
- B) Electricity
- C) Water
- D) Fuel

Answer: B) Electricity

Explanation: The passage states wind turbines generate electricity.

149. **Passage: The human brain coordinates body functions and cognition.** What does the brain coordinate?**

- A) Only cognition
- B) Body functions and cognition
- C) Only body functions
- D) Blood flow

Answer: B) Body functions and cognition

Explanation: The passage lists both functions.

150. **Passage: Deforestation contributes to carbon dioxide buildup in the atmosphere.**

What does deforestation cause?**

- A) Oxygen increase
- B) Carbon dioxide buildup
- C) Water pollution
- D) Soil enrichment

Answer: B) Carbon dioxide buildup

Explanation: The passage specifies carbon dioxide buildup.

Situational Judgment (Questions 151-160)

These test decision-making in leadership scenarios.

151. A team member is unprepared for a briefing. Your action?

- A) Present for them
- B) Coach them to prepare quickly
- C) Cancel the briefing
- D) Criticize them publicly

Answer: B) Coach them to prepare quickly

Explanation: Coaching supports development and ensures the briefing occurs.

152. You receive conflicting orders from two superiors. What do you do?

- A) Follow the first order
- B) Seek clarification from both
- C) Ignore both
- D) Choose the easier order

Answer: B) Seek clarification from both

Explanation: Clarification ensures compliance with the correct authority.

153. A subordinate repeatedly arrives late. Your response?

- A) Ignore it
- B) Discuss privately and set expectations
- C) Dock their pay
- D) Publicly reprimand

Answer: B) Discuss privately and set expectations

Explanation: Private discussion addresses the issue professionally.

154. A project is behind schedule. Your action?

- A) Abandon it
- B) Reallocate resources and adjust timeline
- C) Blame the team
- D) Ignore the delay

Answer: B) Reallocate resources and adjust timeline

Explanation: Proactive management keeps the project on track.

155. You witness a safety violation. What do you do?

- A) Ignore it
- B) Correct it immediately
- C) Wait for someone else
- D) Report it later

Answer: B) Correct it immediately

Explanation: Immediate action prevents harm and ensures safety.

156. **A team member disagrees with your strategy. Response?**

- A) Ignore them
- B) Listen and consider their input
- C) Dismiss them
- D) Argue publicly

Answer: B) Listen and consider their input

Explanation: Valuing input fosters collaboration and better decisions.

157. **You're assigned an urgent task with limited time. Action?**

- A) Delegate everything
- B) Prioritize critical components
- C) Request more time
- D) Ignore the task

Answer: B) Prioritize critical components

Explanation: Prioritization ensures key objectives are met under constraints.

158. **A colleague takes credit for your work. What do you do?**

- A) Confront publicly
- B) Discuss privately with them
- C) Do nothing
- D) Take credit for theirs

Answer: B) Discuss privately with them

Explanation: Private discussion resolves the issue professionally.

159. **Team morale is low after a failure. Your action?**

- A) Ignore it
- B) Organize a team-building activity
- C) Criticize the team
- D) Assign more work

Answer: B) Organize a team-building activity

Explanation: Team-building boosts morale and cohesion.

160. **You're unsure about a procedure. What do you do?**

- A) Guess
- B) Consult a manual or superior
- C) Skip it
- D) Delegate it

Answer: B) Consult a manual or superior

Explanation: Consulting ensures accuracy and compliance.

General Science (Questions 161-170)

These test scientific knowledge.

161. **What is the primary source of Earth's energy?**

- A) Moon
- B) Sun
- C) Core
- D) Wind

Answer: B) Sun

Explanation: The sun provides solar energy for weather, plants, and more.

162. **What gas makes up most of Earth's atmosphere?**

- A) Oxygen
- B) Nitrogen
- C) Carbon dioxide
- D) Helium

Answer: B) Nitrogen

Explanation: Nitrogen comprises about 78% of the atmosphere.

163. **What is the freezing point of water in Fahrenheit?**

- A) 0
- B) 32
- C) 100
- D) 212

Answer: B) 32

Explanation: Water freezes at 32°F at standard pressure.

164. **What type of rock is formed from cooled lava?**

- A) Sedimentary
- B) Metamorphic
- C) Igneous
- D) Fossilized

Answer: C) Igneous

Explanation: Igneous rocks form from cooled magma or lava.

165. **What organ pumps blood in humans?**

- A) Liver
- B) Heart
- C) Lung
- D) Kidney

Answer: B) Heart

Explanation: The heart pumps blood throughout the body.

166. **What is the smallest unit of an element?**

- A) Molecule
- B) Atom
- C) Proton
- D) Electron

Answer: B) Atom

Explanation: An atom is the smallest unit retaining an element's properties.

167. **What causes earthquakes?**

- A) Volcanic eruptions
- B) Plate tectonics
- C) Storms
- D) Tides

Answer: B) Plate tectonics

Explanation: Movement of tectonic plates causes earthquakes.

168. **What is the main source of energy for Earth's climate system?**

- A) Geothermal
- B) Solar
- C) Wind
- D) Nuclear

Answer: B) Solar

Explanation: Solar energy drives weather and climate patterns.

169. **What gas is essential for human respiration?**

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

Answer: B) Oxygen

Explanation: Humans inhale oxygen for cellular respiration.

170. **What is the primary component of Earth's core?**

- A) Iron
- B) Carbon
- C) Silicon
- D) Aluminum

Answer: A) Iron

Explanation: Earth's core is primarily iron and nickel.

Aviation Information (Questions 171-180)

These test aviation principles.

171. **What does the airspeed indicator measure?**

- A) Altitude
- B) Speed through air
- C) Fuel flow
- D) Direction

Answer: B) Speed through air

Explanation: The airspeed indicator shows the aircraft's speed relative to the air.

172. **What is the primary control for pitch?**

- A) Ailerons
- B) Rudder
- C) Elevator
- D) Flaps

Answer: C) Elevator

Explanation: Elevators on the tail control pitch (nose up/down).

173. **What force opposes thrust in flight?**

- A) Lift
- B) Drag
- C) Gravity
- D) Torque

Answer: B) Drag

Explanation: Drag is the aerodynamic force opposing thrust.

174. **What is the purpose of flaps?**

- A) Increase speed
- B) Increase lift
- C) Control yaw
- D) Reduce weight

Answer: B) Increase lift

Explanation: Flaps increase lift and drag for takeoff and landing.

175. **What does ATC stand for?**

- A) Air Traffic Control
- B) Aircraft Technical Center
- C) Aviation Training Command
- D) Air Transport Carrier

Answer: A) Air Traffic Control

Explanation: ATC manages aircraft movements for safety.

176. **What is the angle of attack?**

- A) Angle between wing and horizon
- B) Angle between wing and airflow

- C) Angle of climb
- D) Angle of rudder

Answer: B) Angle between wing and airflow

Explanation: Angle of attack determines lift and stall potential.

177. What is a NOTAM?

- A) Navigation tool
- B) Notice to Airmen
- C) Noise tracking
- D) Night operation manual

Answer: B) Notice to Airmen

Explanation: NOTAMs provide critical flight information.

178. What gas powers most jet engines?

- A) Hydrogen
- B) Kerosene
- C) Nitrogen
- D) Helium

Answer: B) Kerosene

Explanation: Jet fuel, typically kerosene-based, powers jet engines.

179. What does the term “yaw” refer to?

- A) Up/down nose movement
- B) Left/right nose movement
- C) Wing tilt
- D) Speed change

Answer: B) Left/right nose movement

Explanation: Yaw is the side-to-side movement of the aircraft’s nose.

180. What is the purpose of the black box?

- A) Navigation
- B) Record flight data
- C) Control engines
- D) Communicate with ATC

Answer: B) Record flight data

Explanation: Black boxes (flight data and cockpit voice recorders) log data for investigations.

Instrument Comprehension (Questions 181-190)

These are text-based descriptions of instrument readings.

181. Horizon shows nose up 15 degrees, wings level, heading 090. What is the attitude?

- A) Climbing east

- B) Diving west
- C) Level east
- D) Climbing north

Answer: A) Climbing east

Explanation: Nose up indicates climbing, heading 090 is east, wings level means no bank.

182. **Airspeed is 200 knots, altimeter 10,000 ft, heading 180. Direction?**

- A) North
- B) East
- C) South
- D) West

Answer: C) South

Explanation: Heading 180 degrees is south.

183. **Turn coordinator shows left turn, ball to right. What?**

- A) Coordinated turn
- B) Slipping turn
- C) Skidding turn
- D) No turn

Answer: B) Slipping turn

Explanation: Ball to the right in a left turn indicates a slip (insufficient rudder).

184. **Vertical speed indicator shows -1000 fpm. What?**

- A) Climbing
- B) Descending
- C) Level
- D) Stalling

Answer: B) Descending

Explanation: Negative feet per minute indicates descent.

185. **Horizon shows right bank 20 degrees, nose down, heading 270. Attitude?**

- A) Diving right turn west
- B) Climbing left turn
- C) Level west
- D) Diving left turn

Answer: A) Diving right turn west

Explanation: Right bank, nose down, heading 270 (west).

186. **Compass shows 315 degrees. Direction?**

- A) Northeast
- B) Northwest
- C) Southeast
- D) Southwest

Answer: B) Northwest

Explanation: 315 degrees is northwest.

187. Attitude indicator shows nose level, left bank 30 degrees. Attitude?

- A) Level flight
- B) Left turn
- C) Right turn
- D) Climb

Answer: B) Left turn

Explanation: Left bank with nose level indicates a left turn.

188. Altimeter stuck at 5000 ft despite climbing. Likely cause?

- A) Low fuel
- B) Pitot tube blocked
- C) Static port blocked
- D) Engine failure

Answer: C) Static port blocked

Explanation: Altimeter relies on static pressure; a blockage causes incorrect readings.

189. Horizon shows inverted, heading 000. Attitude?

- A) Upside down north
- B) Level south
- C) Climbing north
- D) Diving south

Answer: A) Upside down north

Explanation: Inverted with heading 000 (north) means upside down heading north.

190. Turn coordinator shows no turn, ball centered. What?

- A) Straight flight
- B) Left turn
- C) Right turn
- D) Skidding

Answer: A) Straight flight

Explanation: No turn and ball centered indicates straight, level flight.

Block Counting (Questions 191-200)

These describe 3D block stacks; count blocks touching a given one.

191. In a 4x4x4 cube stack, how many blocks touch a corner block?

- A) 3
- B) 4
- C) 5
- D) 7

Answer: A) 3

Explanation: A corner block touches three adjacent blocks (one along each axis).

192. **In a 3x3x1 flat layer, how many blocks touch a corner block?**

- A) 1
- B) 2
- C) 3
- D) 4

Answer: B) 2

Explanation: In a 2D 3x3 layer, a corner touches two blocks (one horizontal, one vertical).

193. **Stack: bottom layer 4x4, middle 3x3, top 2x2. How many touch a center block in the middle layer?**

- A) 4
- B) 6
- C) 8
- D) 10

Answer: B) 6

Explanation: Middle layer center touches 4 in its layer, 1 above, 1 below (assuming centered).

194. **In a 2x3x2 stack, how many touch a corner block?**

- A) 2
- B) 3
- C) 4
- D) 5

Answer: B) 3

Explanation: Corner touches one along each dimension: 3 blocks.

195. **Stack: bottom 5x5, top 4x4. How many touch a corner of top layer?**

- A) 2
- B) 3
- C) 4
- D) 5

Answer: C) 4

Explanation: Top corner touches 2 in top layer, 1 below, 1 adjacent in bottom layer.

196. **In a 3x3x3 cube with one corner missing, how many touch the opposite corner?**

- A) 2
- B) 3
- C) 4
- D) 5

Answer: B) 3

Explanation: Opposite corner still touches 3 blocks, as missing corner doesn't affect it.

197. **Stack: 3 layers of 3x3. How many touch a face-center block (on outer face)?**

- A) 3
- B) 4
- C) 5
- D) 6

Answer: C) 5

Explanation: Face-center touches 4 in its layer, 1 above or below (not both, as it's outer).

198. **In a T-shaped stack: 3-block base, 3-block vertical stem. How many touch the top stem block?**

- A) 1
- B) 2
- C) 3
- D) 4

Answer: A) 1

Explanation: Top of stem touches only the block below it.

199. **In a 4x4x2 stack, how many touch an edge block in the top layer?**

- A) 3
- B) 4
- C) 5
- D) 6

Answer: C) 5

Explanation: Edge block touches 3 in top layer, 1 below, 1 adjacent in bottom layer.

200. **Stack: bottom 3x3, middle 2x2, top 1x1. How many touch the top block?**

- A) 1
- B) 2
- C) 3
- D) 4

Answer: A) 1

Explanation: Top block touches only the one below it if centered.