

VOLUME II

ZOOLOGY ELITE QUIZ

Volume II — Solved Answer Key

100 QUESTIONS

3 DIFFICULTY LEVELS

ANSWERS HIGHLIGHTED

Parasitology | Biochemistry | Biogeography | Animal Behavior | Paleozoology | Cetaceans | Evol. Biology | Marine Life

✓ Green row = Correct Answer

● Easy

● Medium

● Hard

EASY Questions 1 – 35

Q001

EASY

Entomology

What is the term for the scientific study of insects?

A Arachnology

B Entomology

C Parasitology

D Lepidopterology



Q002

EASY

Mammalogy

Which animal is the tallest living terrestrial animal?

A African Elephant

B Dromedary Camel

C Giraffe



D Ostrich

Q003

EASY

Ecology

What do you call an animal that eats dead organisms?

A Predator

B Parasite

C Scavenger



D Producer

Q004

EASY

Herpetology

Which reptile is known for changing its skin color?

A Gecko

B Chameleon



C Monitor Lizard

D Iguana

Q005

EASY

Ornithology

What is the largest species of penguin?

- A Little Blue Penguin
- B Chinstrap Penguin
- C Emperor Penguin**
- D Macaroni Penguin



Q006

EASY

Mammalogy

How do bats navigate in the dark?

- A Infrasound
- B Echolocation**
- C Magnetic sense
- D UV vision



Q007

EASY

Mammalogy

What is a baby kangaroo called?

- A Cub
- B Kitten
- C Joey**
- D Pup



Q008

EASY

Herpetology

Which sense organ do snakes use to detect heat from prey?

A Eyes

B Pit organs



C Nostrils

D Tongue alone

Q009

EASY

Ichthyology

What type of animal is a seahorse?

A Crustacean

B Mollusc

C Fish



D Amphibian

Q010

EASY

Ornithology

Which is the only bird that can fly backwards?

A Swift

B Hummingbird



C Kingfisher

D Swallow

Q011

EASY

Zoology

What is the hard outer covering of a mollusk called?

A Cuticle

B Carapace

C Shell



D Exoskeleton

Q012

EASY

Mammalogy

Which animal has the longest tongue relative to its body?

A Giraffe

B Chameleon

C Giant Anteater



D Frog

Q013

EASY

Mammalogy

What is the primary diet of a koala?

A Bamboo

B Eucalyptus leaves



C Grass

D Fruit

Q014

EASY

Entomology

How many eyes does a typical spider have?

A 2

B 4

C 8

D 6



Q015

EASY

Parasitology

What is the study of parasites called?

A Virology

B Mycology

C Parasitology

D Bacteriology



Q016

EASY

Mammalogy

Which mammal has the longest migration route?

A Humpback Whale

B Arctic Tern (bird)

C Elephant Seal

D Gray Whale



Q017

EASY

Ichthyology

What do electric eels use their electrical charge primarily for?

- A Warming the water
- B Navigation only
- C Hunting and defense** ✓
- D Reproduction

Q018

EASY

Paleozoology

Which group of animals are dinosaurs most closely related to?

- A Lizards
- B Crocodylians** ✓
- C Snakes
- D Turtles

Q019

EASY

Herpetology

What is the largest living species of lizard?

- A Nile Monitor
- B Komodo Dragon** ✓
- C Saltwater Crocodile
- D Iguana

Q020

EASY

Mammalogy

What is a group of wolves called?

- A Herd
- B Pride
- C Pack**
- D Colony



Q021

EASY

Marine Life

Which animal produces pearls inside its body?

- A Coral
- B Oyster**
- C Sea urchin
- D Starfish



Q022

EASY

Parasitology

What is the name for the outer protein coat of a virus?

- A Cell wall
- B Capsid**
- C Membrane
- D Envelope



Q023

EASY

Mammalogy

What is the gestation period of a domestic dog approximately?

A 2 months ✓

B 4 months

C 6 months

D 9 months

Q024

EASY

Mammalogy

Which animal is known as the 'ship of the desert'?

A Horse

B Donkey

C Camel ✓

D Elephant

Q025

EASY

Ichthyology

What do catfish use to detect food in murky water?

A Eyes

B Echolocation

C Barbels (sensory whiskers) ✓

D Electrical fields

Q026

EASY

Ornithology

Which type of feathers provide insulation in birds?

- A Contour feathers
- B Flight feathers
- C Down feathers**
- D Tail feathers



Q027

EASY

Ecology

What does a herbivore's digestive system specialize in breaking down?

- A Proteins from meat
- B Cellulose from plant matter**
- C Fats from seeds
- D Minerals from bones



Q028

EASY

Marine Life

Which ocean zone receives no sunlight at all?

- A Euphotic zone
- B Mesopelagic zone
- C Hadal zone**
- D Bathypelagic zone



Q029

EASY

Zoology

What is the correct term for animals that walk on two legs?

- A Quadruped
- B Hexapod
- C Biped**
- D Arthropod



Q030

EASY

Entomology

Which beetle is sacred in ancient Egyptian culture?

- A Firefly
- B Ladybug
- C Scarab beetle**
- D Stag beetle



Q031

EASY

Mammalogy

What is the world's smallest mammal by body size?

- A Pygmy shrew
- B Bumblebee bat**
- C Etruscan shrew
- D Pygmy mouse



Q032

EASY

Ornithology

Which birds are known to mate for life in most species?

A Sparrows

B Albatrosses ✓

C Pigeons

D Starlings

Q033

EASY

Marine Life

What is the name of the region where the ocean meets the land?

A Pelagic zone

B Littoral zone ✓

C Abyssal zone

D Epipelagic zone

Q034

EASY

Entomology

What is a group of ants called?

A Swarm

B Nest (colony) ✓

C Hive

D Pack

Q035

EASY

Mammalogy

Which animal is the closest living relative to humans?

A Gorilla

B Orangutan

C Chimpanzee

D Bonobo

**MEDIUM**

Questions 36 – 70

Q036

MEDIUM

Physiology

Which neurotransmitter is primarily responsible for the 'fight or flight' response?

A Serotonin

B Dopamine

C Norepinephrine (Noradrenaline)

D GABA



Q037

MEDIUM

Ecology

What is 'aposematism' in animals?

A Camouflage to blend in

B Warning coloration to deter predators

C Mimicking another species' appearance

D Seasonal color change



Q038

MEDIUM

Mammalogy

The platypus is unusual among mammals because it:

- A Has no fur
- B Is venomous and lays eggs** ✓
- C Gives birth to live young only
- D Has no teeth as an adult

Q039

MEDIUM

Animal Behavior

What is 'philopatry' in animal behavior?

- A Migration to new territories
- B Returning to the same location to breed** ✓
- C Territorial aggression
- D Parental abandonment

Q040

MEDIUM

Physiology

Which hormone triggers the 'let-down' reflex for milk production in mammals?

- A Prolactin
- B Estrogen
- C Oxytocin** ✓
- D Progesterone

Q041 MEDIUM Animal Behavior

What is the study of animal behavior in natural environments called?

- A Psychology
- B Ethology** ✓
- C Sociology
- D Ecology

Q042 MEDIUM Ichthyology

Which gas do most deep-sea fish use to regulate buoyancy in their swim bladder?

- A Nitrogen
- B Helium
- C Oxygen** ✓
- D Carbon Dioxide

Q043 MEDIUM Biogeography

What is Wallace's Line?

- A A depth boundary in oceans
- B A biogeographical boundary between Asian and Australian fauna** ✓
- C A migration route for birds
- D The boundary between coral reef zones

Q044

MEDIUM

Physiology

Which part of the neuron transmits signals to other cells?

A Dendrites

B Cell body (soma)

C Axon terminal



D Myelin sheath

Q045

MEDIUM

Parasitology

In which type of animal symbiosis does one species harm its host while benefiting itself?

A Mutualism

B Commensalism

C Parasitism



D Amensalism

Q046

MEDIUM

Ecology

What is the 'trophic cascade' effect in ecology?

A Energy loss at each trophic level

B Indirect effects when apex predators regulate lower trophic levels



C Migration of top predators

D Seasonal shifts in food webs

Q047

MEDIUM

Ornithology

Which structure anchors a bird's flight feathers to the wing?

- A Calamus (quill)** ✓
- B Rachis
- C Barb
- D Barbule

Q048

MEDIUM

Animal Behavior

What is 'imprinting' in animal development?

- A A genetic mutation process
- B Rapid learning during a critical sensitive period** ✓
- C Territorial marking
- D Camouflage behavior

Q049

MEDIUM

Entomology

Which protein gives insect wings and crustacean shells their hardness?

- A Keratin
- B Fibrin
- C Sclerotin (tanned chitin)** ✓
- D Collagen

Q050 **MEDIUM** Entomology**What is the function of the Malpighian tubules in insects?**

- A Digestion
- B Gas exchange
- C Excretion and osmoregulation** ✓
- D Reproduction

Q051 **MEDIUM** Mammalogy**Which dolphin species is found exclusively in the Amazon River?**

- A Irrawaddy dolphin
- B Boto (Amazon river dolphin)** ✓
- C Ganges river dolphin
- D Indus river dolphin

Q052 **MEDIUM** Ecology**What is 'altruistic behavior' in evolutionary biology?**

- A Selfishly hoarding resources
- B An action that benefits others at a cost to oneself** ✓
- C Competition for mates
- D Territorial aggression

Q053

MEDIUM

Physiology

Which blood component is responsible for producing antibodies?

A Red blood cells

B Platelets

C B lymphocytes (B cells)



D Neutrophils

Q054

MEDIUM

Physiology

What is the primary pigment responsible for skin color in mammals?

A Hemoglobin

B Carotene

C Melanin



D Bilirubin

Q055

MEDIUM

Ichthyology

Which unique feature do lampreys lack that most fish possess?

A Scales

B Gills

C Jaws



D Fins

Q056

MEDIUM

Evol. Biology

What is 'convergent evolution'?

- A Evolution of homologous structures
- B Unrelated species independently evolving similar traits** ✓
- C A species splitting into two
- D Organisms becoming more complex over time

Q057

MEDIUM

Physiology

Which hormone is produced by the pineal gland and regulates sleep cycles?

- A Cortisol
- B Thyroxine
- C Melatonin** ✓
- D Aldosterone

Q058

MEDIUM

Animal Behavior

What is 'polyandry' in animal mating systems?

- A One male, multiple females
- B One female, multiple males** ✓
- C Monogamous pairing
- D No pair bonds

Q059 **MEDIUM** Physiology**Which animal has the highest blood pressure among all animals?**

- A Blue Whale
- B African Elephant
- C Giraffe** ✓
- D Horse

Q060 **MEDIUM** Zoology**What is the function of the nictitating membrane in animals?**

- A Produce tears
- B A third transparent eyelid for eye protection** ✓
- C Filter sound
- D Detect UV light

Q061 **MEDIUM** Ecology**Which phenomenon describes animals gathering in enormous groups for protection?**

- A Niche partitioning
- B Dilution effect** ✓
- C Character displacement
- D Resource partitioning

Q062 **MEDIUM** Ornithology

In bird migration, what is the primary cue used for navigation during the day?

- A Magnetic fields
- B Star patterns
- C Sun position (sun compass)** ✓
- D Wind direction

Q063 **MEDIUM** Herpetology

What is the process by which amphibians exchange gases directly through their skin?

- A Pulmonary respiration
- B Branchial respiration
- C Cutaneous respiration** ✓
- D Buccal respiration

Q064 **MEDIUM** Entomology

Which insect order includes butterflies and moths?

- A Diptera
- B Coleoptera
- C Lepidoptera** ✓
- D Hymenoptera

Q065

MEDIUM

Herpetology

What is the Jacobson's organ (vomeronasal organ) used for in snakes?

- A Hearing
- B Detecting infrared radiation
- C Chemosensory detection of scents** ✓
- D Balance

Q066

MEDIUM

Ecology

Which ecological concept describes the role and position of a species within its ecosystem?

- A Biome
- B Habitat
- C Ecological niche** ✓
- D Food web

Q067

MEDIUM

Physiology

What term describes the ability of an organism to regulate its internal environment?

- A Adaptation
- B Homeostasis** ✓
- C Acclimatization
- D Thermoregulation

Q068

MEDIUM

Ecology

Which is the correct sequence of a food chain?

- A Consumer to Producer to Decomposer
- B Producer to Primary consumer to Secondary consumer** ✓
- C Decomposer to Producer to Consumer
- D Secondary consumer to Primary consumer to Producer

Q069

MEDIUM

Ornithology

What is the unique respiratory structure found in birds that allows continuous airflow through lungs?

- A Alveoli
- B Bronchioles
- C Air sacs (parabronchi system)** ✓
- D Diaphragm

Q070

MEDIUM

Physiology

Which molecule serves as the universal energy currency in animal cells?

- A ADP
- B NADH
- C ATP** ✓
- D Glucose

HARD Questions 71 – 100

Q071

HARD

Paleozoology

What is the Cambrian Explosion and its significance in zoology?

- A A volcanic event that caused mass extinction
- B A rapid diversification of animal body plans ~541 million years ago** ✓
- C The evolution of vertebrates from fish
- D The spread of mammals after dinosaur extinction

Q072

HARD

Cell Biology

Which protein complex forms the nuclear pore and controls transport between nucleus and cytoplasm?

- A Proteasome
- B Nucleoporin complex (NPC)** ✓
- C Spliceosome
- D Ribosome

Q073

HARD

Evol. Biology

What is 'inclusive fitness' in sociobiological theory?

- A An organism's personal reproductive success only
- B Direct fitness plus indirect fitness gained through helping relatives** ✓
- C Fitness gained through predator avoidance
- D Maximum body size for survival

Q074

HARD

Evol. Biology

The 'Red Queen Hypothesis' in evolutionary biology proposes that:

- A** Organisms must continuously evolve to survive against co-evolving parasites and competitors ✓
- B Species become extinct if they evolve too fast
- C Evolution has a fixed rate across lineages
- D Sexual reproduction is less efficient than asexual reproduction

Q075

HARD

Physiology

Which structure in the mammalian inner ear is responsible for detecting linear acceleration and gravity?

- A Cochlea
- B Semicircular canals
- C Otolith organs (utricle and saccule)** ✓
- D Tympanic membrane

Q076

HARD

Zoology

What mechanism allows tardigrades to survive extreme environments including vacuum of space?

- A Antifreeze proteins only
- B Cryptobiosis - entering a state of near-zero metabolism** ✓
- C Enhanced DNA repair only
- D Thick cuticle protection alone

Q077

HARD

Cell Biology

Which enzyme catalyzes the attachment of amino acids to tRNA molecules?

A RNA Polymerase

B Aminoacyl-tRNA synthetase ✓

C Peptidyl transferase

D Ribonuclease

Q078

HARD

Parasitology

In the context of parasite-host coevolution, the 'geographic mosaic theory' was developed by:

A Charles Darwin

B W.D. Hamilton

C John Thompson ✓

D Richard Dawkins

Q079

HARD

Physiology

What is 'synaptic plasticity' in neuroscience?

A The ability of neurons to physically move

B The ability of synapses to strengthen or weaken over time, underlying learning and memory ✓

C The insulation of axons by myelin

D The reuptake of neurotransmitters

Q080

HARD

Physiology

The Krebs cycle (citric acid cycle) occurs in which part of the cell?

- A Cytoplasm
- B Nucleus
- C Mitochondrial matrix** ✓
- D Endoplasmic reticulum

Q081

HARD

Evol. Biology

Which type of natural selection favors individuals at both extremes of the phenotypic range?

- A Directional selection
- B Stabilizing selection
- C Disruptive (diversifying) selection** ✓
- D Sexual selection

Q082

HARD

Animal Behavior

What is the 'handicap principle' in sexual selection theory?

- A Females choose weaker males
- B Costly, honest signals (like large antlers) reliably indicate genetic quality** ✓
- C Selection against extravagant traits
- D Camouflage reducing mate attraction

Q083

HARD

Genetics

Hox genes are significant in animal development because they:

- A Control metabolic rate
- B Encode structural proteins for bones
- C Regulate the body plan and segment identity along the anterior-posterior axis ✓**
- D Determine eye color only

Q084

HARD

Parasitology

Which protozoan parasite causes African sleeping sickness?

- A Plasmodium falciparum
- B Trypanosoma brucei ✓**
- C Leishmania donovani
- D Toxoplasma gondii

Q085

HARD

Evol. Biology

What is the 'neutral theory of molecular evolution' proposed by Motoo Kimura?

- A All mutations are beneficial
- B Most molecular evolution is driven by genetic drift of neutral mutations, not natural selection ✓**
- C Only deleterious mutations accumulate
- D Sexual selection drives all molecular change

Q086

HARD

Physiology

Which receptor type detects mechanical deformation in skin (touch, pressure)?

- A Nociceptors
- B Thermoreceptors
- C Mechanoreceptors (e.g., Meissner's corpuscles)** ✓
- D Photoreceptors

Q087

HARD

Ichthyology

In fish physiology, what is 'osmoconforming'?

- A Actively maintaining internal ion concentration different from environment
- B Allowing internal ion concentration to match the surrounding environment** ✓
- C Excreting excess salt through gills
- D Absorbing water through skin

Q088

HARD

Zoology

What distinguishes the 'diploblastic' body plan from 'triploblastic' animals?

- A Diploblastic have three germ layers; triploblastic have two
- B Diploblastic have only two germ layers (ectoderm and endoderm); triploblastic have three** ✓
- C Diploblastic are all aquatic
- D Diploblastic have true coeloms

Q089

HARD

Genetics

Which phenomenon in population genetics describes the random change in allele frequency in small populations?

A Gene flow

B Natural selection

C Genetic drift



D Mutation pressure

Q090

HARD

Genetics

The enzyme telomerase adds telomeric sequences to chromosomes. Why is this significant in animal aging?

A It prevents DNA methylation

B Without it, chromosomes shorten with each division, contributing to cellular aging



C It repairs DNA damage from UV

D It promotes gene expression

Q091

HARD

Evol. Biology

What is 'reciprocal altruism' as proposed by Robert Trivers?

A Helping kin regardless of cost

B Altruistic behavior toward non-relatives with the expectation of future return



C Selfishness disguised as cooperation

D Parental investment in offspring

Q092

HARD

Physiology

Which photoreceptor cells are responsible for color vision in vertebrate eyes?

- A Rods
- B Bipolar cells
- C Cones** ✓
- D Ganglion cells

Q093

HARD

Physiology

What is the primary molecular difference between Type I and Type II diabetes mellitus?

- A Type I involves insulin resistance; Type II involves autoimmune destruction of beta cells
- B Type I is autoimmune destruction of pancreatic beta cells; Type II is insulin resistance in target tissues** ✓
- C Both involve identical mechanisms
- D Type II involves no insulin production

Q094

HARD

Physiology

Which unique circulatory adaptation prevents brain damage from rapid head movements in giraffes?

- A Extra-thick arterial walls only
- B A rete mirabile (wonder net) - a network of blood vessels at the base of the brain** ✓
- C Extremely low blood pressure to the head
- D Absence of blood-brain barrier

Q095

HARD

Ecology

In the coevolution of flowers and pollinators, what principle describes extremely tight species-specific relationships?

- A Character displacement
- B Ecological fitting
- C Coevolutionary specificity / Lock-and-key coevolution** ✓
- D Competitive exclusion

Q096

HARD

Marine Life

What is the function of chromatophores in cephalopods like octopuses?

- A Photosynthesis
- B Cells containing pigment sacs that rapidly change color for camouflage and communication** ✓
- C Producing ink
- D Detecting light

Q097

HARD

Ornithology

Which molecular mechanism allows migratory birds to sense the Earth's magnetic field?

- A Iron crystals in the beak alone
- B Cryptochrome proteins in the retina that form radical pairs sensitive to magnetic fields** ✓
- C Magnetite in the inner ear only
- D Specialized skin receptors

Q098

HARD

Evol. Biology

What is 'phenotypic plasticity' in zoology?

- A Genetic variation between individuals
- B The ability of one genotype to produce different phenotypes in response to environmental conditions** ✓
- C Mutation-induced physical changes
- D Epigenetic changes passed to offspring only

Q099

HARD

Cell Biology

Which protein family forms gap junctions between animal cells, allowing direct cytoplasmic communication?

- A Cadherins
- B Integrins
- C Connexins** ✓
- D Claudins

Q100

HARD

Evol. Biology

What is the 'species selection' hypothesis in macroevolution?

- A Individual organisms within a species are selected
- B Species as units undergo differential speciation and extinction rates, driving large-scale evolutionary trends** ✓
- C All species evolve at identical rates
- D Only sexual species can undergo selection

Answer Summary

All 100 correct answers — quick reference

Q001 B. Entomology	Q002 C. Giraffe	Q003 C. Scavenger	Q004 B. Chameleon
Q005 C. Emperor Penguin	Q006 B. Echolocation	Q007 C. Joey	Q008 B. Pit organs
Q009 C. Fish	Q010 B. Hummingbird	Q011 C. Shell	Q012 C. Giant Anteater
Q013 B. Eucalyptus leaves	Q014 C. 8	Q015 C. Parasitology	Q016 D. Gray Whale
Q017 C. Hunting and defense	Q018 B. Crocodylians	Q019 B. Komodo Dragon	Q020 C. Pack
Q021 B. Oyster	Q022 B. Capsid	Q023 A. 2 months	Q024 C. Camel
Q025 C. Barbels (sensory whiskers)	Q026 C. Down feathers	Q027 B. Cellulose from plant matter	Q028 C. Hadal zone
Q029 C. Biped	Q030 C. Scarab beetle	Q031 B. Bumblebee bat	Q032 B. Albatrosses
Q033 B. Littoral zone	Q034 B. Nest (colony)	Q035 C. Chimpanzee	Q036 C. Norepinephrine (Noradrenali...
Q037 B. Warning coloration to deter...	Q038 B. Is venomous and lays eggs	Q039 B. Returning to the same locat...	Q040 C. Oxytocin
Q041 B. Ethology	Q042 C. Oxygen	Q043 B. A biogeographical boundary ...	Q044 C. Axon terminal
Q045 C. Parasitism	Q046 B. Indirect effects when apex ...	Q047 A. Calamus (quill)	Q048 B. Rapid learning during a cri...
Q049 C. Sclerotin (tanned chitin)	Q050 C. Excretion and osmoregulation	Q051 B. Boto (Amazon river dolphin)	Q052 B. An action that benefits oth...
Q053 C. B lymphocytes (B cells)	Q054 C. Melanin	Q055 C. Jaws	Q056 B. Unrelated species independe...
Q057 C. Melatonin	Q058 B. One female, multiple males	Q059 C. Giraffe	Q060 B. A third transparent eyelid ...
Q061 B. Dilution effect	Q062 C. Sun position (sun compass)	Q063 C. Cutaneous respiration	Q064 C. Lepidoptera
Q065 C. Chemosensory detection of s...	Q066 C. Ecological niche	Q067 B. Homeostasis	Q068 B. Producer to Primary consume...
Q069 C. Air sacs (parabronchi syste...	Q070 C. ATP	Q071 B. A rapid diversification of ...	Q072 B. Nucleoporin complex (NPC)
Q073 B. Direct fitness plus indirec...	Q074 A. Organisms must continuously...	Q075 C. Otolith organs (utricle and...	Q076 B. Cryptobiosis - entering a s...
Q077 B. Aminoacyl-tRNA synthetase	Q078 C. John Thompson	Q079 B. The ability of synapses to ...	Q080 C. Mitochondrial matrix
Q081 C. Disruptive (diversifying) s...	Q082 B. Costly, honest signals (lik...	Q083 C. Regulate the body plan and ...	Q084 B. Trypanosoma brucei
Q085 B. Most molecular evolution is...	Q086 C. Mechanoreceptors (e.g., Mei...	Q087 B. Allowing internal ion conce...	Q088 B. Diploblastic have only two ...

Q089 C. Genetic drift	Q090 B. Without it, chromosomes sho...	Q091 B. Altruistic behavior toward ...	Q092 C. Cones
Q093 B. Type I is autoimmune destru...	Q094 B. A rete mirabile (wonder net...	Q095 C. Coevolutionary specificity ...	Q096 B. Cells containing pigment sa...
Q097 B. Cryptochrome proteins in th...	Q098 B. The ability of one genotype...	Q099 C. Connexins	Q100 B. Species as units undergo di...

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