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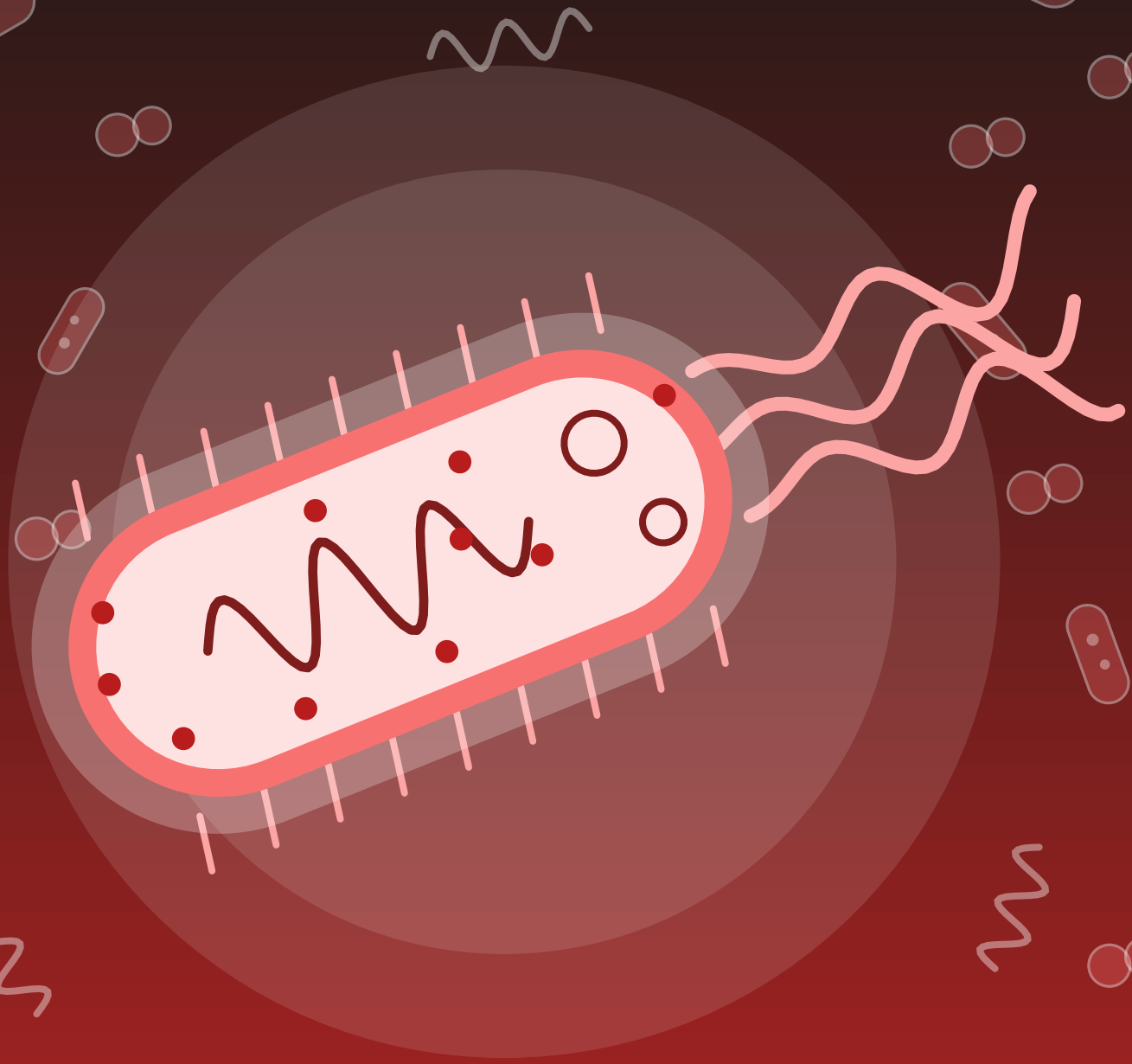

KINGDOM MONERA

50 Solved Biology MCQs

Ticked • Highlighted • Fully Explained

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Contents & How to Use

Each question shows four options. The **correct answer is highlighted in green with a tick**, followed by a short explanation. Tap any item below to jump straight to it.

Section 1: Monera Basics	**Q1–10**
Section 2: Bacterial Structure	**Q11–20**
Section 3: Shapes & Classification	**Q21–30**
Section 4: Nutrition & Reproduction	**Q31–40**
Section 5: Importance & Diseases	**Q41–50**

Quick Answer Key → (last page before the end)

Did you know? Try covering the options first, answer from memory, then check the tick!

Section 1: Monera Basics

Questions 1 – 10

Q1 **Kingdom Monera consists of:**

- ○ A. Eukaryotic organisms
- ○ B. Multicellular plants
- ○ C. Acellular particles
- ✔ **D. Prokaryotic organisms**

✔ **Answer: D**
Explanation: Monera includes bacteria and related organisms without a true nucleus.

Q2 **Monerans lack a:**

- ○ A. Cell membrane
- ○ B. Ribosome
- ✔ **C. Membrane-bound nucleus**
- ○ D. Cytoplasm

✔ **Answer: C**
Explanation: Their DNA lies freely in a region called the nucleoid.

Q3 **The Five Kingdom system, which placed all prokaryotes in Monera, was proposed by:**

- ○ A. Carl Woese
- ✔ **B. R. H. Whittaker**
- ○ C. Ernst Haeckel
- ○ D. Louis Pasteur

✔ **Answer: B**
Explanation: Whittaker proposed it in 1969.

Q4 **Who first saw bacteria under a microscope?**

- ○ A. Robert Koch
- ✔ **B. Antonie van Leeuwenhoek**
- ○ C. Louis Pasteur
- ○ D. Joseph Lister

✔ **Answer: B**
Explanation: He observed them in the 1670s and called them animalcules.

Q5	The father of modern bacteriology is:
✔	**A. Robert Koch**
○	B. Edward Jenner
○	C. Alexander Fleming
○	D. Gregor Mendel

✔ **Answer: A**
Explanation: Koch identified the causes of tuberculosis and cholera and introduced pure cultures.

Q6	Bacteria are:
○	A. Found only in soil
○	B. Always harmful
○	C. Visible to the naked eye
✔	**D. The most abundant organisms on Earth**

✔ **Answer: D**
Explanation: They live in soil, water, air and inside living bodies.

Q7 **Bacterial ribosomes are of the:**

- ○ A. 80S type
- ○ B. 60S type
- ✔ **C. 70S type**
- ○ D. 40S type

✔ **Answer: C**
Explanation: They are smaller than the 80S ribosomes of eukaryotes.

Q8 **The genetic material of a typical bacterium is:**

- ○ A. Linear DNA inside a nucleus
- ○ B. RNA only
- ✔ **C. A single circular DNA molecule**
- ○ D. Several linear chromosomes

✔ **Answer: C**
Explanation: It lies in the nucleoid, often with extra plasmids.

Q9 **Which of these is absent in bacteria?**

- ○ A. Ribosomes
- ✔ **B. Mitochondria**
- ○ C. Plasma membrane
- ○ D. DNA

✔ **Answer: B**
Explanation: Bacteria respire using enzymes on their plasma membrane.

Q10 **Kingdom Monera includes:**

- ✔ **A. Bacteria, cyanobacteria and archaebacteria**
- ○ B. Algae and fungi
- ○ C. Protozoa and slime moulds
- ○ D. Viruses and viroids

✔ **Answer: A**
Explanation: All are prokaryotes, including mycoplasma.

Did you know? Bacteria have existed for over 3.5 billion years, making them some of the oldest life forms on Earth.

Section 2: Bacterial Structure

Questions 11 – 20

Q11 **The bacterial cell wall is made of:**

- ○ A. Cellulose
- ○ B. Chitin
- ○ C. Lignin
- ✔ **D. Peptidoglycan**

✔ **Answer: D**
Explanation: It is a mesh of sugars and amino acids.

Q12 **The sticky layer outside the cell wall of some bacteria is the:**

- ○ A. Flagellum
- ○ B. Pilus
- ○ C. Nucleoid
- ✔ **D. Capsule**

✔ **Answer: D**
Explanation: It protects against drying and attack by white blood cells.

Q13 **The region that contains bacterial DNA is the:**

- ○ A. Nucleolus
- ○ B. Nucleus
- ✔ **C. Nucleoid**
- ○ D. Vacuole

✔ **Answer: C**
Explanation: It has no surrounding membrane.

Q14 **Small circular extra DNA in bacteria is the:**

- ○ A. Nucleoid
- ✔ **B. Plasmid**
- ○ C. Chromatin
- ○ D. Ribosome

✔ **Answer: B**
Explanation: Plasmids often carry genes for antibiotic resistance.

Q15	Bacteria usually move by:
✔	**A. Flagella**
○	B. Cilia
○	C. Pseudopodia
○	D. Muscles

✔ **Answer: A**
Explanation: Rotating flagella propel the cell.

Q16	Hair-like structures used for attachment and conjugation are:
✔	**A. Pili (fimbriae)**
○	B. Flagella
○	C. Capsules
○	D. Plasmids

✔ **Answer: A**
Explanation: Sex pili join mating cells during conjugation.

Q17 **Mesosomes in bacteria are:**

- ○ A. Clusters of ribosomes
- ○ B. Storage granules
- ○ C. Layers of the cell wall
- ✔ **D. Infoldings of the plasma membrane**

✔ **Answer: D**
Explanation: They are thought to help in respiration and cell division.

Q18 **Bacteria store reserve food as:**

- ○ A. Starch in chloroplasts
- ○ B. Paramylon
- ✔ **C. Glycogen and lipid granules**
- ○ D. Chitin

✔ **Answer: C**
Explanation: Some also store volutin granules.

Q19 **Gram-positive bacteria have a:**

- ○ A. Thin layer with an outer membrane
- ✔ **B. Thick peptidoglycan layer**
- ○ C. No cell wall
- ○ D. Cellulose wall

✔ **Answer: B**
Explanation: They retain crystal violet and appear purple.

Q20 **Gram-negative bacteria appear:**

- ○ A. Purple
- ✔ **B. Pink or red after staining**
- ○ C. Green
- ○ D. Colourless always

✔ **Answer: B**
Explanation: Their thin wall with an outer membrane loses the violet stain.

Did you know? Your body contains roughly as many bacterial cells as human cells!

Section 3: Shapes & Classification

Questions 21 – 30

Q21 **Spherical bacteria are called:**

- ✔ **A. Cocci**
- ○ B. Bacilli
- ○ C. Spirilla
- ○ D. Vibrios

✔ **Answer: A**
Explanation: An example is Staphylococcus.

Q22 **Rod-shaped bacteria are called:**

- ○ A. Cocci
- ○ B. Spirilla
- ○ C. Vibrios
- ✔ **D. Bacilli**

✔ **Answer: D**
Explanation: Examples are Bacillus and E. coli.

Q23 **Comma-shaped bacteria are called:**

- ○ A. Cocci
- ○ B. Bacilli
- ✔ **C. Vibrios**
- ○ D. Spirilla

✔ **Answer: C**
Explanation: Vibrio cholerae causes cholera.

Q24 **Spiral-shaped bacteria are called:**

- ○ A. Cocci
- ○ B. Bacilli
- ✔ **C. Spirilla**
- ○ D. Vibrios

✔ **Answer: C**
Explanation: An example is Spirillum.

Q25	**Bacteria living in extreme habitats such as hot springs and salt lakes are:**
○	A. Cyanobacteria
✔	**B. Archaebacteria**
○	C. Mycoplasma
○	D. Actinomycetes

✔ **Answer: B**
Explanation: They include halophiles, thermoacidophiles and methanogens.

Q26	**Methanogens are commonly found in:**
✔	**A. Guts of ruminants and marshes**
○	B. Salt pans
○	C. Hot springs only
○	D. Ocean surface

✔ **Answer: A**
Explanation: They produce methane, as in biogas from dung.

Q27 **Cyanobacteria are also called:**

- ○ A. Brown algae
- ○ B. Red algae
- ○ C. Golden algae
- ✔ **D. Blue-green algae**

✔ **Answer: D**
Explanation: They carry out photosynthesis and release oxygen.

Q28 **Nitrogen-fixing heterocysts are found in:**

- ○ A. Spirulina
- ○ B. Escherichia
- ○ C. Bacillus
- ✔ **D. Nostoc**

✔ **Answer: D**
Explanation: Heterocysts are thick-walled cells where nitrogen is fixed.

Q29 **The smallest living cells, lacking a cell wall, are:**

- ○ A. Cyanobacteria
- ○ B. Bacillus
- ✔ **C. Mycoplasma**
- ○ D. Archaebacteria

✔ **Answer: C**
Explanation: They are also called PPLO and can survive without oxygen.

Q30 **Bacteria that require oxygen to live are:**

- ○ A. Obligate anaerobes
- ✔ **B. Obligate aerobes**
- ○ C. Facultative anaerobes
- ○ D. Methanogens

✔ **Answer: B**
Explanation: They use oxygen for aerobic respiration.

Did you know? Cyanobacteria filled the early atmosphere with oxygen, changing the course of life on Earth.

Section 4: Nutrition & Reproduction

Questions 31 – 40

Q31 **Most bacteria reproduce by:**

- ✔ **A. Binary fission**
- ○ B. Budding
- ○ C. Spore formation only
- ○ D. Fragmentation

✔ **Answer: A**
Explanation: One cell divides into two identical cells.

Q32 **Transfer of DNA between bacteria through a pilus is:**

- ✔ **A. Conjugation**
- ○ B. Transformation
- ○ C. Transduction
- ○ D. Binary fission

✔ **Answer: A**
Explanation: A donor cell passes a plasmid to a recipient cell.

Q33 **Uptake of naked DNA from the surroundings is:**

- ○ A. Conjugation
- ○ B. Transduction
- ○ C. Mutation
- ✔ **D. Transformation**

✔ **Answer: D**
Explanation: Griffith’s experiment with pneumococcus demonstrated it.

Q34 **Transfer of bacterial DNA by a bacteriophage is:**

- ○ A. Transformation
- ○ B. Conjugation
- ✔ **C. Transduction**
- ○ D. Binary fission

✔ **Answer: C**
Explanation: Phages carry DNA from one bacterium to another.

Q35 **Resistant structures formed by bacteria in harsh conditions are:**

- ○ A. Zoospores
- ✔ **B. Endospores**
- ○ C. Conidia
- ○ D. Zygospores

✔ **Answer: B**
Explanation: Endospores survive heat, drying and chemicals.

Q36 **Bacteria that make food using light energy are:**

- ○ A. Chemoautotrophs
- ✔ **B. Photoautotrophs**
- ○ C. Saprophytes
- ○ D. Parasites

✔ **Answer: B**
Explanation: Examples are cyanobacteria and purple sulphur bacteria.

Q37 **Nitrosomonas converts:**

✔ **A. Ammonia to nitrite**

○ B. Nitrite to nitrate

○ C. Nitrogen to ammonia

○ D. Nitrate to nitrogen gas

✔ **Answer: A**
Explanation: This is the first step of nitrification.

Q38 **Nitrobacter converts:**

○ A. Ammonia to nitrite

○ B. Nitrate to nitrogen gas

○ C. Nitrogen to ammonia

✔ **D. Nitrite to nitrate**

✔ **Answer: D**
Explanation: It completes nitrification, giving plants usable nitrate.

Q39 **The symbiotic nitrogen-fixing bacterium in legume root nodules is:**

- ○ A. Azotobacter
- ○ B. Nitrosomonas
- ✔ **C. Rhizobium**
- ○ D. Clostridium

✔ **Answer: C**
Explanation: Azotobacter is free-living.

Q40 **Under ideal conditions, E. coli can divide about every:**

- ○ A. 2 hours
- ○ B. 24 hours
- ✔ **C. 20 minutes**
- ○ D. 5 days

✔ **Answer: C**
Explanation: Such rapid division leads to exponential growth.

Did you know? Under ideal conditions, a single bacterium can multiply into millions within about eight hours!

Section 5: Importance & Diseases

Questions 41 – 50

Q41 **Milk is converted into curd mainly by:**

- ○ A. Rhizobium
- ✔ **B. Lactobacillus**
- ○ C. Yeast
- ○ D. Penicillium

✔ **Answer: B**
Explanation: It converts lactose into lactic acid, which curdles milk.

Q42 **Tuberculosis is caused by:**

- ✔ **A. Mycobacterium tuberculosis**
- ○ B. Vibrio cholerae
- ○ C. Salmonella typhi
- ○ D. Clostridium tetani

✔ **Answer: A**
Explanation: It spreads through droplets from infected persons.

Q43 **Cholera is caused by:**

- ○ A. Salmonella typhi
- ○ B. Mycobacterium leprae
- ○ C. Bacillus anthracis
- ✔ **D. Vibrio cholerae**

✔ **Answer: D**
Explanation: It spreads through contaminated water.

Q44 **Typhoid is caused by:**

- ○ A. Vibrio cholerae
- ○ B. Clostridium tetani
- ○ C. Streptococcus pneumoniae
- ✔ **D. Salmonella typhi**

✔ **Answer: D**
Explanation: The Widal test is used for its diagnosis.

Q45 **Tetanus is caused by:**

- ○ A. Corynebacterium diphtheriae
- ○ B. Bacillus anthracis
- ✔ **C. Clostridium tetani**
- ○ D. Neisseria gonorrhoeae

✔ **Answer: C**
Explanation: Spores enter through wounds and release a toxin.

Q46 **Pneumonia is commonly caused by:**

- ○ A. Vibrio cholerae
- ✔ **B. Streptococcus pneumoniae**
- ○ C. Salmonella typhi
- ○ D. Clostridium tetani

✔ **Answer: B**
Explanation: It infects the alveoli of the lungs.

Q47	Antibiotics such as streptomycin are obtained from:
✔	**A. Streptomyces (actinomycetes)**
○	B. Cyanobacteria
○	C. Algae
○	D. Viruses

✔ **Answer: A**
Explanation: Streptomyces produces many important antibiotics.

Q48	Biogas production mainly depends on:
✔	**A. Methanogens**
○	B. Nitrifying bacteria
○	C. Cyanobacteria
○	D. Lactobacillus

✔ **Answer: A**
Explanation: They convert dung and plant waste into methane.

Q49 **Pasteurisation of milk kills bacteria by:**

- ○ A. Freezing it
- ○ B. Adding salt
- ○ C. Exposing it to light
- ✔ **D. Heating to a moderate temperature, then cooling**

✔ **Answer: D**
Explanation: The method was developed by Louis Pasteur.

Q50 **Which of these is NOT a bacterium?**

- ○ A. E. coli
- ○ B. Nostoc
- ✔ **C. Amoeba**
- ○ D. Streptococcus

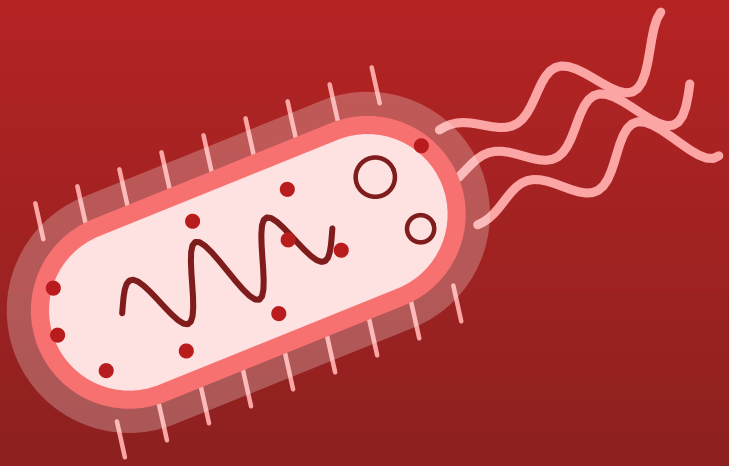
✔ **Answer: C**
Explanation: Amoeba is a protist; Nostoc is a cyanobacterium.

Did you know? Only a small fraction of bacteria cause disease; most are harmless or even helpful.

Quick Answer Key

Tap a question to jump back to its explanation.

Q1 → D	Q11 → D	Q21 → A	Q31 → A	Q41 → B
Q2 → C	Q12 → D	Q22 → D	Q32 → A	Q42 → A
Q3 → B	Q13 → C	Q23 → C	Q33 → D	Q43 → D
Q4 → B	Q14 → B	Q24 → C	Q34 → C	Q44 → D
Q5 → A	Q15 → A	Q25 → B	Q35 → B	Q45 → C
Q6 → D	Q16 → A	Q26 → A	Q36 → B	Q46 → B
Q7 → C	Q17 → D	Q27 → D	Q37 → A	Q47 → A
Q8 → C	Q18 → C	Q28 → D	Q38 → D	Q48 → A
Q9 → B	Q19 → B	Q29 → C	Q39 → C	Q49 → D
Q10 → A	Q20 → B	Q30 → B	Q40 → C	Q50 → C



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