CHEMISTRY MCQ BOOKLET

Grade 9 · Chapter 12 · Environmental Chemistry — Water

FBISE / National Book Foundation Model Textbook companion

by Public Library

Independent MCQs on water tests, purity, pollutants, treatment, disease, scarcity, and fertilisers. Not copied from the book exercise. Total: 108 questions. Each item has four options, the correct letter, and a short explanation of why it is correct.

A. Important / Main Topics

1. A chemical test for water uses anhydrous copper(II) sulphate, which is:

(A) white (or off-white) and turns blue when hydrated
(B) blue already
(C) always yellow
(D) a gas

Correct Answer: A

Explanation: Hydration produces blue hydrated CuSO4 — so "white (or off-white) and turns blue when hydrated" is the matching option.

2. The colour change white → blue confirms:

(A) presence of methane only
(B) presence of water
(C) presence of N2 only
(D) acidity of rain only

Correct Answer: B

Explanation: Water is taken into the crystal lattice.

3. Pure water melts at sea level at:

(A) 100 °C
(B) −100 °C
(C) 0 °C
(D) 37 °C

Correct Answer: C

Explanation: Ice–water equilibrium is 0 °C for the pure substance.

4. Pure water boils at sea level at:

(A) 0 °C
(B) 4 °C
(C) 273 °C
(D) 100 °C

Correct Answer: D

Explanation: That is the standard boiling point used in purity tests.

5. Impurities typically:

(A) shift melting and boiling points from the pure values
(B) leave melting and boiling points unchanged
(C) always raise both to 200 °C
(D) turn water into argon

Correct Answer: A

Explanation: Colligative/impurity effects are the purity check.

6. Water is the only common substance that naturally exists on Earth as:

(A) plasma only
(B) solid, liquid, and gas
(C) metal only

(D) a noble gas

Correct Answer: B

Explanation: Water is the only common substance that naturally exists on Earth as solid, liquid, and gas.

7. Pure water is described as transparent, colourless, odourless, and:

(A) salty always
(B) blue like hydrated CuSO4
(C) tasteless
(D) acidic at pH 2.1 always

Correct Answer: C

Explanation: Taste and colour usually come from dissolved substances.

8. Water is an excellent solvent, so natural water is:

(A) always chemically pure H2O
(B) always distilled
(C) always pH 14
(D) rarely pure

Correct Answer: D

Explanation: Gases, minerals, and organics dissolve as water moves.

9. Rain dissolves oxygen, nitrogen, carbon dioxide, and:

(A) dust particles
(B) only gold nuggets always
(C) only helium hydrides
(D) pure argon ice

Correct Answer: A

Explanation: Even rain is a dilute solution — so "dust particles" is the matching option.

10. During thunderstorms, rain may also dissolve:

(A) only methane hydrates
(B) nitric acid
(C) only PVC
(D) only urea crystals always

Correct Answer: B

Explanation: Lightning chemistry can put nitrogen acids into rain.

11. Groundwater picks up minerals from rocks and soils and substances from:

(A) only catalytic converters
(B) only N95 masks
(C) decaying plants and animals
(D) only Paris Agreement ink

Correct Answer: C

Explanation: Contact with the crust and organic decay loads the water.

12. Dissolved oxygen in natural water is:

(A) useless and always toxic
(B) identical to ozone always
(C) a heavy metal
(D) essential for aquatic organisms

Correct Answer: D

Explanation: Fish and other aerobes need O2(aq) — so "essential for aquatic organisms" is the matching option.

13. Metal ions such as Fe, Na, K, Mg, Ca, Mn, Zn, and Cu can be:

(A) beneficial minerals in moderate amounts
(B) never present in natural water
(C) always plastics

(D) always viruses

Correct Answer: A

Explanation: Some metals are essential; dose still matters.

14. Iron in water/diet matters because it is needed to make:

(A) cellulose only
(B) haemoglobin
(C) argon
(D) PVC pipes

Correct Answer: B

Explanation: Haemoglobin carries oxygen in blood — so "haemoglobin" is the matching option.

15. Zinc, copper, and manganese are noted as helping to:

(A) make N2 78% of air
(B) form acid rain only
(C) activate enzymes
(D) chlorinate pools only

Correct Answer: C

Explanation: Trace metals support enzyme function — so "activate enzymes" is the matching option.

16. Plastic waste in water is a serious threat mainly to:

(A) making distilled water pH 7
(B) catalytic converters
(C) anhydrous CuSO4 colour
(D) aquatic life and ecosystems

Correct Answer: D

Explanation: Plastics harm animals and habitats — so "aquatic life and ecosystems" is the matching option.

17. Sewage and wastewater can carry:

(A) pathogens (bacteria, viruses, parasites)
(B) only noble gases
(C) only oxygen bubbles that sterilise always
(D) only NPK crystals that are sterile always

Correct Answer: A

Explanation: Microbes cause waterborne disease — so "pathogens (bacteria, viruses, parasites)" is the matching option.

18. Waterborne illnesses named include diarrhoea, dysentery, cholera, and:

(A) only scurvy from vitamin C uniquely here
(B) stomach upsets
(C) only colour blindness
(D) only marasmus from fats uniquely here

Correct Answer: B

Explanation: Waterborne illnesses named include diarrhoea, dysentery, cholera, and stomach upsets.

19. High nitrates from fertiliser runoff are a special drinking-water risk for:

(A) only adult athletes always
(B) only trees
(C) young children
(D) only catalytic metals

Correct Answer: C

Explanation: Infant sensitivity to nitrate is highlighted.

20. Phosphates from fertilisers and detergents drive:

(A) only higher melting point of ice to 50 °C
(B) only distillation

(C) only CuSO4 hydration
(D) eutrophication and oxygen collapse after algal blooms

Correct Answer: D

Explanation: Phosphates from fertilisers and detergents drive eutrophication and oxygen collapse after algal blooms.

21. Detergents can damage fish by attacking mucous membranes and:

(A) gills
(B) only feathers of birds uniquely here
(C) only haemoglobin iron
(D) only DNA bases

Correct Answer: A

Explanation: Detergents can damage fish by attacking mucous membranes and gills.

22. Sedimentation lets suspended solids:

(A) turn into methane
(B) sink in a reservoir
(C) become chlorine
(D) raise boiling point to 0 °C

Correct Answer: B

Explanation: Standing water drops settleable matter — so "sink in a reservoir" is the matching option.

23. Coagulation uses slaked lime and alum to form gelatinous:

(A) sodium metal
(B) ozone
(C) aluminium hydroxide
(D) methane hydrate

Correct Answer: C

Explanation: Al(OH)3 flocs trap fine particles — so "aluminium hydroxide" is the matching option.

24. The lime–alum reaction is of the type Ca(OH)2 + Al2(SO4)3 → Al(OH)3 +:

(A) only CH4
(B) only N2
(C) only O3
(D) CaSO4

Correct Answer: D

Explanation: Calcium sulphate is the other product — so "CaSO4" is the matching option.

25. Filtration in the plant uses layers of sand and gravel, and often:

(A) activated charcoal/carbon to remove colour and odour
(B) molten iron
(C) liquid nitrogen only
(D) pure ozone as the filter bed

Correct Answer: A

Explanation: Filtration in the plant uses layers of sand and gravel, and often activated charcoal/carbon to remove colour and odour.

26. Chlorination is the usual final step to:

(A) add hardness ions
(B) kill remaining microbes
(C) remove all dissolved oxygen always
(D) make water oily

Correct Answer: B

Explanation: Disinfection protects drinkers — so "kill remaining microbes" is the matching option.

27. Chlorine in water forms hypochlorous acid, HClO, which:

(A) is a fertiliser nutrient NPK
(B) is anhydrous CuSO4
(C) is the active antibacterial agent
(D) is a lipid vitamin

Correct Answer: C

Explanation: HClO attacks pathogens — so "is the active antibacterial agent" is the matching option.

28. The plant sequence given is raw water → sedimentation → coagulation → filtration →:

(A) cracking → ethene
(B) hydrogenation → alkane
(C) photosynthesis → glucose only
(D) chlorination → potable water

Correct Answer: D

Explanation: The plant sequence given is raw water → sedimentation → coagulation → filtration → chlorination → potable water.

29. Distilled water is made by boiling and then:

(A) condensing the vapour
(B) adding alum only
(C) adding detergents
(D) eutrophication

Correct Answer: A

Explanation: Distilled water is made by boiling and then condensing the vapour.

30. Distilled water has very low electrical conductivity and pH about:

(A) 2.1
(B) 7 (neutral)
(C) 14
(D) 0

Correct Answer: B

Explanation: Few ions remain after distillation — so "7 (neutral)" is the matching option.

31. Lab uses of distilled water include making reagents and:

(A) chlorinating swimming pools only
(B) NPK fertilising fields
(C) calibrating sensors such as pH meters
(D) catalytic conversion of NOx

Correct Answer: C

Explanation: Lab uses of distilled water include making reagents and calibrating sensors such as pH meters.

32. Long-term drinking of only distilled water can cause:

(A) extra NPK automatically
(B) immunity to all viruses always
(C) higher AQI outdoors
(D) mineral deficiency

Correct Answer: D

Explanation: Long-term drinking of only distilled water can cause mineral deficiency.

33. Tap water comes from municipal treatment of streams, rivers, lakes, reservoirs, or:

(A) groundwater
(B) only pure molten salts
(C) only crude oil fractions
(D) only DNA extracts

Correct Answer: A

Explanation: Source water is then treated for supply.

34. In the lab, tap water is fine for:

(A) all precise volumetric standards always
(B) washing glassware and simple demos
(C) anhydrous reagents that must stay dry
(D) calibrating conductivity to zero always

Correct Answer: B

Explanation: In the lab, tap water is fine for washing glassware and simple demos.

35. Household wastes include human and livestock waste, soaps, detergents, paints, oils, food scraps, and:

(A) only argon
(B) only platinum
(C) garbage
(D) only ozone

Correct Answer: C

Explanation: Domestic effluent is a mixed chemical and biological load.

36. Detergents clean more strongly than soap but persist and can:

(A) raise dissolved oxygen always
(B) sterilise hepatitis viruses always
(C) turn water into ice at 100 °C
(D) kill aquatic life

Correct Answer: D

Explanation: Detergents clean more strongly than soap but persist and can kill aquatic life.

37. Bacterial contamination of water is linked to cholera, jaundice, hepatitis, typhoid, and:

(A) dysentery
(B) only marasmus from calories uniquely here
(C) only colour blindness
(D) only acid rain on marble

Correct Answer: A

Explanation: Classic waterborne infections — so "dysentery" is the matching option.

38. Water treatment also aims to remove heavy metals such as arsenic, chromium, and:

(A) helium
(B) lead
(C) neon
(D) argon

Correct Answer: B

Explanation: Water treatment also aims to remove heavy metals such as arsenic, chromium, and lead.

39. Hepatitis is identified as a:

(A) bacterial Salmonella only always
(B) deficiency of vitamin K only
(C) viral disease that can spread through polluted drinking water
(D) type of NPK fertiliser

Correct Answer: C

Explanation: Hepatitis A and E are the water-linked types named.

40. A "Do you know" warning: chlorination is not effective against:

(A) all bacteria always
(B) all protozoa always listed as fully killed here
(C) all smells always
(D) viruses such as hepatitis

Correct Answer: D

Explanation: A “Do you know” warning: chlorination is not effective against viruses such as hepatitis.

41. Dysentery here is an intestinal disease caused by the parasite:

(A) Entamoeba
(B) Salmonella typhi only always
(C) only influenza
(D) only HIV

Correct Answer: A

Explanation: Faecal cysts contaminate water or food — so “Entamoeba” is the matching option.

42. Dysentery stools may be chocolate-coloured with mucus and sometimes:

(A) only gold flakes
(B) blood
(C) only NPK crystals
(D) only hydrated CuSO4

Correct Answer: B

Explanation: Bloody diarrhoea is a clinical clue — so “blood” is the matching option.

43. Jaundice shows yellow skin and eyes from excess bile after:

(A) too much oxygen in lakes
(B) too much argon
(C) liver obstruction/inflammation problems
(D) catalytic conversion

Correct Answer: C

Explanation: Bile pigments enter the blood — so “liver obstruction/inflammation problems” is the matching option.

44. Typhoid is a dangerous intestinal disease from Salmonella species spread by:

(A) only healthy distilled water
(B) only ozone
(C) only sand filters that always sterilise viruses
(D) polluted water

Correct Answer: D

Explanation: Typhoid is a dangerous intestinal disease from Salmonella species spread by polluted water.

45. Typhoid fever is described as continuous high temperature around:

(A) 101–104 °F with an irregular pulse
(B) 0 °C exactly
(C) 100 °C skin temperature
(D) −10 °C

Correct Answer: A

Explanation: That fever range is the textbook clinical picture.

46. Unclean water, poor sanitation, and poor hygiene are said to kill about:

(A) 21 people only
(B) 2,668,000 people a year worldwide
(C) 78 people only
(D) 0.038% of argon atoms

Correct Answer: B

Explanation: The human cost of dirty water is huge — so “2,668,000 people a year worldwide” is the matching option.

47. Swimming-pool water is treated by aeration and:

(A) cracking
(B) hydrogenation over Ni
(C) chlorination
(D) photosynthesis

Correct Answer: C

Explanation: Swimming-pool water is treated by aeration and chlorination.

48. Eutrophication control needs treating sewage/industry and limiting:

(A) dissolved oxygen for fish
(B) all filtration
(C) all sedimentation
(D) nutrient flow (nitrates/phosphates)

Correct Answer: D

Explanation: Stop the algal fertiliser leak — so "nutrient flow (nitrates/phosphates)" is the matching option.

49. Heavy metals in water can accumulate in aquatic organisms and then:

(A) harm people who eat them
(B) always become vitamins A, D, E, K
(C) always raise pH to 14
(D) always form anhydrous CuSO4

Correct Answer: A

Explanation: Food-chain concentration is the hazard — so "harm people who eat them" is the matching option.

50. Microbial disease control requires wastewater treatment, hygiene, and:

(A) more open gutter dumping
(B) access to clean drinking water
(C) more septic leaks
(D) more detergent phosphates

Correct Answer: B

Explanation: Barriers at source and tap both matter — so "access to clean drinking water" is the matching option.

51. Water scarcity in Pakistan is worsened by rapid:

(A) increase in noble gases
(B) increase in distilled-water pH to 14
(C) population growth raising demand
(D) decrease in agriculture to zero

Correct Answer: C

Explanation: Water scarcity in Pakistan is worsened by rapid population growth raising demand.

52. Climate change contributes via:

(A) always more even rain everywhere
(B) turning rivers to methane
(C) raising boiling point of pure water to 0 °C
(D) irregular rainfall

Correct Answer: D

Explanation: Climate change contributes via irregular rainfall.

53. Over-pumping groundwater aquifers and poor irrigation:

(A) decline water resources
(B) create infinite water
(C) sterilise all viruses
(D) hydrate CuSO4 in air

Correct Answer: A

Explanation: Over-pumping groundwater aquifers and poor irrigation decline water resources.

54. Traditional flood irrigation loses much water by:

(A) photosynthesis only
(B) evaporation and poor distribution
(C) catalytic conversion
(D) peptide bonding

Correct Answer: B

Explanation: Surface flooding is inefficient — so "evaporation and poor distribution" is the matching option.

55. Scarcity solutions include management, infrastructure, policy, public awareness, and:

(A) more open sewers
(B) more phosphate detergents
(C) rules against illegal drilling
(D) banning chlorination always

Correct Answer: C

Explanation: Governance of groundwater is essential — so "rules against illegal drilling" is the matching option.

56. Fertilisers supply essential elements to:

(A) disinfect swimming pools
(B) test for water with CuSO4
(C) make catalytic converters
(D) raise crop yields

Correct Answer: D

Explanation: They are plant nutrients, not sanitizers.

57. NPK fertilisers provide nitrogen, phosphorus, and:

(A) potassium
(B) argon
(C) helium
(D) ozone

Correct Answer: A

Explanation: Those three letters are the major nutrient trio.

58. Examples of fertilisers named include urea, potassium nitrate, and:

(A) platinum metal
(B) ammonium salts such as diammonium phosphate
(C) PVC
(D) N95 fabric

Correct Answer: B

Explanation: Urea and ammonium salts are nitrogen sources.

59. Nutrient management means applying fertiliser:

(A) as much as possible always
(B) only into rivers
(C) at the right time and amount to cut runoff
(D) only as plastics

Correct Answer: C

Explanation: Nutrient management means applying fertiliser at the right time and amount to cut runoff.

60. Hydration of anhydrous CuSO4 is the process of:

(A) boiling at 100 °C only
(B) chlorination
(C) eutrophication
(D) absorbing water into the solid

Correct Answer: D

Explanation: Hydration of anhydrous CuSO4 is the process of absorbing water into the solid.

61. Copper(II) sulphate is toxic, so the activity needs:

(A) gloves, goggles, and hand washing
(B) tasting the crystals
(C) heating in an open room without care
(D) dumping leftovers in a stream

Correct Answer: A

Explanation: It is a laboratory chemical, not a food.

62. In the melting-point purity test the thermometer bulb must be:

(A) in the Bunsen flame
(B) covered by the ice
(C) in the air above the beaker only
(D) wrapped in aluminium always

Correct Answer: B

Explanation: It must measure the ice–water temperature, not the flame.

63. In the boiling-point test the bulb is immersed but should not:

(A) be wet
(B) be below 100 °C ever
(C) touch the beaker bottom
(D) be used with a tripod

Correct Answer: C

Explanation: Contact with hot glass gives a false high reading.

64. Stirring while heating the boiling-point sample:

(A) adds NPK
(B) chlorinates the sample
(C) makes anhydrous CuSO4
(D) evens the temperature

Correct Answer: D

Explanation: Stirring while heating the boiling-point sample evens the temperature.

65. Freshwater in nature is described as a:

(A) dilute mineral solution
(B) pure element
(C) molten salt
(D) noble gas mixture like air

Correct Answer: A

Explanation: Dissolved ions are normal until concentrations become harmful.

66. Water becomes unfit when mineral levels are too high or when:

(A) dissolved oxygen supports fish
(B) human activities add extra contaminants
(C) pH is 7 for distilled water
(D) carbon is used to improve taste in treatment

Correct Answer: B

Explanation: Pollution is overload beyond natural background.

67. Pathogenic microorganisms are:

(A) always beneficial minerals
(B) NPK fertilisers
(C) disease-causing microbes
(D) catalytic metals Pt/Pd/Rh

Correct Answer: C

Explanation: Bacteria, viruses, and parasites that infect.

68. Alum in municipal treatment is used because it helps:

(A) add nitrates for eutrophication
(B) replace chlorination completely always
(C) raise boiling point to 0 °C
(D) coagulate fine particles

Correct Answer: D

Explanation: Aluminium sulphate is the coagulant salt.

69. Activated carbon in filtration is for:

(A) tastes, colours, and odorous compounds
(B) killing all viruses guaranteed
(C) adding hardness
(D) making NPK

Correct Answer: A

Explanation: Adsorption, not disinfection, is its job.

70. Hypochlorous acid forms in the reaction of chlorine with:

(A) only methane
(B) water
(C) only benzene
(D) only DNA

Correct Answer: B

Explanation: $Cl_2 + H_2O \rightarrow HClO + H^+ + Cl^-$ — so "water" is the matching option.

71. Anaemia is not a classic waterborne infection in the review sense; hepatitis, typhoid, and dysentery:

(A) are noble gases
(B) are NPK letters
(C) are water-linked diseases
(D) are catalytic metals

Correct Answer: C

Explanation: Anemia is a nutrient/blood issue, not faecal–oral in that MCQ trap.

72. Livestock waste, pesticides, and septic tanks are all:

(A) steps of distillation
(B) tests for anhydrous $CuSO_4$
(C) Paris Agreement temperature limits
(D) human-related ways water bodies get contaminated

Correct Answer: D

Explanation: Livestock waste, pesticides, and septic tanks are all human-related ways water bodies get contaminated.

73. Public health depends on water quality because dirty water spreads:

(A) epidemic disease
(B) only extra oxygen for athletes always
(C) only higher crop NPK always safely
(D) only blue $CuSO_4$ fashion

Correct Answer: A

Explanation: Drinking and washing water must be safe.

74. Chemistry keeps pools safer by aeration plus chlorine that:

(A) adds phosphates
(B) attacks pathogens
(C) causes eutrophication on purpose
(D) hydrates $CuSO_4$ in the gut

Correct Answer: B

Explanation: Disinfection chemistry, not perfume, is the point.

75. Handwashing with soap after toilets reduces:

(A) dissolved oxygen in rivers
(B) the melting point of ice to 100 °C
(C) faecal–oral spread of microbes

(D) NPK in soil always

Correct Answer: C

Explanation: Handwashing with soap after toilets reduces faecal–oral spread of microbes.

76. Urea is used as a:

(A) chlorine disinfectant
(B) heavy-metal scavenger only
(C) pH 7 buffer for distilled water only
(D) nitrogen fertiliser

Correct Answer: D

Explanation: It supplies N for plant growth — so "nitrogen fertiliser" is the matching option.

77. Phosphates in detergents plus farm runoff both:

(A) feed algal blooms
(B) sterilise Entamoeba always
(C) raise distilled-water conductivity to zero
(D) make CuSO4 white

Correct Answer: A

Explanation: Extra P is a eutrophication nutrient — so "feed algal blooms" is the matching option.

78. Harmful microbes in sewage cause:

(A) only higher crop yield always
(B) waterborne disease
(C) only blue hydration of CuSO4
(D) only catalytic NOx reduction

Correct Answer: B

Explanation: That is why sewage must be treated — so "waterborne disease" is the matching option.

79. Sedimentation, filtration, and chlorination are named as major:

(A) alkane preparations
(B) DNA base pairings
(C) domestic water-treatment steps
(D) greenhouse gases

Correct Answer: C

Explanation: Sedimentation, filtration, and chlorination are named as major domestic water-treatment steps.

80. Some metal compounds in natural water provide:

(A) always lead poisoning only
(B) always plastic waste
(C) always Entamoeba cysts
(D) essential minerals for life

Correct Answer: D

Explanation: Dose distinguishes nutrient from toxin — so "essential minerals for life" is the matching option.

B. Less Important / Secondary Topics

81. Copper sulphate leftovers after the water test should be:

(A) treated as toxic waste, not poured thoughtlessly
(B) eaten to test hydration
(C) added to swimming pools as chlorine
(D) used as NPK

Correct Answer: A

Explanation: It is a poisonous salt — so "treated as toxic waste, not poured thoughtlessly" is the matching option.

82. Ice for the melting-point activity is made from the:

(A) only concentrated sulphuric acid

(B) water sample being tested
(C) only ethanol
(D) only molten alum

Correct Answer: B

Explanation: Ice for the melting-point activity is made from the water sample being tested.

83. Rainwater's dissolved gases include O2, N2, and:

(A) only Cl2 always
(B) only HClO always
(C) CO2
(D) only CH4 always

Correct Answer: C

Explanation: Atmospheric gases dissolve as drops fall.

84. Calcium and magnesium in natural water are examples of:

(A) plastics
(B) viruses
(C) NPK letters themselves
(D) dissolved metal compounds

Correct Answer: D

Explanation: They are common crustal cations — so "dissolved metal compounds" is the matching option.

85. "Oxygen caps" in the phosphate discussion refers to:

(A) oxygen depletion after blooms decay
(B) putting a lid of pure O2 on lakes always helping fish
(C) ozone holes
(D) catalytic converters

Correct Answer: A

Explanation: "Oxygen caps" in the phosphate discussion refers to oxygen depletion after blooms decay.

86. Botulism, polio, and hepatitis appear together as:

(A) fertiliser nutrients
(B) pathogen-related reasons to treat water
(C) states of water
(D) CuSO4 colours

Correct Answer: B

Explanation: Treatment removes disease organisms — so "pathogen-related reasons to treat water" is the matching option.

87. Heavy-metal health effects listed include neurological problems, kidney disease, nausea, dizziness, and:

(A) only blue eyes from CuSO4
(B) only extra height
(C) cancer
(D) only better AQI

Correct Answer: C

Explanation: Chronic metal exposure is multi-organ — so "cancer" is the matching option.

88. Treatment also improves water's:

(A) octane rating
(B) DNA sequence
(C) Paris Agreement status
(D) flavour and appearance

Correct Answer: D

Explanation: Aesthetics follow cleaner chemistry — so "flavour and appearance" is the matching option.

89. Dumping human waste on ground or into streams spreads:

(A) typhoid, dysentery, and hepatitis
(B) only extra dissolved oxygen
(C) only argon
(D) only hydrated CuSO4 fashion

Correct Answer: A

Explanation: Faecal–oral waterborne set — so "typhoid, dysentery, and hepatitis" is the matching option.

90. Hepatitis types named as water-spread are:

(A) only B and C always in this sentence
(B) A and E
(C) only D
(D) only autoimmune

Correct Answer: B

Explanation: A and E are the faecal–water pair at this level.

91. Aeration of pools helps because it:

(A) adds NPK
(B) makes anhydrous CuSO4
(C) supports treatment against biological contamination
(D) cracks decane

Correct Answer: C

Explanation: Aeration of pools helps because it supports treatment against biological contamination.

92. Illegal groundwater drilling is targeted because it:

(A) increases rainfall
(B) disinfects viruses
(C) hydrates CuSO4
(D) worsens scarcity and aquifer decline

Correct Answer: D

Explanation: Uncontrolled wells steal shared water — so "worsens scarcity and aquifer decline" is the matching option.

93. Public awareness of responsible use is listed beside:

(A) infrastructure and policy reform
(B) more detergent phosphate
(C) open gutters
(D) skipping chlorination always

Correct Answer: A

Explanation: Behaviour plus engineering — so "infrastructure and policy reform" is the matching option.

94. Diammonium phosphate is grouped with superphosphate ideas as a:

(A) chlorine source
(B) phosphorus-containing fertiliser
(C) DNA nucleotide
(D) catalytic metal

Correct Answer: B

Explanation: It supplies plant P (and N) — so "phosphorus-containing fertiliser" is the matching option.

95. References named in the unit (Kelter; Baird; Wright) are:

(A) pollutants
(B) fertilisers
(C) further reading, not the MCQ answers themselves
(D) water-test reagents

Correct Answer: C

Explanation: References named in the unit (Kelter; Baird; Wright) are further reading, not the MCQ answers themselves.

96. A project chart of a water-pollution model is meant to show:

(A) only alkane boiling points
(B) only DNA base pairs
(C) only Paris °C targets
(D) sources and pathways of contamination

Correct Answer: D

Explanation: Visualise how dirt enters water — so "sources and pathways of contamination" is the matching option.

97. Industrial wastewater should be kept out of waterways mainly to stop:

(A) heavy-metal and chemical loads
(B) dissolved oxygen for fish
(C) all sedimentation forever
(D) all rainfall

Correct Answer: A

Explanation: Factories can dump concentrated toxins — so "heavy-metal and chemical loads" is the matching option.

98. Household chemical and bacterial contents contaminate:

(A) only stratospheric ozone
(B) surface and underground water
(C) only catalytic converters
(D) only dry-air argon

Correct Answer: B

Explanation: Septic leaks reach aquifers too — so "surface and underground water" is the matching option.

99. Distilled water is preferred in chemistry because it is:

(A) a good long-term drinking mineral source
(B) identical to seawater
(C) free of ordinary contaminants and ions
(D) a eutrophication nutrient

Correct Answer: C

Explanation: Purity, not nutrition, is the lab goal — so "free of ordinary contaminants and ions" is the matching option.

100. Treated tap, bottled, or spring water is preferred for drinking because of:

(A) zero ions always like distillate
(B) always pH 2.1
(C) always Entamoeba
(D) minerals and safety treatment

Correct Answer: D

Explanation: Treated tap, bottled, or spring water is preferred for drinking because of minerals and safety treatment.

101. Gelatinous Al(OH)3 is useful because it:

(A) sweeps fine mud into removable flocs
(B) kills hepatitis viruses guaranteed
(C) is NPK
(D) is anhydrous CuSO4

Correct Answer: A

Explanation: Physical entrapment after coagulation — so "sweeps fine mud into removable flocs" is the matching option.

102. Slaked lime is:

(A) Al2(SO4)3

(B) Ca(OH)2
(C) HClO
(D) CuSO4

Correct Answer: B

Explanation: Calcium hydroxide pairs with alum — so "Ca(OH)2" is the matching option.

103. Alum in the equation is:

(A) Ca(OH)2
(B) HClO
(C) Al2(SO4)3
(D) CH4

Correct Answer: C

Explanation: Aluminium sulphate — so "Al2(SO4)3" is the matching option.

104. Chocolate-coloured stool is a symptom clue for:

(A) typhoid fever range only
(B) jaundice yellow eyes only
(C) marasmus
(D) dysentery (Entamoeba)

Correct Answer: D

Explanation: The chapter's dysentery picture — so "dysentery (Entamoeba)" is the matching option.

105. Yellow skin and eyes plus fatigue point toward:

(A) jaundice/liver pigment problems
(B) extra dissolved oxygen
(C) CuSO4 hydration
(D) NPK excess only

Correct Answer: A

Explanation: Bile in blood — so "jaundice/liver pigment problems" is the matching option.

106. Salmonella typhi, paratyphi, and enteritidis are grouped under:

(A) hepatitis viruses
(B) typhoid-related bacteria
(C) Entamoeba
(D) NPK salts

Correct Answer: B

Explanation: Typhoid/paratyphoid family — so "typhoid-related bacteria" is the matching option.

107. Controlling nutrient flow prevents:

(A) all fish respiration always
(B) distillation
(C) excessive algae that later steal oxygen
(D) CuSO4 turning blue

Correct Answer: C

Explanation: Eutrophication management — so "excessive algae that later steal oxygen" is the matching option.

108. Washing hands with soap is advised after bathrooms because soap helps remove:

(A) all NPK from skin as the main goal
(B) all dissolved oxygen
(C) all calcium minerals needed in diet
(D) infectious microbes before they spread

Correct Answer: D

Explanation: Washing hands with soap is advised after bathrooms because soap helps remove infectious microbes before they spread.