CHEMISTRY MCQ BOOKLET

Grade 9 · Chapter 15 · Biochemistry

FBISE / National Book Foundation Model Textbook companion

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Independent MCQs on nutrition, carbohydrates, proteins, lipids, nucleic acids, and daily intake. 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. Biochemistry is the study of:

(A) molecules (organic and inorganic) in living organisms
(B) only stars
(C) only rocks
(D) only noble-gas lamps

Correct Answer: A

Explanation: Chemistry of living matter — so "molecules (organic and inorganic) in living organisms" is the matching option.

2. Nutrition/diet in the chapter is the total of:

(A) only water
(B) molecules or nutrients we need
(C) only DNA
(D) only NOx

Correct Answer: B

Explanation: Food as molecular supply — so "molecules or nutrients we need" is the matching option.

3. The brain is compared to a 24/7 engine that needs constant:

(A) argon from air only
(B) chlorine from pools
(C) fuel from food
(D) SO2 from coal

Correct Answer: C

Explanation: The brain is compared to a 24/7 engine that needs constant fuel from food.

4. A balanced diet provides all nutrients in:

(A) infinite excess of sugar only
(B) zero water
(C) only lipids
(D) suitable amounts for life processes

Correct Answer: D

Explanation: A balanced diet provides all nutrients in suitable amounts for life processes.

5. The six basic nutrients listed are carbohydrates, lipids, proteins, vitamins, minerals, and:

(A) water
(B) helium
(C) PVC
(D) ozone

Correct Answer: A

Explanation: Plus dietary fibre mentioned as a component.

6. Healthy eating is said to help reduce high blood pressure and high:

(A) argon
(B) cholesterol
(C) octane

(D) AQI always to zero

Correct Answer: B

Explanation: Diet–disease links — so “cholesterol” is the matching option.

7. It also helps prevent obesity, diabetes, cardiovascular disease, cancer, and:

(A) catenation failure
(B) acid rain
(C) skeletal problems
(D) photochemical smog as a nutrient issue

Correct Answer: C

Explanation: Lifestyle diseases named — so “skeletal problems” is the matching option.

8. Carbohydrates are macromolecules of C, H, and:

(A) only N
(B) only P
(C) only S always
(D) O

Correct Answer: D

Explanation: Hydrates of carbon idea — so “O” is the matching option.

9. Main role of carbohydrates is to supply:

(A) energy to body cells
(B) genetic code
(C) only insulation fat always
(D) only peptide catalysts

Correct Answer: A

Explanation: Fuel molecules — so “energy to body cells” is the matching option.

10. 1 gram of carbohydrate yields about:

(A) 9 kilocalories
(B) 4 kilocalories
(C) 1 calorie as the food Calorie always equal to 9
(D) zero energy

Correct Answer: B

Explanation: Same ballpark as protein per gram; fat is higher.

11. The body breaks carbohydrates down to:

(A) amino acids only
(B) fatty acids only
(C) glucose
(D) nucleotides only

Correct Answer: C

Explanation: Glucose is the circulating sugar fuel — so “glucose” is the matching option.

12. Glucose is the preferred fuel of the:

(A) only adipose fat cells that cannot use glucose
(B) only hair keratin
(C) atmosphere
(D) brain

Correct Answer: D

Explanation: Glucose is the preferred fuel of the brain.

13. If carbohydrate is lacking, the body may break down:

(A) muscle protein and body fat
(B) only DNA first always
(C) only argon

(D) only cellulose in stomach of humans as the main first fuel

Correct Answer: A

Explanation: Emergency fuels — so “muscle protein and body fat” is the matching option.

14. A calorie (scientific) is energy to raise 1 g of water by:

(A) 100 °C
(B) 1 °C
(C) 0 °C
(D) 37 °C

Correct Answer: B

Explanation: The unit definition in the box — so “1 °C” is the matching option.

15. In a balanced-diet pie, carbohydrates are shown near:

(A) 12%
(B) 33% as the carb slice
(C) 55%
(D) 90%

Correct Answer: C

Explanation: In a balanced-diet pie, carbohydrates are shown near 55%.

16. Lipids in that pie are near:

(A) 55%
(B) 12%
(C) 4%
(D) 33%

Correct Answer: D

Explanation: Second slice — so “33%” is the matching option.

17. Proteins in that pie are near:

(A) 12%
(B) 55%
(C) 33%
(D) 78%

Correct Answer: A

Explanation: Proteins in that pie are near 12%.

18. Simple carbohydrates include monosaccharides such as glucose and:

(A) starch
(B) fructose
(C) glycogen
(D) cellulose as a mono

Correct Answer: B

Explanation: One sugar unit — so “fructose” is the matching option.

19. Disaccharides contain two sugar units; examples are lactose and:

(A) glucose as a di
(B) glycogen
(C) sucrose
(D) starch

Correct Answer: C

Explanation: Disaccharides contain two sugar units; examples are lactose and sucrose.

20. Polysaccharides are complex carbs with many sugar units, e.g. starch and:

(A) fructose as a poly
(B) lactose as a poly
(C) glucose as a poly

(D) glycogen

Correct Answer: D

Explanation: Storage polymers — so “glycogen” is the matching option.

21. Proteins are macromolecules made of chains of:

(A) amino acids
(B) glucose only
(C) fatty acids only
(D) nucleotides only

Correct Answer: A

Explanation: Building blocks of proteins — so “amino acids” is the matching option.

22. 1 gram of protein yields about:

(A) 9 kilocalories
(B) 4 kilocalories
(C) 1 kJ only as the printed figure
(D) zero

Correct Answer: B

Explanation: Same energy density class as carbohydrate.

23. Enzymes are proteins that act as:

(A) genetic templates like DNA
(B) storage fats
(C) biological catalysts
(D) noble gases

Correct Answer: C

Explanation: They speed reactions in the body — so “biological catalysts” is the matching option.

24. A peptide is described as a:

(A) single fatty acid
(B) double helix
(C) monosaccharide
(D) chain of amino acids

Correct Answer: D

Explanation: Short polymer toward a protein — so “chain of amino acids” is the matching option.

25. A protein is a longer amino-acid chain with:

(A) secondary (folded) structure
(B) only one amino acid
(C) only C and H like methane
(D) no nitrogen

Correct Answer: A

Explanation: Folding makes function — so “secondary (folded) structure” is the matching option.

26. Amino acids help grow and repair tissue, make hormones, build muscle, and:

(A) set the Paris 1.5 °C cap
(B) support immune function
(C) chlorinate water
(D) crack decane

Correct Answer: B

Explanation: Many physiological roles — so “support immune function” is the matching option.

27. Lipids are fatty, waxy, or oily compounds that dissolve in organic solvents such as:

(A) only distilled water
(B) only HClO
(C) alcohol or chloroform, not water

(D) only N2

Correct Answer: C

Explanation: Non-polar character — so "alcohol or chloroform, not water" is the matching option.

28. Chemically, lipids are rich in hydrocarbons with little:

(A) carbon
(B) hydrogen
(C) energy
(D) oxygen, so they store energy densely

Correct Answer: D

Explanation: More reduced → more energy per gram — so "oxygen, so they store energy densely" is the matching option.

29. 1 gram of lipid yields about:

(A) 9 kilocalories
(B) 4 kilocalories
(C) 1 calorie matching carb
(D) 12% energy only

Correct Answer: A

Explanation: More than carb or protein per gram — so "9 kilocalories" is the matching option.

30. Lipids form cell membranes, store/move energy, help absorb vitamins, and make:

(A) DNA double helices as the lipid itself
(B) hormones
(C) sand filters
(D) catalytic converters

Correct Answer: B

Explanation: Signalling and structure — so "hormones" is the matching option.

31. Fat-soluble vitamins listed are A, D, K, and:

(A) B1 as fat-soluble in this list
(B) C as fat-soluble in this list
(C) E
(D) B12 as fat-soluble in this list

Correct Answer: C

Explanation: A, D, E, K — so "E" is the matching option.

32. Dietary fat in a balanced meal helps absorb those vitamins, e.g. salad with:

(A) only dry lettuce with zero fat always best for A/D/E/K
(B) only sugar
(C) only salt
(D) olive oil (and nuts)

Correct Answer: D

Explanation: Some lipid is needed for ADEK — so "olive oil (and nuts)" is the matching option.

33. Nucleic acids are macromolecules built from:

(A) nucleotides
(B) amino acids
(C) glucose only
(D) fatty acids only

Correct Answer: A

Explanation: Nucleotide monomers — so "nucleotides" is the matching option.

34. DNA is:

(A) always single-stranded like RNA in this definition
(B) double-stranded genetic material

(C) a disaccharide
(D) a lipid vitamin

Correct Answer: B

Explanation: Growth and function of organisms — so "double-stranded genetic material" is the matching option.

35. RNA is:

(A) the double helix storing the master copy only
(B) starch
(C) usually single-stranded and helps convert gene information into protein sequences
(D) cholesterol

Correct Answer: C

Explanation: Expression toward amino-acid sequences — so "usually single-stranded and helps convert gene information into protein sequences" is the matching option.

36. DNA bases pair adenine with thymine and cytosine with:

(A) uracil as the DNA partner of C
(B) adenine as C's pair
(C) ribose
(D) guanine

Correct Answer: D

Explanation: A–T and C–G — so "guanine" is the matching option.

37. RNA contains uracil instead of:

(A) thymine
(B) guanine as the complete replacement of all bases
(C) phosphate
(D) sugar

Correct Answer: A

Explanation: A, U, G, C in RNA — so "thymine" is the matching option.

38. Both DNA and RNA have a:

(A) peptide backbone
(B) sugar–phosphate backbone
(C) lipid bilayer as the nucleic acid itself
(D) metallic core

Correct Answer: B

Explanation: Nucleotide polymer linkage — so "sugar–phosphate backbone" is the matching option.

39. Carbohydrate food sources include fruits, grains, dairy (yogurt, milk, ice cream), and:

(A) only olive oil as the carb source
(B) only fish eggs as the only carb
(C) beans/plant proteins
(D) only butter

Correct Answer: C

Explanation: Carbohydrate food sources include fruits, grains, dairy (yogurt, milk, ice cream), and beans/plant proteins.

40. Carbohydrate functions include energy for muscle and brain and fibre that aids:

(A) storing the genetic code
(B) making NOx
(C) cracking alkanes
(D) fullness and digestion

Correct Answer: D

Explanation: Fibre is the indigestible plant carb benefit.

41. Carbs are soluble in water and can be oxidised in:

(A) cellular respiration
(B) only catalytic converters
(C) only flue-gas desulphurisation
(D) only hydrogenation over Ni

Correct Answer: A

Explanation: Biological oxidation for ATP/energy — so "cellular respiration" is the matching option.

42. Carbohydrate deficiency symptoms include headache, fatigue, poor concentration, nausea, constipation, bad breath, and:

(A) extra muscle growth always
(B) vitamin/mineral gaps
(C) higher DNA double strands
(D) blue CuSO4 skin

Correct Answer: B

Explanation: Low-carb extremes — so "vitamin/mineral gaps" is the matching option.

43. Protein sources include meat, fish, eggs, and plant foods such as peas, pulses, beans, and:

(A) only sugar
(B) only butter
(C) soya beans
(D) only olive oil as complete protein always

Correct Answer: C

Explanation: Animal and legume proteins — so "soya beans" is the matching option.

44. Protein functions include cell work, wound healing, brain function, hormones, and:

(A) storing genes as DNA
(B) insulating like a whale-fat-only role exclusive
(C) carrying AQI
(D) speeding reactions as enzymes

Correct Answer: D

Explanation: Catalysis plus structure — so "speeding reactions as enzymes" is the matching option.

45. Proteins are digested to:

(A) amino acids in stomach and small intestine
(B) glucose only
(C) glycerol only
(D) nucleotides only

Correct Answer: A

Explanation: Then absorbed — so "amino acids in stomach and small intestine" is the matching option.

46. Protein deficiency signs include poor growth in children, brittle hair/nails, poor wound healing, anaemia, weight loss, and:

(A) only extra muscle
(B) scaly skin
(C) only higher IQ always
(D) only blue flame combustion

Correct Answer: B

Explanation: Tissue maintenance fails — so "scaly skin" is the matching option.

47. Animal foods like meat, eggs, milk, and cheese are rich in saturated fats and:

(A) cellulose
(B) glycogen as the only lipid
(C) cholesterol
(D) DNA as the fat

Correct Answer: C

Explanation: Typical animal lipid profile — so “cholesterol” is the matching option.

48. Plant sources such as sunflower seeds and peanuts are rich in:

(A) only cholesterol
(B) only lactose
(C) only haemoglobin
(D) unsaturated fats

Correct Answer: D

Explanation: Plant oils — so “unsaturated fats” is the matching option.

49. Lipids’ primary function listed is:

(A) energy reserve and insulation
(B) storing the genome
(C) filtering N95 particles
(D) coagulating alum flocs

Correct Answer: A

Explanation: Dense fuel plus heat-keeping — so “energy reserve and insulation” is the matching option.

50. Lipids are digested in the small intestine to:

(A) amino acids
(B) fatty acids and glycerol
(C) glucose only
(D) nucleotides

Correct Answer: B

Explanation: Then absorbed — so “fatty acids and glycerol” is the matching option.

51. The body can store unlimited fat, contributing to:

(A) marasmus always
(B) DNA mutation always
(C) obesity
(D) acid rain

Correct Answer: C

Explanation: Energy surplus stored — so “obesity” is the matching option.

52. Lipid deficiency can cause dry rashes, hair loss, weaker immunity, poor infant growth, and:

(A) only extra fibre
(B) only higher AQI
(C) only blue flames
(D) more infections

Correct Answer: D

Explanation: Essential fat roles — so “more infections” is the matching option.

53. Good dietary sources of nucleic-acid material mentioned include seeds, grain, and:

(A) fish eggs
(B) only distilled water
(C) only table salt
(D) only chlorine

Correct Answer: A

Explanation: Cellular foods contain DNA/RNA — so “fish eggs” is the matching option.

54. DNA allows genetic information to pass:

(A) only into the atmosphere as CO2
(B) from generation to generation
(C) only into NPK fertiliser
(D) only into catalytic converters

Correct Answer: B

Explanation: Inheritance — so “from generation to generation” is the matching option.

55. RNA helps express DNA’s code by generating:

(A) methane
(B) SO2
(C) proteins
(D) alkanes

Correct Answer: C

Explanation: Translation toward polypeptides — so “proteins” is the matching option.

56. Nucleic acids also take part in metabolic regulation and:

(A) flue-gas desulphurisation
(B) cracking decane
(C) AQI colour chips
(D) storage/use of genetic information

Correct Answer: D

Explanation: Information macromolecules — so “storage/use of genetic information” is the matching option.

57. Macronutrients are fats, proteins, and:

(A) carbohydrates
(B) only vitamins
(C) only minerals
(D) only water as a macro in that trio

Correct Answer: A

Explanation: Energy nutrients — so “carbohydrates” is the matching option.

58. Micronutrients are:

(A) only starch
(B) vitamins and minerals
(C) only DNA
(D) only lipids

Correct Answer: B

Explanation: Needed in smaller amounts — so “vitamins and minerals” is the matching option.

59. Healthy-diet tips: more vegetables and fruit; less carbohydrate excess, sugar, salt, and:

(A) water
(B) all grains
(C) fat (eat least of oils/sugar/salt at pyramid top)
(D) all vegetables

Correct Answer: C

Explanation: Healthy-diet tips: more vegetables and fruit; less carbohydrate excess, sugar, salt, and fat (eat least of oils/sugar/salt at pyramid top).

60. The food-pyramid base (eat most) is:

(A) fats and oils
(B) sugar
(C) salt
(D) grains

Correct Answer: D

Explanation: Rice, bread, noodles, cereal — so “grains” is the matching option.

61. For teenagers 12–17, grains suggested are about:

(A) 4–6 bowls
(B) 1 teaspoon of oil only as grains
(C) 200–300 g of oil
(D) zero fluids

Correct Answer: A

Explanation: For teenagers 12–17, grains suggested are about 4–6 bowls.

62. Teen vegetables: at least 3 servings; fruits at least:

(A) zero
(B) 2 servings
(C) 20 bowls
(D) only oils

Correct Answer: B

Explanation: Produce targets — so "2 servings" is the matching option.

63. Teen meat/fish/egg/alternatives: about:

(A) 2 servings of oil only
(B) 6–8 bowls of sugar
(C) 200–300 g
(D) 1 grain of salt

Correct Answer: C

Explanation: Protein foods — so "200–300 g" is the matching option.

64. Teen milk and alternatives: about:

(A) zero always
(B) 55% of diet as milk only
(C) 9 kcal/g as the serving unit
(D) 2 servings

Correct Answer: D

Explanation: Dairy or substitutes — so "2 servings" is the matching option.

65. Fluid for teens and adults: about:

(A) 6–8 glasses
(B) 1 drop
(C) 55 bowls
(D) only soda as required

Correct Answer: A

Explanation: Water intake — so "6–8 glasses" is the matching option.

66. Malnutrition develops when the body is deprived of vitamins, minerals, and other nutrients — it includes people who are undernourished or:

(A) only dehydrated from distilled water uniquely
(B) overnourished
(C) only athletes eating carbs
(D) only people who drink 8 glasses of water

Correct Answer: B

Explanation: Too little or too much/wrong balance — so "overnourished" is the matching option.

67. Marasmus is severe undernutrition from deficiency of:

(A) only vitamin K
(B) only DNA
(C) all macronutrients (carb, protein, fat)
(D) only fibre

Correct Answer: C

Explanation: Starvation wasting — so "all macronutrients (carb, protein, fat)" is the matching option.

68. High calorie-density foods raise risk of:

(A) marasmus always
(B) higher dissolved oxygen in lakes
(C) blue $CuSO_4$

(D) weight gain and obesity

Correct Answer: D

Explanation: Energy-dense snacks — so "weight gain and obesity" is the matching option.

69. Low calorie-density foods tend to provide less fat and more:

(A) water and fibre
(B) pure oil
(C) pure sugar
(D) cholesterol only

Correct Answer: A

Explanation: They fill with fewer calories — so "water and fibre" is the matching option.

70. Cheese, butter, and oil are rich in:

(A) starch as the main nutrient
(B) fats
(C) cellulose
(D) DNA only

Correct Answer: B

Explanation: Lipid foods — so "fats" is the matching option.

71. Potatoes, cereals, beans, pulses, and oats are rich in:

(A) only cholesterol
(B) only vitamin D fish oils
(C) carbohydrates
(D) only nucleic acids

Correct Answer: C

Explanation: Starchy staples — so "carbohydrates" is the matching option.

72. The bond between amino acids is a:

(A) ionic Na–Cl bond as the protein link
(B) glycosidic bond only
(C) hydrogen bond as the covalent link
(D) peptide bond

Correct Answer: D

Explanation: Amide link in proteins — so "peptide bond" is the matching option.

73. Major function of dietary carbohydrates emphasised is:

(A) energy (not mainly body defence or hormones)
(B) storing genes
(C) building cell membranes as the primary carb job
(D) carrying oxygen as haemoglobin

Correct Answer: A

Explanation: Fuel — so "energy (not mainly body defence or hormones)" is the matching option.

74. Constipation is not typically listed as a protein-deficiency disorder in the review trap; protein lack more clearly causes weight loss, muscle fatigue, and:

(A) extra starch energy
(B) loss of muscle strength
(C) higher sucrose
(D) more DNA

Correct Answer: B

Explanation: Tissue protein is lost — so "loss of muscle strength" is the matching option.

75. Starch/carbohydrate foods are important because they:

(A) make bones from calcium as the carb itself
(B) always prevent overweight automatically

(C) give you energy
(D) are only easy to cook

Correct Answer: C

Explanation: Energy macronutrient — so "give you energy" is the matching option.

76. Meat, fish, and alternatives provide important:

(A) cellulose as the main nutrient
(B) ozone
(C) argon
(D) protein

Correct Answer: D

Explanation: Tissue-building nutrient — so "protein" is the matching option.

77. The nutrient that builds, maintains, and repairs tissues and cells is:

(A) protein
(B) table sugar only
(C) pure oil only
(D) pure water only

Correct Answer: A

Explanation: Amino-acid construction — so "protein" is the matching option.

78. Anaemia in the chapter's diet question is linked to lack of:

(A) only water
(B) protein (among the given nutrient classes)
(C) only lipids as the only listed cause
(D) only carbohydrate as the only listed cause

Correct Answer: B

Explanation: Anaemia in the chapter's diet question is linked to lack of protein (among the given nutrient classes).

79. Most body cholesterol is produced by the:

(A) lungs as the cholesterol organ
(B) catalytic converter
(C) liver
(D) ozone layer

Correct Answer: C

Explanation: Most body cholesterol is produced by the liver.

80. Food-plate groups named include grains, vegetables, fruits, oils, meats, and:

(A) noble gases
(B) alkanes
(C) NOx
(D) dairy

Correct Answer: D

Explanation: Everyday food groups — so "dairy" is the matching option.

B. Less Important / Secondary Topics

81. Dietary fibre is mentioned alongside the six nutrients as aiding a:

(A) healthy eating pattern
(B) photochemical smog
(C) cracking process
(D) CuSO4 test

Correct Answer: A

Explanation: Plant material not fully digested — so "healthy eating pattern" is the matching option.

82. Figure "healthy diet" contrasts a green apple (good choice) with a:

(A) bowl of vegetables marked bad
(B) doughnut marked as a poor everyday choice
(C) glass of water marked bad
(D) grain bowl marked bad

Correct Answer: B

Explanation: Energy-dense sugary food vs fruit — so "doughnut marked as a poor everyday choice" is the matching option.

83. Benefits of carbohydrates in the potato diagram include energy, mood, sleep, fibre, and help for:

(A) making PVC
(B) acid rain control
(C) athletes
(D) Paris Agreement text

Correct Answer: C

Explanation: Training fuel — so "athletes" is the matching option.

84. Carbs can be converted in metabolism toward fats and:

(A) argon
(B) platinum
(C) SO2
(D) amino acids (as stated)

Correct Answer: D

Explanation: Interconversion of fuels — so "amino acids (as stated)" is the matching option.

85. Soya is highlighted as a major plant protein that contains:

(A) very little fat (as stated)
(B) only cholesterol
(C) only DNA
(D) only sucrose

Correct Answer: A

Explanation: Lean plant protein source — so "very little fat (as stated)" is the matching option.

86. Proteins are described as colourless and usually:

(A) blue like hydrated CuSO4
(B) tasteless
(C) reddish-brown like NO2
(D) gaseous like methane

Correct Answer: B

Explanation: Proteins are described as colourless and usually tasteless.

87. Many hormones are:

(A) alkanes
(B) noble gases
(C) proteins (chemical messengers)
(D) N95 fibres

Correct Answer: C

Explanation: Signalling molecules — so "proteins (chemical messengers)" is the matching option.

88. Lipids are insoluble in water but soluble in:

(A) only HClO
(B) only liquid oxygen
(C) only molten NaCl
(D) chloroform (and similar solvents)

Correct Answer: D

Explanation: Organic solvents — so "chloroform (and similar solvents)" is the matching option.

89. Vitamin A foods illustrated include orange vegetables such as:

(A) carrots
(B) only fish oil as the only A source pictured idea
(C) only broccoli as A not K
(D) only eggs as A not D

Correct Answer: A

Explanation: Carotenoid foods — so "carrots" is the matching option.

90. Vitamin D foods illustrated include eggs, mushrooms, and:

(A) only sugar
(B) fish/seafood
(C) only soda
(D) only white bread

Correct Answer: B

Explanation: D-rich examples — so "fish/seafood" is the matching option.

91. Vitamin K foods include dark leafy greens and:

(A) only butter
(B) only cheese
(C) broccoli
(D) only oil bottles

Correct Answer: C

Explanation: K-rich greens — so "broccoli" is the matching option.

92. Vitamin E foods include avocado and:

(A) only skim milk as the E picture
(B) only rice
(C) only salt
(D) nuts/seeds

Correct Answer: D

Explanation: E-rich fats — so "nuts/seeds" is the matching option.

93. Lesch-Nyhan syndrome is listed under nucleic-acid-related:

(A) rare congenital brain/behaviour disorder
(B) a type of starch
(C) a lipid vitamin
(D) an alkane fuel

Correct Answer: A

Explanation: Genetic example — so "rare congenital brain/behaviour disorder" is the matching option.

94. Ataxia telangiectasia (Louis-Bar) affects childhood:

(A) only hair colour
(B) motor control, muscle movement, and speech
(C) only AQI
(D) only boiling point of water

Correct Answer: B

Explanation: Neurological genetic disorder named — so "motor control, muscle movement, and speech" is the matching option.

95. Adults' grain suggestion in the table is a wider range:

(A) 4–6 only as the adult column
(B) 200–300 g grains
(C) 3–8 bowls
(D) 2 servings of grains as milk

Correct Answer: C

Explanation: Age-group difference — so "3–8 bowls" is the matching option.

96. Adults' meat/fish/egg range is about:

(A) 200–300 g as the adult column copy of teens
(B) 2 servings identical to teen milk only
(C) 6–8 glasses of meat
(D) 250–400 g

Correct Answer: D

Explanation: Adults' meat/fish/egg range is about 250–400 g.

97. Adults' milk/alternatives are about:

(A) 1–2 servings
(B) exactly 2 like teens only
(C) zero
(D) 55% of energy

Correct Answer: A

Explanation: A bit less dairy than teens — so "1–2 servings" is the matching option.

98. Calorie density also affects:

(A) the formula of methane
(B) hunger (low-density foods more filling per calorie)
(C) NOx formation in engines
(D) pH of acid rain

Correct Answer: B

Explanation: Satiety — so "hunger (low-density foods more filling per calorie)" is the matching option.

99. Junk-food-only diets (fries, burgers, pizza) lack balance of:

(A) all energy so you cannot gain weight
(B) all water so you never need fluid
(C) vitamins, fibre, and appropriate macros
(D) all protein so they are identical to soya

Correct Answer: C

Explanation: Junk-food-only diets (fries, burgers, pizza) lack balance of vitamins, fibre, and appropriate macros.

100. Athletes in a marathon need carbohydrates because they:

(A) store the genome
(B) build PVC pipes
(C) remove SO2
(D) supply readily oxidised fuel for muscle and brain

Correct Answer: D

Explanation: Endurance fuel — so "supply readily oxidised fuel for muscle and brain" is the matching option.

101. Fat percentage is the lowest of the three macros in the pie because fats are:

(A) energy-dense (9 kcal/g) so a smaller mass share still supplies much energy
(B) useless
(C) identical to water
(D) the only source of glucose for brain

Correct Answer: A

Explanation: 9 vs 4 kcal/g — so "energy-dense (9 kcal/g) so a smaller mass share still supplies much energy" is the matching option.

102. Living organisms need food for energy, growth/repair, and:

(A) making atmospheric N2
(B) regulating processes (nutrients as molecules)
(C) catalytic converters
(D) cracking oil only

Correct Answer: B

Explanation: Three classic reasons — so "regulating processes (nutrients as molecules)" is the matching option.

103. A growing child needs foods rich in quality protein and energy such as:

(A) only sugar sweets
(B) only oils
(C) milk/eggs/legumes plus staple carbs (examples)
(D) only salt

Correct Answer: C

Explanation: Growth tissues plus fuel — so "milk/eggs/legumes plus staple carbs (examples)" is the matching option.

104. Nucleic acids' sources are cellular foods; their function is:

(A) primary 9 kcal/g fuel like fat
(B) coagulation with alum
(C) hydration of CuSO4
(D) genetic information and protein synthesis support

Correct Answer: D

Explanation: Information, not bulk calories — so "genetic information and protein synthesis support" is the matching option.

105. A meal-plan project should identify each item's:

(A) food group
(B) alkane carbon number
(C) AQI colour
(D) Paris °C target

Correct Answer: A

Explanation: A meal-plan project should identify each item's food group.

106. Weak immune systems in children lacking a major nutrient in one review item point to:

(A) only table sugar
(B) proteins (amino acids/proteins options)
(C) only water
(D) only fibre as the immune protein

Correct Answer: B

Explanation: Antibodies and immune proteins — so "proteins (amino acids/proteins options)" is the matching option.

107. Triglycerides, like cholesterol, are influenced by:

(A) only the ozone layer
(B) only catalytic rhodium
(C) lifestyle and diet
(D) only lightning NOx

Correct Answer: C

Explanation: Liver output plus food — so "lifestyle and diet" is the matching option.

108. Water as a nutrient is required in adequate amounts even though it yields:

(A) 9 kcal/g
(B) 4 kcal/g
(C) 55% of energy
(D) no dietary kilocalories like macros

Correct Answer: D

Explanation: Hydration, not fuel — so "no dietary kilocalories like macros" is the matching option.