100 Facts Biology

1. What is a eukaryote?
   A plant or animal cell that have a membrane and a nucleus
2. What five things do most animal cells contain?
   Nucleus, cytoplasm, cell membrane, ribosomes, mitochondria
3. What cell structures are found only in plant cells?
   Cell wall, vacuole, chloroplasts
4. What is the function of the ribosomes?
   The site of protein synthesis.
5. How is a sperm cell specialised?
   A tail to swim to egg, lots of mitochondria to release energy
6. What is a stem cell?
   An undifferentiated cell which can be made to differentiate to form different types of cells
7. What is the equation for microscopy?
   Magnification = size of image / size of real object
8. What is diffusion?
   Movement of particles from an area of high concentration to low concentration
9. What factors affect the rate of diffusion?
   Concentration/temperature/surface area
10. What is osmosis?
    Movement of water from a dilute area to a concentrated area
11. What is active transport?
    Movement of substances from an area of low concentration to high concentration, against the concentration gradient
12. What is a main difference between diffusion and active transport?
    Active transport requires energy whereas diffusion does not.
13. The principles of organisation are:
    cell – tissue – organ – organ system
14. What are carbohydrates used in the body for? (What is their function?)
    Provide energy
15. Give an example of a food that is high in carbohydrates.
    Pasta/bread
16. What is the name of the enzyme that breaks down carbohydrates?
    Carbohydrase

17. What are lipids made from?
    Fatty acids and glycerol
18. What are proteins used in the body for? (What is their function?)
    Growth and repair
19. Give an example of a food that is high in protein.
    Eggs or meat
20. What percentage of your cells is water?
    70%
21. What does a diet high in fibre prevent?
    Constipation
22. What are good sources of vitamins?
    Fruits and vegetables
23. Which vitamin and mineral are needed for healthy teeth and bones?
    Vitamin D and Calcium
24. What equipment do you use to crush the food sample to prepare a food solution?
    Pestle and mortar
25. What chemical do you use to test for starch?
    Iodine
26. A positive test for starch is when the colour changes from orange –brown to which colour?
    Blue black
27. What chemical do you use to tests for lipids (fats) in a solution?
    Ethanol
28. Benedict's solution is a turquoise blue colour; it turns orange red when there is which substance present?
    Glucose
29. Give an example of a simple sugar.
    Glucose
30. How is the liver involved in digestion?
    It produces bile, which helps break down lipids.
31. State the unit that energy in food is measured in.
    Joules (J)
32. What is the scientific term for someone who is extremely overweight?
    Obese
33. Name the 3 types of blood vessel in the human body.
    Vein, artery and capillaries.

34. What is the function of red blood cells?
    To carry oxygen around the body. They contain haemoglobin.
35. What is health?
    A state of physical and mental well-being
36. What two things can diseases be classified as?
    Communicable and non-communicable
37. What are some risk factors for increased rate of disease?
    Aspects of a persons lifestyle or substances in the persons body or environment
38. What is cancer?
    Changes in cells that lead to uncontrolled growth and division
39. What is a benign tumour?
    Growths of abnormal cells that are contained to one area and do not invade other parts of the body
40. What is a malignant tumour?
    A cancer. Invade neighbouring tissues and spread to different parts of the body
41. How do cancers spread?
    In the blood
42. Name at least 2 plant tissues.
    Epidermal tissues/palisade mesophyll/spongy mesophyll/xylem/phloem/meristem
43. How are root hair cells adapted for their function?
    Large surface area to take up water by osmosis and minerals by active transport
44. What can diseases be caused by?
    Viruses, bacteria, protists and fungi
45. What is a pathogen?
    Microorganisms that cause infectious diseases
46. Why do viruses cause cell damage?
    Because they live and reproduce inside living cells
47. Give an example of a viral disease.
    Measles/HIV/Tobacco mosaic virus
48. Give an example of a bacterial disease.
    Salmonella/Gonorrhoea
49. Give an example of a fungal disease.
    Rose black spot

50. Give an example of a protist disease.
    Pathogens that cause malaria
51. Name the non-specific defence system for the human body.
    Skin, nose, trachea and stomach
52. What happens if a pathogen enters the body?
    The immune system tries to destroy the pathogen
53. What is the role of white blood cells?
    Defend against pathogens
54. What are the three ways white blood cells defend?
    Phagocytosis, antibodies and antitoxins
55. What do vaccinations do?
    Prevent illness in an individual
56. What is an antibiotic?
    Medicines that help cure bacterial diseases
57. What are painkillers?
    Treat the symptoms of disease but do not kill pathogens
58. Why do new drugs need to be tested before they are used?
    To ensure they're safe and effective
59. What is the photosynthesis equation?

$$\text{Carbon dioxide + water} \xrightarrow[\text{Chlorophyll}]{\text{Light}} \text{Glucose + Oxygen}$$

60. What factors can effect the rate of photosynthesis?
    Temperature, light intensity, carbon dioxide concentration and amount of chlorophyll
61. What is the use of glucose from photosynthesis?
    Respiration, conversion to starch, production of fat and oil, production of cellulose, production of amino acids.
62. What is the difference between aerobic and anaerobic respiration?
    Aerobic uses oxygen where as anaerobic respiration does not.
63. What is metabolism?
    Sum of all the reactions in a cell or body.
64. What is the equation for aerobic respiration?
    Glucose + oxygen -> carbon dioxide + Water (energy released)
65. What is homeostasis?
    Maintains optimal conditions for enzyme action and all cell functions

66. What is the purpose of the nervous system?
    To enable humans to react to their surroundings and co-ordinate behaviour
67. What makes up the CNS?
    Brain and spinal cord
68. What is a hormone?
    A chemical
69. What does the pancreas do?
    Controls levels of blood sugar
70. What disorder is caused by the lack of Insulin produced by the pancreas?
    Diabetes
71. What is the main female hormone produced in the ovary?
    Oestrogen
72. What is the role of testosterone?
    Stimulates sperm production
73. How can you control fertility?
    Hormonal and non-hormonal methods
74. When is adrenaline produced?
    In times of fear or stress
75. What is a gamete?
    Sex cells
76. What is sexual reproduction?
    Fusing of male and female gametes
77. What is genetic material made from?
    DNA
78. What shape is DNA?
    Double helix
79. What is a gene?
    A small section of DNA on a chromosome
80. What is the genome?
    Genome of an organism is the entire genetic material of that organism
81. How many pairs of chromosomes are in an ordinary human body?
    23
82. What are the sex chromosomes that control gender?
    XX = Female XY = Male
83. What is variation?
    Differences in the characteristics of individuals in a population

84. What is evolution?
    A change in inherited characteristics of a population over time
85. What is selective breeding?
    Breeding plants and animals to get specific characteristics
86. Why might you genetically engineer plant crops?
    To make them resistant to attack and increase yield
87. Name a concern of GM crops
    May effect the populations of wild flowers and insects
88. What is a fossil?
    Remains of organisms from millions of years ago, they're found in rocks
89. When do extinctions occur?
    When there are no individuals or a species still alive
90. What is an ecosystem?
    The interaction of a community of living organisms with non-living parts of their environment
91. Name 2 abiotic factors.
    Light intensity/temperature/moisture levels/soil pH/Wind intensity/carbon dioxide levels (plants)/oxygen levels (animals)
92. Name 2 biotic factors.
    Availability of food/new predators/new pathogens/species competition
93. How is a Polar Bear adapted to its environment?
    Thick fur to keep warm/small ears to reduce heat loss/large paws to spread load on snow and ice/thick layer of fat to store energy
94. What is a predator?
    Consumers that kill and eat other animals
95. What happens to all materials in the living world?
    Recycled to provide building blocks for future organisms
96. What is the water cycle?
    Water continuously being evaporated and precipitated
97. What is biodiversity?
    Variety of all the different species of organisms on earth
98. Where can pollution occur?
    Water/air/land
99. How are humans reducing the amount of land available for other animals?
    Building/quarrying/farming/dumping waste
100. What is contributing to global warming?
    Levels of carbon dioxide and methane