

B4 Quick Revision Questions

H = Higher tier only

SS = Separate science only

Question 1

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- What are the major causes of physical and mental ill health

Answer 1

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- Disease
- Diet
- Stress
- Life situations

Question 2

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- Give two examples of poor nutrition that can contribute to the risk of developing some diseases

Answer 2

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- High fat or sugar rich diet – high blood pressure, depression, heart disease and strokes, eating disorders and type-2 diabetes
- Low calcium diet – osteoporosis
- Red meat and processed meat – bowel cancer risk

Question 3

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- Give three factors that can be involved in liver disease

Answer 3

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- Alcohol
- Diet/obesity
- Genetics
- Drugs
- Viral infection

Question 4

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- Give two risk factors that increase the chance of an individual having a disease

Answer 4

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- Diet
- Lack of exercise
- Type of workplace
- Sexual habits
- Smoking
- Drinking
- Drug-taking

Question 5

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- What is a causal mechanism

Answer 5

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- One risk factor that may be partly responsible for a disease

Question 6

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- What causes a tumour and what are the two types of tumour

Answer 6

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- Cell division becomes uncontrolled
- Benign – harmless
- Malignant - cancerous

Question 7

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- What is a carcinogen?
- Give two examples

Answer 7

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- Substances or viruses that increase the risk of cancer
- Tar in tobacco smoke
- Asbestos
- Human papilloma viruses (HPV)

Question 8

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- Give two factors that will reduce the risk of developing cancer

Answer 8

.... of 50

- Not smoking
- Staying out of the sun and using sunscreen
- Drinking alcohol in moderation
- Healthy diet and exercise

Question 9

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- What is a correlation?

Answer 9

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- An association between two sets of random data

Question 10

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- What are pathogens? Give two examples

Answer 10

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- Pathogens are microorganisms that cause infectious diseases
- Viruses e.g. measles
- Bacteria e.g. salmonella
- Protists e.g. cause malaria
- Fungi e.g. rose black spot

Question 11

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- Give two measures used to prevent or reduce the spread of diseases

Answer 11

.... of 50

- Simple hygiene e.g. cover mouth when coughing
- Isolation of infected individuals
- Destroying vectors e.g. mosquitoes
- Vaccination

Question 12

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- Give three symptoms of Ebola haemorrhagic fever (EHF)

Answer 12

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- Fever
- Headache
- Diarrhoea
- Nausea
- Rashes

Question 13

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- Describe a virus

Answer 13

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- Small pathogens
- Not living cells
- Have a strand of genetic material in a protein coat
- Genetic material replicates in host cells to make new viruses which are then released

Question 14

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- How does measles spread?

Answer 14

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- Droplet infection
- E.g. talking, coughing, sneezing
- Droplets inhaled

Question 15

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- Give two symptoms of salmonella poisoning

Answer 15

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- Fever
- Abdominal cramps
- Vomiting
- Diarrhoea

Question 16

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- How can the spread of gonorrhoea be controlled?

Answer 16

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- Antibiotics
- Barrier method of contraception

Question 17

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- What are the stages of infection for a pathogen

Answer 17

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Enters organism

Reproduces rapidly

Incubation period

Make harmful toxins

Symptoms

Question 18

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- What are symptoms of rose black spot

Answer 18

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- Black or purple spots on the upper surface of leaves
- Spots spread rapidly and the string like fungus can be seen
- Small, black scab-like spots develop on stems

Question 19

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- Give two treatments of fungal disease

Answer 19

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- Remove infected dropped leaves from the soil and burn them
- Prune shoots in spring and burn cuttings
- Don't compost infected leaves and stems
- Treat infections with fungicides
- Put manure or mulch around the plants

Question 20

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- Give three symptoms of malaria

Answer 20

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- Recurrent episodes of fever
- Sweats and chills
- Muscle pains
- Headaches
- Diarrhoea
- Cough

Question 21

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- How is malaria spread

Answer 21

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- Female mosquito feeds on person with malaria and picks up plasmodium
- Mosquito bites uninfected person
- Plasmodium injected into blood, invades RBCs
- Infected cells burst, releasing plasmodium
- Symptoms of malaria

Question 22

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- How do white blood cells defend the body?

Answer 22

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- Ingest pathogens (phagocytosis)
- Produce antibodies
- Produce antitoxins

Question 23

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- Describe the stages of phagocytosis

Answer 23

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- A phagocyte moves towards a bacterium
- The phagocyte pushes a sleeve of cytoplasm outwards to surround the bacterium
- The bacterium is now enclosed in a vacuole inside the cell
- The bacterium is killed and digested by enzymes

Question 24

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- What do antitoxins do?

Answer 24

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- Combine with the toxin to make a safe chemical

Question 25

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- Give two roles of antibodies

Answer 25

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- Cause cell lysis (the pathogens burst)
- Bind to the pathogens and destroy them
- Cover the pathogens, sticking them together. Phagocytes then ingest them

Question 26

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- Define the term drug

Answer 26

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- Any chemical that alters how the body works

Question 27

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- What do antibiotics do?

Answer 27

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- They interfere with the pathogen's metabolism e.g. processes that make bacterial cell walls

Question 28

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- What are the two natural drugs many painkillers are based on? And where are they found

Answer 28

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- Aspirin – willow bark
- Opiates - poppies

Question 29

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- What is a vaccination?

Answer 29

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- The introduction of a small quantity of an inactive or dead form of a pathogen into the body to protect us from disease

Question 30

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- What do vaccinations do?

- Vaccination given
- Lymphocytes produce antibodies against the inactive or dead pathogens
- Lymphocytes remember the shape of the antigen
- Live pathogens enter the body and the lymphocytes recognise them and respond more quickly

Question 31

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- Why are drugs tested and trialled?

Answer 31

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- To test:
- Effectiveness
- Safety
- Stability

Question 32

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- Give the two stages in drug development

Answer 32

.... of 50

- Preclinical testing in labs
- Clinical trials with low doses of drug and healthy volunteers

Question 33

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- Describe a double blind trial

Answer 33

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- When patients are allocated randomly to groups, so that doctors and patients do not know, until the trial is complete

Question 34

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- Define monoclonal antibody

Answer 34

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- Antibodies that come from cells that are cloned from one cell

Question 35

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- Give three side effects of using mABs in humans?

Answer 35

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SS

- Chills or fevers
- Itchy rashes
- Nausea
- Breathlessness or wheezing
- Headaches
- Changes in blood pressure

Question 36

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- What are the causes of plant diseases?

Answer 36

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SS

- Viral, bacterial and fungal pathogens
- Pests e.g. insects

Question 37

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- What do plants use nitrate for? And what happens if they are deficient in nitrate?

Answer 37

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- Needed to make amino acids, which are used in protein synthesis or growth
- Deficiency = stunted growth

Question 38

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- Give two control measures to prevent TMV

Answer 38

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SS

- Removal of weeds
- Removal of infected plants
- Disinfection of all tools

Question 39

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- How can we identify plant diseases?

Answer 39

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- Reference to a gardening manual or website
- Taking infected plants to a lab to identify the pathogen
- Using testing kits that contain mABs

Question 40

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- What are the physical defences plants have?

Answer 40

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- Layers of dead cells around stems
- Tough waxy leaf cuticles
- Cellulose cell walls

Question 41

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- What are the mechanical defences plants have?

Answer 41

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SS

- Thorns and hairs
- Drooping or curling of leaves when touched
- Mimicry

Question 42

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SS

- What are the chemical defences plants have?

Answer 42

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- Production of antibacterial chemicals
- Production of poisons

Question 43

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SS

- Why do scientists use samples for investigation?

Answer 43

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SS

- It is impossible to study every individual in a population

Question 44

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SS

- Give an advantage of using mABs to treat cancer

Answer 44

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- Healthy body cells are unaffected

Question 45

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- How is salmonella spread?

Answer 45

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- Ingesting food that is contaminated with salmonella bacteria
- Preparing food in unhygienic conditions e.g. using contaminated knives or chopping boards

Question 46

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- Give two examples of viral diseases

Answer 46

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- Measles
- HIV
- Tobacco mosaic virus (TMV)

Question 47

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- How is HIV under control?

Answer 47

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- Antiretroviral drugs
- Stops the virus entering the lymph nodes

Question 48

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- Give three prevention measures of Ebola haemorrhagic fever

Answer 48

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- Reduce the risk of contact with infected animals
- Wearing protective clothing
- Washing hands frequently
- Isolation of infected people and safe burials of the dead
- Travel restrictions

Question 49

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- What protist causes malaria?

Answer 49

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- Plasmodium

Question 50

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- Give two of the defences of pathogens are bodies have

Answer 50

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- Skin – barrier and antimicrobial secretions
- Nose – traps particles containing pathogens
- Trachea and bronchi – secrete mucus
- Stomach – produces acid
- Platelets – start the clotting process at wound sites