

B7 Quick Revision Questions

H = Higher tier only

SS = Separate science only

Question 1

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- What type of variation is due to differences that arise during development ?

Answer 1

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- Environmental variation

Question 2

.... of 50

- What 3 processes lead to genetic variation?

Answer 2

.... of 50

- mutation
- Sexual reproduction
- meiosis

Question 3

.... of 50

- What did Jean-Baptiste Lamarck believe?

Answer 3

.... of 50

- Organisms survived of adapting to their environment by body parts developing during an organism's life. These features were then passed on to the next generation.

Question 4

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- What is natural selection?

Answer 4

.... of 50

- Organisms best suited to the conditions in an environment will survive. If these desirable characteristics are genetic then they will be passed on to their offspring.

Question 5

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- What evidence led to Darwin's theory of evolution?

Answer 5

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- Species on the Galapagos Islands were similar to those from mainland South America but not the same.

Question 6

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- How are fossils formed?

- Organism dies and sinks to the bottom of the water
- Organism becomes covered in sediment.
- The soft parts of the organisms decay and the sediment around turns to rock
- An exchange of minerals happens between the skeleton and the water turning the skeleton into rock (fossilised)

Question 7

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- What process can be used to find the ages of rock layers?

Answer 7

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- Radiometric dating

Question 8

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- Why is the fossil record incomplete?

Answer 8

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- conditions not always right for fossils formation
- Fossils destroyed by geological activity
- Early life forms often soft bodies

Question 9

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- What is warning colouration?

Answer 9

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- Warning colours on prey that deter predators

Question 10

.... of 50 **SS**

- What is mimicry?

Answer 10

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- Plants and animals have evolved to mimic other distasteful organisms to predators

Question 11

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- What is a new species?

Answer 11

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- Organisms from each species are no longer able to breed successfully to produce fertile offspring

Question 12

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- How was the population of peppered moths linked to pollution?

Answer 12

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- Polluted areas had blackened bark on trees.
- The mutant black peppered moth was camouflaged on these trees so less likely to get eaten by birds, unlike the peppered moth which was visible.

Question 13

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- Why can bacteria evolve quickly?

Answer 13

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- It has a high reproduction rate

Question 14

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- Why are some bacteria resistant to antibiotics?

Answer 14

.... of 50

- A mutation in genes of pathogenic bacteria produces a new strain which is resistant to antibiotics.
- As the bacteria reproduces this gene is passed on through the population

Question 15

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- What is AMR?

Answer 15

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- Anti Microbial Resistance

Question 16

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- Why is antibiotic resistance happening at a quicker rate than it should?

Answer 16

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- Inappropriately prescribed antibiotics (for minor viral infections)
- Antibiotic courses not being completed by the patient

Question 17

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- What is selective breeding?

Answer 17

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- Animal breeder selects animals with the desired characteristics and breeds them.
- Offspring with desired characteristics are selected and bred to produce offspring.
- Breeding programme continues until the population all have the desired characteristics.

Question 18

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- What is a problem with inbreeding?

Answer 18

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- The population has a limited gene pool
- Incidence of rare disease alleles will increase
- High risk of birth defects
- Prone to disease

Question 19

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- What is a disadvantage of crops being genetically uniform?

Answer 19

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- Whole crop will be wiped out if there is an environmental change

Question 20

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- How is a plant selectively bred?

Answer 20

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- Pollen is transferred from the flower of one plant to the flower of another
- The plant is prevented from self pollination.
- Seeds are collected and grown,
- Plants exposed to fungal disease, resistant plants selected and pollinated
- Plants grown in field, resistant plants selected and pollinated,
- Plants grown on farm in large scale

Question 21

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- What is GMO?

Answer 21

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- Genetically Modified Organism

Question 22

.... of 50 **H**

- Describe the genetic engineering technique to produce insulin

- Enzymes are used to extract the insulin gene from its DNA in the pancreas
- The gene is inserted in to a plasmid from bacteria
- The plasmid is put back in to the bacteria
- The genetically modified bacteria is cultured (allowed to reproduce)
- The GM bacteria is grown in fermenters and the insulin product extracted.

Question 22

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- Why is a genetic marker gene used?

Answer 22

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- So organisms that have not taken the foreign gene can be easily screened out

Question 23

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- What is gene therapy?

Answer 23

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- A treatment to overcome inherited disorders
- Removing defective genes from human cells and introducing new functioning genes through a viral vector.

Question 24

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- What is genome editing?

Answer 24

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- Replacing or removing sections of DNA from the genome using molecular scissors

Question 25

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- What is a tissue culture?

Answer 25

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- A small group of organisms

Question 26

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- Name 2 methods of producing new identical plants

Answer 26

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- Tissue culture
- Cuttings

Question 27

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- Describe adult cell cloning

Answer 27

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- Remove nucleus from an egg cell
- Insert nucleus from a body cell in to the egg cell
- Electric shock to stimulate egg cell division
- Cell divides by meiosis to form embryo
- Embryo implanted in to adult female
- Clone of the animal from the body cell born

Question 28

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- What is the name of the classification system devised by Linnaeus?

Answer 28

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- Binomial system

Question 29

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- Name the 7 groups in the binomial system

Answer 30

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- Kingdom, Phylum, Class, Order, Family, Genus, Species

Question 31

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- Why is it thought there was a mass extinction 66 million years ago?

Answer 31

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- Asteroid impact threw up dirt blocking out sunlight
- Plants declined
- Herbivores declined
- Carnivore that were dependent on the herbivores declined

Question 32

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- When new organisms are introduced to a new location how may they cause extinction of a species?

Answer 32

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- New predators
- Compete with native organisms for food
- Introduce new diseases

Question 33

.... of 50

- How may humans be contributing to a sixth mass extinction?

Answer 33

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- Transformation of the landscape
- Over exploitation of the species
- Pollution
- Introduction of alien species

Question 34

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- Name two characteristics which are a combination of both environmental and genetic

Answer 34

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- height
- Skin colour
- Weight
- Sporting achievements

Question 35

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- A crucial factor of evolution

Answer 36

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- Variation within species

Question 37

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- What is the phenotype?

Answer 37

.... of 50

- An organisms' characteristics

Question 38

.... of 50

- What variation features could be advantageous to an animal?

Answer 38

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- better able to catch food
- resistance to disease
- Attracting a mate

Question 39

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- Why can fossil bacteria be used to distinguish fossils?

Answer 39

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- They leave traces of unique chemicals from their cell membranes