Q1 (1 mark)

- Passing of genetic information from parents to offspring (one generation to the next)

Q2 (1 mark)

- A section of DNA that controls a characteristic

Q3 (1 mark)

- Genetic material found in cells

Q4 (1 mark)

- Structure that carries DNA and genes

Q5 (2 marks)
Any two:

- Double helix
- Base pairs
- DNA strands

Q6 (2 marks)
Any two:

- Watson
- Crick
- Franklin
- Wilkins

Q7 (2 marks)

Group of organisms that can reproduce (1) to form fertile offspring (1)

Q8 (2 marks)
Chromosomes are made of DNA, and genes are sections of DNA that control characteristics (1)

Rosalind Franklin contributed to the discovery of the structure of DNA (along with Watson, Crick, and Wilkins (1)

Q9 (2 marks)
Any two:

- Height
- Mass
- Length
- Hand span

Q10 (2 marks)
Any two:

- Blood group
- Eye colour
- Sex
- Tongue rolling

Q11 (2 marks)
Any two:

- Food
- Water
- Space
- Light

Q12 (3 marks)

- Genes passed from parents (1)
- Carried on chromosomes (1)
- DNA controls characteristics (1)

Q13 (3 marks)

- DNA contains genetic information (1)
- Genes are sections of DNA (1)
- Genes are found on chromosomes (1)

Q14 (2 marks)

- Continuous has a range (1)
- Discontinuous has categories (1)

Q15 (3 marks)

- Gene banks are used to store genetic material such as seeds, eggs, or sperm from different species. (1)
- They preserve genetic diversity so that species can be protected from extinction. (1)
- They can also be used in the future for breeding programmes to restore populations or improve crops. (1)

Q16 (3 marks)

- Some individuals have better traits (1)
- Better adapted to obtain resources (1)
- Survive and reproduce more (1)

Q17 (2 marks)

- Environment changes reduce resources (1)
- Some organisms cannot adapt (1)

Q18 (4 marks)

Four from:

- Measurements of hand span are taken from different students (1)
- Results will show differences between individuals (1)
- Data can be recorded in a table or measured in cm (1)
- Results can be plotted on a graph to show variation (1)
- Shows continuous variation because values form a range (1)

Q19 (4 marks)

- Variation exists (1)
- Some traits are advantageous (1)
- Better adapted survive (1)
- Reproduce and pass on genes (1)

Q20 (4 marks)

Four from:

- Environment provides conditions for survival (1)
- Change can reduces survival chances (1)
- Some organisms cannot adapt (1)
- Population may decrease (1)
- Could lead to extinction (1)

Q21 (4 marks)

- Variation exists in population (1)
- Some traits are beneficial (1)
- Better adapted survive (1)
- Reproduce more successfully (1)

Q22 (6 marks)
Level 1 (1–2): basic statements
Level 2 (3–4): some links explained
Level 3 (5–6): clear full explanation

Expected content: DNA carries genetic information, genes are sections of DNA, chromosomes carry DNA; Watson and Crick proposed model, Franklin provided X-ray evidence, Wilkins contributed data.

Example answer:
"Genes are sections of DNA found on chromosomes. DNA carries genetic information that is passed from parents to offspring. Watson and Crick developed the double helix model of DNA. Rosalind Franklin produced X-ray images that helped show its structure, and Maurice Wilkins contributed additional evidence supporting the model."

Q23 (6 marks)
Level 1 (1–2): basic natural selection idea
Level 2 (3–4): some explanation of survival
Level 3 (5–6): full evolutionary process

Expected content: variation, survival advantage, reproduction, gene passing, evolution, extinction.

Example answer:
"Natural selection occurs because individuals in a species show variation. Some individuals are better adapted to their environment and survive longer. They reproduce and pass on their genes. Over time this leads to evolution, and if organisms cannot adapt, they may become extinct."

Q24 (6 marks)
Level 1 (1–2): basic biodiversity idea
Level 2 (3–4): some explanation of importance
Level 3 (5–6): full explanation with gene banks

Expected content: biodiversity, ecosystem stability, resources, gene banks, preservation, extinction.

Example answer:
"Biodiversity is the variety of living organisms in an ecosystem. It is important for maintaining stable ecosystems and providing resources such as food and medicine. Gene banks store genetic material such as seeds, sperm and eggs from different species. This allows scientists to breed organisms and increase population numbers to preserve biodiversity and help protect endangered species from extinction."