

Assessment Report

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Level 1 Science 2018

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Part A: Commentary

Candidates with sound examination techniques performed well overall.

Those candidates who attempted all parts of the examination generally achieved good results.

Successful candidates used the scaffolding in the questions to assist their responses. However, for the highest grade candidates are reminded to answer the question rather than focus entirely upon the scaffolding. Many candidates could benefit by practising creating scenarios where they can apply their learnt knowledge to unknown situations to achieve the uppermost grades.

Part B: Report on standards

90940: Demonstrate understanding of aspects of mechanics

Candidates who were awarded **Achievement** commonly:

- interpreted information from a graph, e.g. described in words the motion of objects in a speed time graph
- performed simple calculations by rearranging equations e.g. calculated force, weight and net force
- drew and labelled force arrows on diagrams
- identified the magnitude of horizontal forces when accelerating horizontally
- described that friction slowed the skier
- described how surface area affected sinking of skis.

Candidates whose work was assessed as **Not Achieved** commonly:

- did not describe a journey from a speed time graph
- did not read values from a speed time graph
- were unable to perform simple calculations
- did not correctly label forces
- copied formulae incorrectly or relied on memory to recall formulae rather than using those provided.

Candidates who were awarded **Achievement with Merit** commonly:

- compared the speed and acceleration of both runners
- correctly calculated distance from a speed time graph
- explained that friction caused energy to be transferred into heat
- explained that greater surface area leads to less pressure
- understood that work up the ramp was the same as the height was equal
- calculated power correctly.

Candidates who were awarded **Achievement with Excellence** commonly:

- performed multi-step calculations and included appropriate units

- demonstrated clear links between ideas and consequences, e.g. work up the ramp equal and thus less force which means an increase distance, or more force which means a decrease in distance for same work
- explained a net unbalanced force changes the motion of an object in the direction of the unbalanced force
- calculated speed from gravitational potential energy
- explained more surface area means less pressure for a fixed weight/force.

Standard-specific comments

Candidates generally had a good understanding of most concepts examined. Candidate should use labelled force diagrams to aid explanations and check that calculated answers are sensible. The relationship between work done on different ramps of the same height was poorly understood.

90944: Demonstrate understanding of aspects of acids and bases

Candidates who were awarded **Achievement** commonly:

- described ion formation and electron arrangements
- wrote word equations
- recognised some colours of UI and associated pH values
- described basic particle collision theory.

Candidates whose work was assessed as **Not Achieved** commonly:

- did not describe rates of reaction from a mass time graph
- were unable to name salts
- did not recognise colours of UI and associated pH values
- were unable to describe particle collision theory.

Candidates who were awarded **Achievement with Merit** commonly:

- wrote symbol equations
- linked hydrogen and hydroxide ion concentration to pH and UI colour
- explained the reduced reaction rate over time using collision theory
- linked proton and electron number to ion charge
- related ion formation to the need for a full valence shell or to the groups on the periodic table.

Candidates who were awarded **Achievement with Excellence** commonly:

- wrote balanced symbol equations
- showed a comprehensive understanding of the rate of reaction at each stage and link to the number of reactant particles available
- explained reactions in terms of change in collision rate rather than simply more collisions
- linked hydrogen and hydroxide ion concentration to neutralisation, pH and UI colour
- understood ionic bonding as the transfer of electrons between elements to attain stable valence shells and the ratios of ions contribute to the overall neutrality of molecule.

Standard specific comments

Candidates generally had a good understanding of most concepts examined. Candidates should not use the “swap and drop” method as this caused confusion. The rates of reaction mass and time graph was widely misunderstood.

90948: Demonstrate understanding of biological ideas relating to genetic variation

Candidates who were awarded **Achievement** commonly:

- drew a completed correct Punnet square
- identified the genotypes of dominant phenotype parents from the recessive offspring phenotype
- described a test cross
- described dominant or recessive allele
- described variation and phenotype
- understood resistance allows for better survival.

Candidates whose work was assessed as **Not Achieved** commonly:

- drew a completed but incorrect Punnet square
- described a trait being passed on rather than DNA
- did not describe a test cross
- did not describe dominant or recessive alleles
- did not describe fertilisation.

Candidates who were awarded **Achievement with Merit** commonly:

- understood how to conduct a test cross
- understood only genetic variation can be inherited
- explained genetic variation in relation to either gamete formation or random fertilisation
- linked genetic variation and passing on DNA in populations being beneficial
- understood how a mutation in DNA could affect the phenotype of an organism.

Candidates who were awarded **Achievement with Excellence** commonly:

- comprehensively explained a test cross
- explained genetic variation in relation to both gamete formation and random fertilisation
- comprehensively linked genetic variation to natural selection
- comprehensively linked a DNA mutation to allele, gene and phenotype in context.

Standard specific comments

Candidates generally had a good understanding of most concepts examined. Common issues for candidates included: confused meiosis and fertilisation; were unclear over pure breeding, and found the concept of herbicide resistance challenging.

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Previous years' reports

[2016 \(PDF, 238KB\)](#)

[2017 \(PDF, 238KB\)](#)