

Grade 9 Science Final Exam Answer Key

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|-----|---|-----|---|
| 1. | B | 26. | C |
| 2. | C | 27. | A |
| 3. | D | 28. | D |
| 4. | A | 29. | C |
| 5. | D | 30. | A |
| 6. | C | 31. | C |
| 7. | C | 32. | A |
| 8. | C | 33. | D |
| 9. | D | 34. | B |
| 10. | C | 35. | A |
| 11. | A | 36. | B |
| 12. | B | 37. | C |
| 13. | A | 38. | D |
| 14. | D | 39. | C |
| 15. | A | 40. | A |
| 16. | B | 41. | C |
| 17. | A | 42. | C |
| 18. | B | 43. | B |
| 19. | D | 44. | C |
| 20. | C | 45. | A |
| 21. | A | 46. | A |
| 22. | D | 47. | A |
| 23. | B | 48. | B |
| 24. | C | 49. | D |
| 25. | B | 50. | D |

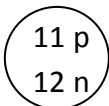
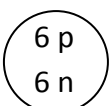
- 51 a) Canadarm 2 to view the issue and bring necessary supplies to the area. (1)
SPDM to manipulate necessary tools to repair the problem. (1)

* 1/2 mark each for naming the technology and 1/2 mark each for the explanation.

- b) Students may respond with 2 of either: medical, industrial, agricultural, meteorological or military.

* 1/2 mark each for each benefit and 1/2 mark each for the reason the benefit would be useful (teacher's discretion).

- 52 a) Draw a Bohr-Rutherford model for each element (include all subatomic particles). (2)

(i) Sodium	(ii) Carbon
1 e	
8 e	4 e
2 e	2 e
	

1 mark each. Students must include neutrons and protons as well to receive full marks.

- b) (i) Chemical change - the formation of the precipitate is evidence of a chemical change. (1/2 mark each)
- (ii) You could do a flame test by taking a small amount of the powder and burn it. Many elements burn with a specific colour flame. (1 mark)
- c) B is unreactive so it most likely Argon, a noble gas.

C belongs to Period 2, since it has the same number of valence electrons as Strontium, so it must be Calcium. This also matches the clue which says that C is electrically conductive.

By process of elimination A must be Fluorine (unreactive) and D must be Sodium (reactive).

A- Fluorine

B - Argon

C - Calcium

D - Sodium

* 1 mark for correct answers and 1 for correct justification

53 a) Since A, B, and C are charged objects, they must be positive or negative.

A and B have the same charge, since they repel each other. C has the opposite charge to both A and B since it is attracted. There are 2 possible answers:

A & B - positive C - negative

OR

A & B negative C - positive

* 1 mark for correct answer, 1 mark for correct justification

b) (i) $E = P \times t = 60 W \times 30 \text{ min} = 60 W \times 1800 s = 108\,000 J$ (1 mark)

* 1/2 mark if they forget to convert minutes to seconds

(ii) $Efficiency = \frac{Useful\ Energy\ Output}{Total\ Energy\ Input} = \frac{8200 J}{108\,000 J} = 7.6\%$ (1 mark)

* If a student makes a mistake in Part (i), mark Part (ii) based on whatever answer they have used from Part (i) (i.e. they can still receive full marks for Part (ii)).

c) (i) $V = 3.0 V$ (1 mark)

(ii) $I = 0.5 A$ (1 mark)

54 a) Any 2 of the following (or other appropriate answers):

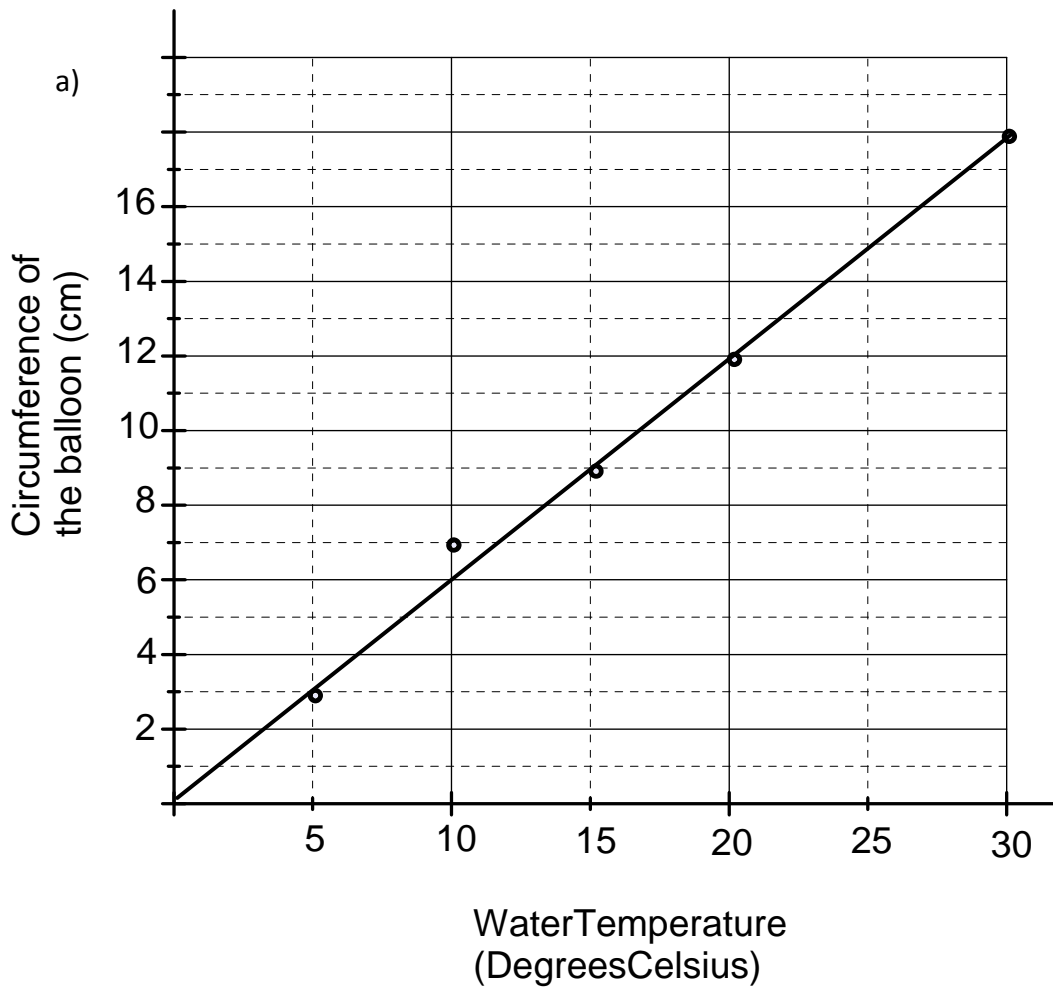
	Mitosis	Meiosis
Type of Cell	In body cells	In sex organs to produce sex cells
# of Daughter Cells Produced	2	4
Genetic Material in each cell	Same # of chromosomes as in parent	One half the # of chromosomes as parent cell
# of Steps	4	8
Genetic Variation	No genetic variation	Genetic variation

* 1 mark for each

b) 2 marks for appropriate defense of their answer (no marks for simply saying yes or no).

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a)



- * 1/2 mark for appropriate scales
- 1 mark for plotting points correctly
- 1/2 mark for line of best fit

b) Any two of the following (or other appropriate answers):

Amount of yeast, amount of sugar, amount of water

* 1/2 mark each

c) Answers may vary depending on how they drew the line of best fit. Answers should be in the range of 17-19 but should match their line of best fit. (1 mark)

d) No, once water reaches 100 degrees it will boil and kill the yeast. Students may have other acceptable answers as well. (1 mark)