**2016 Stem Cell Research Assignment**

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

You are to research the topic of stem cells using the guided questions below. You will then do a validation test on your work. Both the research and the validation, equally, will make up your mark for this assessment.

You will hand in your research and sit the validation on the same day. If you do not do/hand in your research you will still sit the validation regardless of research completion.

Your research should be presented in scientific format.

Each question should be answered as succinctly as possible and in **your own words**.

* 1. What are the two types of stem cells collected from human tissue? 1
  2. Explain the difference between the two types of stem cells. 2
  3. State which one is more useful and explain why. 2
  4. Where are most embryonic stem cells currently sourced from? 1
  5. Discuss any ethical concerns. 3
  6. Explain how therapeutic cloning can be used to create stem cells. 2
  7. What are the advantages of therapeutic cloning as a source of stem cells? 3
  8. Reproductive cloning is illegal in Australia. Explain what reproductive cloning is. 2
  9. Explain the ethical considerations surrounding reproductive cloning. Why may it be illegal? 3
  10. What is an iPS cell (Induced Pluripotent Stem Cell)? 1
  11. How are iPS cells currently produced? 2
  12. A research paper released early in 2014 stated that a 30 minute dip in acid can cause stress in a cell and induce it to become an iPS cell (STAP). What advantage would this have given over the current method? 1
  13. Unfortunately other researchers have not been able to replicate this process. Why is replication by other scientists an important part of scientific research? 2

Total marks for research:\_\_\_\_\_\_\_ / 25