Assessment Notification

Faculty: Science  Course: Biology  Year: 12

Assessment Task: Secondary Source Investigation Task

Assessment Weighting: 20%  Due: Term 3  Week 3  Date: 7/08/2019

Task Type: Hand in Task ✗  In Class Task ✗  Practical Task ☐

Outcomes assessed (NESA)

BIO11/12-2 designs and evaluates investigations in order to obtain primary and secondary data and information
BIO11/12-3 conducts investigations to collect valid and reliable primary and secondary data and information
BIO11/12-4 selects and processes appropriate qualitative and quantitative data and information using a range of appropriate media
BIO11/12-5 analyses and evaluates primary and secondary data and information

Problem solving
BIO11/12-6 solves scientific problems using primary and secondary data, critical thinking skills and scientific processes
BIO11/12-7 communicates scientific understanding using suitable language and terminology for a specific audience or purpose
BIO12-15 explains non-infectious disease and disorders and a range of technologies and methods used to assist, control, prevent and treat non-infectious disease

Module 8:
Inquiry question: How can technologies be used to assist people who experience disorders?

Students:
• explain a range of causes of disorders by investigating the structures and functions of the relevant organs, for example: – loss of kidney function
• investigate technologies that are used to assist with the effects of a disorder, including but not limited to: – loss of kidney function: dialysis
• evaluate the effectiveness of a technology that is used to manage and assist with the effects of a disorder

Task Description/Overview

- Part A: Designing an experiment for a kidney dissection
- Part B: Secondary research on kidney disease: Cause and treatment
- Part C: Research possible future directions of treating kidney disease - 3D bioprinting (Infographic).
- Part D: In class questions covering research conducted for Part A, B and C.
Detailed Assessment Task Description

Part A - Designing an experiment (18 marks)
Introduction: This should include: Function of kidney, name and function of each part, causes and effects of kidney disease, current and future treatments of kidney disease. (5 marks)
Aim: Write an appropriate aim for your experiment (1 mark)
Equipment: Comprehensive list with quantities (2 marks)
Risk assessment: 2 risks and 2 minimisations, in table format (3 marks)
Method: Written in numbered steps with a labelled diagram of:
- The mammalian excretory system (1 marks)
- Longitudinal cross section of a kidney (1 marks)
- Labelled diagram of nephron, and structure and function of each component (2 marks)

Part B - Secondary research (9 marks)
To evaluate the causes, effects and treatments of kidney disease.
- Labelled diagram of the dialysis machine with all of the steps included. (2 marks)
- Summarise what happens to the blood during the process of dialysis. (2 marks)
- Which element of kidney dialysis mimics the role of the tubule? Explain. (2 marks)
- Explain why dialysis is not considered an effective long-term option for kidney failure patients. (2 marks)
- What is the alternative to dialysis for patients with renal failure. (1 marks)

Part C - Infographic (16 marks)
Your task is to provide information about 3D bioprinting to the public in an easy to understand way by creating a paper poster infographic. You will make this cutting edge technology the focus by covering the following points:
- Describe what 3D bioprinting is (2 marks)
- How 3D bioprinting could work to construct a replacement organ (3 marks)
- Potential applications of 3D bioprinting (2 marks)
- Possible benefits (2 marks)
- Possible disadvantages (2 marks)
- Infographic layout: Must have a suitable title, be divided into sections with subheadings, summarise important points, images which should be included flow charts and 3D printed organs (5 marks)

Communicating (7 marks)
- Spelling/grammar - 2 marks
- Report format including headings and subheading - 2 marks
- Bibliography: At least 3 different resources - 3 marks

Part D - In Class test (35 marks)
This test will take place during period 3 and 4 on Wednesday 7th August. Part A, B and C will be handed in after the In Class test is completed.

Total = 85 marks
## Assessment Criteria

<table>
<thead>
<tr>
<th>Grade</th>
<th>Description</th>
<th>Mark Range</th>
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<tbody>
<tr>
<td>Outstanding (O)</td>
<td>The student has an extensive knowledge and understanding of the content and can readily apply this knowledge. In addition, the student has achieved a very high level of competence in the processes and skills and can apply these skills to new situations.</td>
<td>79.5-100</td>
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<tr>
<td>High (H)</td>
<td>The student has a thorough knowledge and understanding of the content and a high level of competence in the processes and skills. In addition, the student is able to apply this knowledge and these skills to most situations.</td>
<td>69.5-79</td>
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<tr>
<td>Sound (S)</td>
<td>The student has a sound knowledge and understanding of the content and has achieved a good level of competence in the processes and skills.</td>
<td>49.5-69</td>
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<tr>
<td>Basic (B)</td>
<td>The student has a basic knowledge and understanding of the content and has achieved a basic level of competence in the processes and skills.</td>
<td>19.5-49</td>
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<tr>
<td>Limited (L)</td>
<td>The student has an elementary knowledge and understanding in a few areas of the content and still requires further work to achieve competence in the processes and skills.</td>
<td>0-19</td>
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### Satisfactory completion of courses

A course has been satisfactorily completed, when the student has:
- Followed the course developed/endorsed by the NSW Educational Standards Authority (NESA)
- Applied himself/herself with diligence and sustained effort to the set tasks and experiences provided in the course.
- Achieved some or all of the course outcomes