**GENERAL HUMAN BIOLOGY – YEAR 11**

**TASK 4 – DIGESTIVE SYSTEMS RESEARCH EXTENDED RESPONSE**

**NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ WEIGHTING: 10%**

**DUE DATE: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ MARK = \_\_\_ /48**

**Part A - Digestive Disorders Research**  **(12 marks)**

The speed with which material is moved through the alimentary canal for absorption depends on the size and contents of a meal. Large meals or high amount of particular mineral in meals can contribute to digestive disorders which require treatments.

1. Complete the table on various digestive disorders.
2. Select one of the disorders to complete an in-depth study on.
3. Research the list of questions and create one A4 page of notes (2-sided).

**Part B – Validation and Gunshot Wound Comprehension**  **(36 marks)**

Read through a passage on the study of the digestive system, interpret the information provided and use the text to answer comprehension questions.

1. Complete the following table on various digestive disorders: [8 marks]

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Digestive disorders** | **Definition** | **Main causes** | **Signs and Symptoms** | **Treatments** |
| **Constipation** | Infrequent & difficult passage of stool  More than 3 days contents harden & pain | Poor diet, IBS, poor habits, laxative abuse, travel, hormones, pregnancy, fissure/haemorrhoids, body salt, compression, nerve damage, medication | See def | Diet, lifestyle, laxative, fluid, exercise |
| **Diarrhoea** | Increase freq and change consistency | Virus | See def | Hydration |
| **Bowel cancer** | Colon/rectum | Smoking, processed meat, weight gain, alcohol, low fibre, inactivity | Change bowel habit, change appearance, blood,tired, weak, weight loss, abdominal pain (severe) | Chemo, surgery, radiation |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Digestive disorders** | **Definition** | **Main causes** | **Signs and Symptoms** | **Treatments** |
| **Ulcers** | Sores- stomach, oesophagus, duodenum | Stomach acid  Break down lining | Pain, nausea, vomit, loss apetite & weight | Antacid |
| **Gallstones** | Pebble stones | Cholesterol, change bile, salts | Pain: infreq and severe (esp after fatty food)  Jaundice, fever, nausea | Diet, surgery, lihotripsy, medication |
| **Coeliac Disease** | Gluten immune disease | Genetic HLA DQ2, DQ8 | Pain, constipation, bloating, lethargy, flatulence, nausea, weight loss, vomit, diohrea | Diet |

1. From the list of digestive disorders in the previous table, choose one to complete an in-depth study on. [4 marks]

4 marks

* Presentation, clarity and accurate information
* References included
* How does the disorder affect the efficiency of the digestive system
* Explain the importance of early detection, use of drugs, physical therapy, radiation therapy and/or removal/replacement of the affected organ
* Do lifestyle choices affect the functioning of the digestive system with your disorder eg. activity levels, use of drugs, diet, vaccinations

3 marks

* Information is included but brief
* Presentation, clarity and accurate information
* References included

2 marks

* Some errors
* Presentation, clarity and accurate information
* References included

1 mark

* Incorrect information
* Presentation, clarity and accurate information
* References included

**Part B – Validation and Gunshot Comprehension (36 Marks)**

***Validation – Notes are allowed in this section. [19 Marks]***

1. Although alcohol is absorbed in the stomach, it is absorbed much more rapidly in the small intestine.

1. Suggest why alcohol is much slower to affect a person’s mood when consumed with a meal. (3 marks)

[1] stomach lined

[1] blood

[1] break down food >alcohol, longer to get to liver

1. Would the nature of the meal, for example, a meal high in carbohydrate compared with a meal high in fat, have any influence on alcohol absorption? Explain. (4 marks)

[1] yes

[1] fat helps alcohol- less effect as it is gotten rid off faster

[1] carb- digested and used for energy

2. Discuss how eating a diet rich in fiber and drinking plenty of water help maintaining a healthy digestive tract. (3 marks)  
**any 3 of below:**

[1] pull bad off walls

[1] build in stool

[1] lack water= constipation

[1] lack peristalisis

3. In the last few years, research has been directed at looking at the effect of diet and digestion.

1. List and discuss problems that can result from poor diet. (3 marks

[1] obesity

[1] increased life style diseases: diabetes and cardio vascular

1. List and discuss other problems that may occur in the digestive system that are not results of poor diet. (3 marks)

[1] genetic disease

[1] bacterial- ulcers

[1] stress & lifestyle- exercise

4. How do healthy foods aid digestion? (3 marks)

[1] fibre- badies from intestine build up in colon

[1] water intake= flush system

[1] gut- healthy: pre and pro biotics are balanced

***Background information [17 marks]***

1. During the 1800’s people debated how the stomach digested food. What were the three theories of the time? (3 marks)

[1] ground

[1] cooked

[1] chemical

1. When St. Martin’s stomach wall healed it formed a valve. What is a valve? (1 mark)

[1]Flap prevents backflow

1. Why did the valve open when St. Martin ate too much? (1 mark)

[1] pressure too much food pushing wall

1. How did Beaumont initially research the digestion that occurs in the stomach? (2 marks)

[1] observations

[1] chemical analysis of gastric juice

1. Before the work Beaumont undertook to research the gastric juices of the stomach, how would other medical professionals have studied the stomach’s action? (2 marks)

[1] stoole

1. We now know a lot about the gastric juices of the stomach. What are the main components of gastric juice? (2 marks)

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1. Today we are able to investigate the action of the stomach and associated organs without opening the abdomen. What methods are used? (1 mark)

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1. Why do you think it took nearly two years for the initial wounds that St. Martin suffered to heal?

(1 mark)

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1. Why do you think Beaumont only gave St. Martin 36 hours to live after he treated him? (2 marks)

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1. Who do you consider contributed the most to the understanding of the stomach’s actions – William Beaumont or Alexis St. Martin? Explain your choice. (2 marks)

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