



# Human Biology

## General course

Externally set task sample  
Marking key

**Total marks for this task: 39**

Question 1

(14 marks)

(a) Name the following structures:

(2 marks)

Description	Marks
B: ovary	1
D: vagina	1
<b>Total</b>	<b>2</b>

(b) Identify **two** hormones that play a role in preparing the uterus for implantation. (2 marks)

Description	Marks
oestrogen	1
progesterone	1
<b>Total</b>	<b>2</b>

(c) State the haploid and diploid number for cell above.

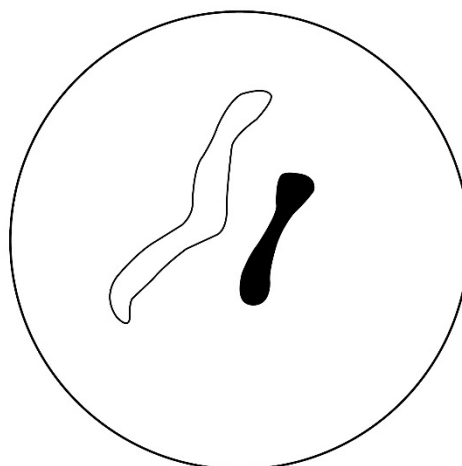
(2 marks)

Description	Marks
haploid – 2	1
diploid – 4	1
<b>Total</b>	<b>2</b>

(d) In the circle below, draw the chromosomes for a new cell produced when the cell above has undergone meiosis. (2 marks)

Description	Marks
draws two chromosomes	1
draws chromosomes different sizes	1
<b>Total</b>	<b>2</b>

Answer:



- (e) Contrast the structure and purpose of diploid and haploid cells. (4 marks)

<b>Description</b>	<b>Marks</b>
<b>Structure</b>	
diploid cells contain two copies of each chromosome/set of chromosomes	1
whereas haploid cells contain one copy of each	1
<b>Purpose</b>	
diploid cells purpose is for growth and repair	1
whereas the purpose of haploid cells is for the production of a diploid cell during fertilisation	1
<b>Total</b>	<b>4</b>

- (f) Describe where DNA is found in cells. (2 marks)

<b>Description</b>	<b>Marks</b>
in chromosomes	1
in the nucleus	1
<b>Total</b>	<b>2</b>

**Question 2**

**(15 marks)**

(a) Propose a hypothesis for the experiment.

(2 marks)

Description	Marks
Statement contains the relationship between the independent and dependent variable	1
Statement is testable	1
<b>Total</b>	<b>2</b>
Answer could include: Consumption of alcohol reduces sperm motility.	

(b) Identify the following variables from this experiment.

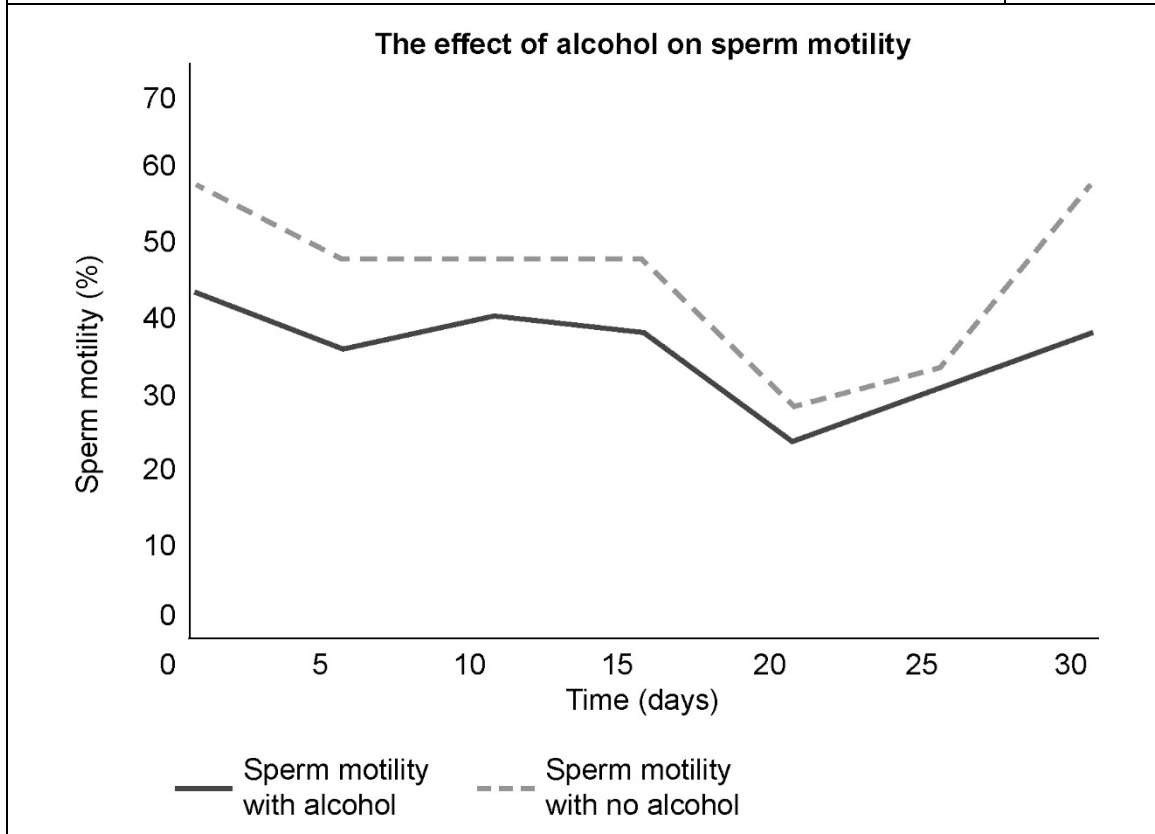
(2 marks)

Description	Marks
Independent variable - consumption of alcohol	1
Dependent variable - sperm motility	1
<b>Total</b>	<b>2</b>

(c) Draw a line graph for the data in the table on the grid provided below.

(5 marks)

Description	Marks
Title including both independent and dependent variables	1
Axes labelled correctly, including units	1
Scale on axes is appropriate	1
Data plotted correctly	1
Key/labels to identify lines	1
<b>Total</b>	<b>5</b>



- (d) Calculate the mean sperm motility for the group without alcohol. Show your workings out. (2 marks)

Description	Marks
$(60 + 50 + 50 + 50 + 30 + 35 + 60) \div 7$	1
= 47.8%	1
<b>Total</b>	<b>2</b>

- (e) Propose a conclusion that can be drawn from the results of this experiment and state whether the results support your hypothesis proposed in part (a) on page 6. (2 marks)

Description	Marks
alcohol reduces sperm motility/causes infertility	1
State whether hypothesis is supported or not	1
<b>Total</b>	<b>2</b>
Accept other relevant answers related to motility or fertility.	
Note: must relate to hypothesis in part (a).	

- (f) State **two** improvements to this experiment that could increase the validity of the results. (2 marks)

Description	Marks
Any two of	
<ul style="list-style-type: none"> <li>• patients/subjects are similar age</li> <li>• patients/subjects have no underlying medical conditions</li> <li>• amount of alcohol consumed (by the experimental group) is the same</li> <li>• time of day alcohol is consumed (by the experimental group)</li> <li>• the method of checking sperm motility</li> </ul>	1–2
<b>Total</b>	<b>2</b>
Accept other relevant answers relating to controlled variables or equipment accuracy.	

**Question 3**

**(10 marks)**

- (a) State whether this article is scientific or non-scientific. (1 mark)

Description	Marks
scientific	1
<b>Total</b>	<b>1</b>

- (b) Justify your response to part (a). (2 marks)

Description	Marks
it is from a government department/Department of Health and Aged Care which is expected to have the latest information	1
Department of Health and Aged Care is made up of health professionals	1
<b>Total</b>	<b>2</b>
Accept other relevant answers.	

- (c) Outline why it is important to have up to date information when reading about health issues. (1 mark)

Description	Marks
Any one of:	
<ul style="list-style-type: none"> <li>• to gain awareness of beneficial/harmful/unintended consequences</li> <li>• current with new drugs/medical ideas/methods</li> </ul>	1
<b>Total</b>	<b>1</b>
Accept other relevant answers.	

- (d) State why early detection is beneficial. (1 mark)

Description	Marks
allows for better care/pain management	1
<b>Total</b>	<b>1</b>

- (e) Explain why the initiative exists. (3 marks)

Description	Marks
to improve access for patients to diagnostic, treatment and referral services for endometriosis and pelvic pain	1
to build the primary care workforce to manage this chronic condition	1
to improve access to new information and care pathways	1
<b>Total</b>	<b>3</b>

- (f) State whether the healer is providing an opinion or an evidence based idea. Justify your response. (2 marks)

<b>Description</b>	<b>Marks</b>
opinion	1
Justification – any one of:	
<ul style="list-style-type: none"><li>• there is no evidence to support the healers belief</li><li>• they have no formal qualifications/are self-trained</li></ul>	1
<b>Total</b>	<b>2</b>
Accept other relevant answers.	

## ACKNOWLEDGEMENTS

**Question 3:** Department of Health and Aged Care. (2023). *Endometriosis and Pelvic Pain Clinics*. Retrieved November, 2023, from <https://www.health.gov.au/our-work/endometriosis-and-pelvic-pain-clinics>

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