

STUDENT NAME: \_\_\_\_\_



## YEAR 9 SEMESTER 2 2019 – EXAMINATION

### Multiple Choice Answer Sheet

Circle the letter indicating the best answer.

1	A	B	C	D
2	A	B	C	D
3	A	B	C	D
4	A	B	C	D
5	A	B	C	D
6	A	B	C	D
7	A	B	C	D
8	A	B	C	D
9	A	B	C	D
10	A	B	C	D
11	A	B	C	D
12	A	B	C	D
13	A	B	C	D
14	A	B	C	D
15	A	B	C	D
16	A	B	C	D
17	A	B	C	D
18	A	B	C	D
19	A	B	C	D
20	A	B	C	D
21	A	B	C	D
22	A	B	C	D
23	A	B	C	D
24	A	B	C	D
25	A	B	C	D
26	A	B	C	D
27	A	B	C	D
28	A	B	C	D
29	A	B	C	D
30	A	B	C	D



# YEAR 9 SCIENCE EXAMINATION

Semester 2, 2019



## WRITTEN QUESTION AND ANSWER BOOKLET

<b>STUDENT NAME:</b>
<b>TEACHER NAME:</b>
<b>DATE:</b>

### Mark Allocations:

Topic	Section	Marks	Total	%
Biological Science	Multiple Choice	/15		
	Key Words	/10		
	Short Answer questions	/30		
Earth and Space Science	Multiple Choice	/15		
	Key Words	/10		
	Short Answer questions	/30		

### TIME ALLOWED FOR THIS PAPER:

Reading time **before** commencing work: 10 minutes  
Working time for this paper: 1 hour 50 minutes

### MATERIAL REQUIRED / RECOMMENDED FOR THIS PAPER:

#### ***To be provided by the supervisor:***

- This question and answer booklets

#### ***To be provided by the candidate:***

- Pens, pencils, ruler, eraser

### IMPORTANT NOTE TO CANDIDATES

No other items may be taken into the examination room.

It is your responsibility to ensure that you do not have any unauthorised notes or other items of a non-personal nature in the examination room. If you have any unauthorised material with you, hand it to the supervisor BEFORE reading any further. All iPads and mobile phones must be turned off and in your bag along with any other devices and notes. Bags are to be closed and placed under the desk.

### **INSTRUCTION TO CANDIDATES:**

1. **Read** through the paper to familiarise yourself with all of the questions.
2. Use a **blue or black** ballpoint / ink pen for the written answers. Use pencil for drawing the graphs.
3. **Write** your answers in this booklet.
4. Should you require more space than you have been given please use **the spare sheet** (at the back of this booklet) and ensure that you include your name and the question / statement to which you are responding.

### **AT THE END OF THE EXAMINATION:**

- Any planning sheets or other pieces of paper **MUST** be handed in with this booklet.
- At the end of the examination make sure that your name is on your booklet and any other pieces of paper used.

### **Instructions to candidates**

1. Sitting this examination implies that you agree to abide by the examination rules set down by Kinross College.
2. Answer the questions in the space provided.
3. You must be careful to confine your responses to the specific questions asked and to follow any instructions that are specific to a particular question.
4. A spare page is included at the end of this booklet. It can be used for planning your responses and/or as additional space if required to continue an answer.
  - (a) Planning: If you use the spare page for planning, indicate this clearly at the top of the page. If you choose to use lined paper for planning, ensure your name and the title is clearly printed.
  - (b) Continuing an answer: If you need to use the space to continue an answer give the page number. Fill in the number of the question (s) that you are continuing to answer at the top of the page.
5. This examination contributes towards your report. If you have any questions, please ask them during the ten-minute reading time.

Manage your time wisely. Always provide substantiation (evidence). Make sure that what you have written makes sense.

**Note: Do not turn the page until you are asked to do so.**

## Biological Science Multiple Choice Questions

- The respiratory and circulatory system work together to
  - Fight disease
  - Exchange gases
  - Deliver nutrients to cells
  - Respond to stimuli
- The order of **decreasing** complexity is
  - Cells → tissues → organs → systems
  - Tissues → organs → cells → systems
  - Cells → systems → tissues → organs
  - Systems → organs → tissues → cells
- Pathogens** are microbes that
  - Aid digestion
  - Cure disease
  - Cause disease
  - Photosynthesize
- Nerves impulses are:
  - fast
  - direct
  - electrical
  - all of the above
- The glands found next to the kidneys are the
  - pituitary
  - thyroid
  - testes
  - adrenal
- The circulatory system consists of the:
  - Heart, lungs and muscles
  - Kidneys, blood and urine
  - Heart, blood and blood vessels
  - Brain, blood vessels and nerves
- The job of the excretory system is to remove waste and:
  - Control blood sugar levels
  - Control body water levels
  - Control body temperature
  - Control muscular actions
- Food chains always start with a
  - Primary consumer
  - producer
  - secondary consumer
  - decomposer
- A tapeworm living in your gut is an example of
  - parasitism
  - mutualism
  - commensalism
  - predation
- Which of the following is an **abiotic** factor?
  - Amount of food
  - Number of predators
  - Amount of water
  - Available breeding partners
- The energy for life on Earth all comes from
  - Water
  - Coal
  - Food
  - The Sun
- Respiration is
  - breathing
  - a chemical reaction that traps energy
  - a chemical reaction that releases energy
  - not necessary for life

13. An example of an introduced species to Australia is
- Kangaroo
  - Echidna
  - Salt water crocodile
  - Rabbit
14. Organisms like bacteria and fungi that break down dead matter into simple compounds are called:
- Herbivores
  - Producers
  - Decomposers
  - Secondary consumers
15. Photosynthesis is a reaction that:
- Releases carbon dioxide
  - Turns carbon dioxide into sugar
  - Gives out energy
  - Takes in oxygen

18. Which scientist is credited with proposing the theory of plate tectonics?
- Charles Darwin
  - Albert Einstein
  - Isaac Newton
  - Alfred Wegener
19. What type of crust is found on the sea floor?
- Sea floor crust
  - Oceanic crust
  - Continental crust
  - Geological crust
20. Which of these statements is correct?
- There is no difference between oceanic and geological crust
  - Continental crust lies under the oceans
  - Oceanic crust is denser than continental crust
  - Sea floor crust and continental crust have the same thickness
21. The Earth's land was once joined up in one supercontinent called:
- Europa
  - Jurassica
  - Pangaea
  - Americana

### Earth Science Multiple Choice Questions

16. Which of these concepts is part of the theory of plate tectonics?
- Continents are fixed and don't move
  - A great flood shaped The Earth's surface
  - Continents are in slow constant motion
  - None of the above
17. Which of The Earth's layers is broken into several tectonic plates?
- Crust
  - Mantle
  - Outer core
  - Inner core
22. What is happening at a subduction zone?
- Plates are sliding past each other
  - Plates are spreading apart
  - One plate is sliding underneath another
  - None of the above
23. Which of the following can happen at a transform boundary?
- Earthquake
  - Mountain formation
  - Volcanic eruption
  - Rift valley formation

24. At mid-ocean ridges plates are:
- Colliding
  - Sliding past each other
  - Spreading apart
  - None of the above
25. The three types of plate boundary are:
- Convergent, divergent, transverse
  - Convergent, digressive, transform
  - Concave, divergent, transform
  - Convergent, divergent, transform
26. The slipping, sliding and colliding of tectonic plates cause
- Volcanoes
  - Earthquakes
  - Tsunamis
  - All of the above
27. The movement of the Earth's tectonic plates is driven by
- Conduction zones
  - Convection currents
  - Convergence plates
  - Collision boundaries
28. Harry Hess discovered some evidence for continental drift. He called it:
- Seafloor spreading
  - Plate tectonics
  - Ocean drift
  - Subduction
29. As you travel deeper into the Earth...
- the temperature increases and the density decreases
  - the temperature increases and the density increases
  - the temperature decreases and the density decreases
  - the temperature decreases and the density increases
30. Millions of year in the future, what is likely to happen to Earth's continents?
- They will have spread really far apart
  - They will have sunk
  - They will have all joined back together
  - They will be the same as they are today

**End of Multiple choice questions**

Suggested time to complete 90 minutes

## Biological Science Short Answer Questions

1. Complete the table by matching the words below with their definitions:

**mutualism; habitat; pathogen; myelin sheath; hormone; dendrite; community; population; reflex; decomposer**

Keyword	Definition
	Anything that causes disease
	Part of nerve cell that receives messages and sends them to the cell body
	Fatty layer that covers the axon
	Involuntary movement
	Chemical messenger that travels through blood stream
	Relationship between two organisms where both benefit
	Different populations living in the same place
	Place where organisms live
	A group of the same species living in the same place
	Organism that breaks down dead organisms to gain nutrients

2. The immune system needs to work with the circulatory system in order to do its job.

Describe how the circulatory system helps the immune system to do its job

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(4 marks)



3. Ecosystems contain biotic and abiotic factors.

Name 3 biotic and 3 abiotic factors you might find in an ocean ecosystem

i) Biotic

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(3 marks)

i) Abiotic

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(3 marks)

4. A middle distance runner is standing still waiting for their race to start. When the starting gun goes, they start running. **Describe** and **explain** the response of their **circulatory system** to the change from standing still to running.

a. Response of circulatory system:

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(2 marks)

b. Reasons for response:

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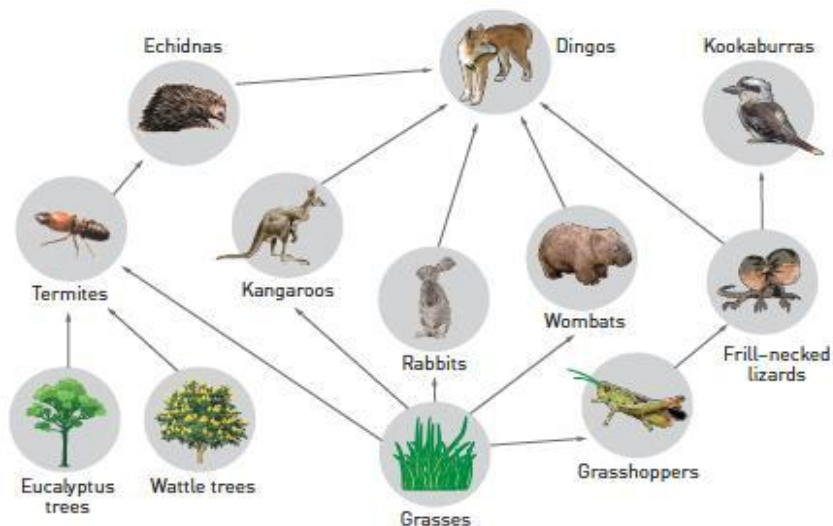
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(3 marks)

5. Scientists studied the following ecosystem over a number of years:



The scientists used the capture/recapture technique – where  $(N_1 \times N_2) \div M_2$  estimates the number of individuals in a population - to estimate the number of frill-necked lizards living in the area. Their results for Year 1 and Year 5 of their study are shown in the table below:

Year	Lizards captured on night 1 ( $N_1$ )	Lizards captured on night 2 ( $N_2$ )	Number of marked lizards on night 2 ( $M_2$ )
1	30	35	10
5	35	30	15

a. Calculate the estimated population of lizards for years 1 and 5

Year 1: \_\_\_\_\_

Year 5: \_\_\_\_\_ (2 marks)

b. Predict and explain what would happen to the numbers of grasshoppers, kookaburras and wombats over the same period of time:

Grasshoppers: numbers would - \_\_\_\_\_

Because - \_\_\_\_\_

Kookaburras: numbers would - \_\_\_\_\_

Because - \_\_\_\_\_

Wombats: numbers would - \_\_\_\_\_

Because - \_\_\_\_\_ (3 marks)

6. Many top level athletes spend time training at high altitudes. Describe and explain the body's response to high altitude training and explain why it improves athletic performance.

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(6 marks)

7. Shorehaven is a coastal area just north of Kinross. Wildlife in the area includes kangaroos, snakes, parrots, mice and rats living in the bushland behind the sand dunes, while on the beach and in the shallow water live crabs, shrimps and small fish. Offshore whales and dolphins swim. There are plans for a housing estate to be built in the bushland between the sand dunes and Marmion Avenue. Identify, either from the examples above, or from your own knowledge, **one species** whose population is likely to **decrease** and **one species** whose population is likely to **increase**. Give **2 reasons** to explain each choice.

**Decrease:**

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**Reasons:**

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**Increase:**

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**Reasons:**

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(4 marks)

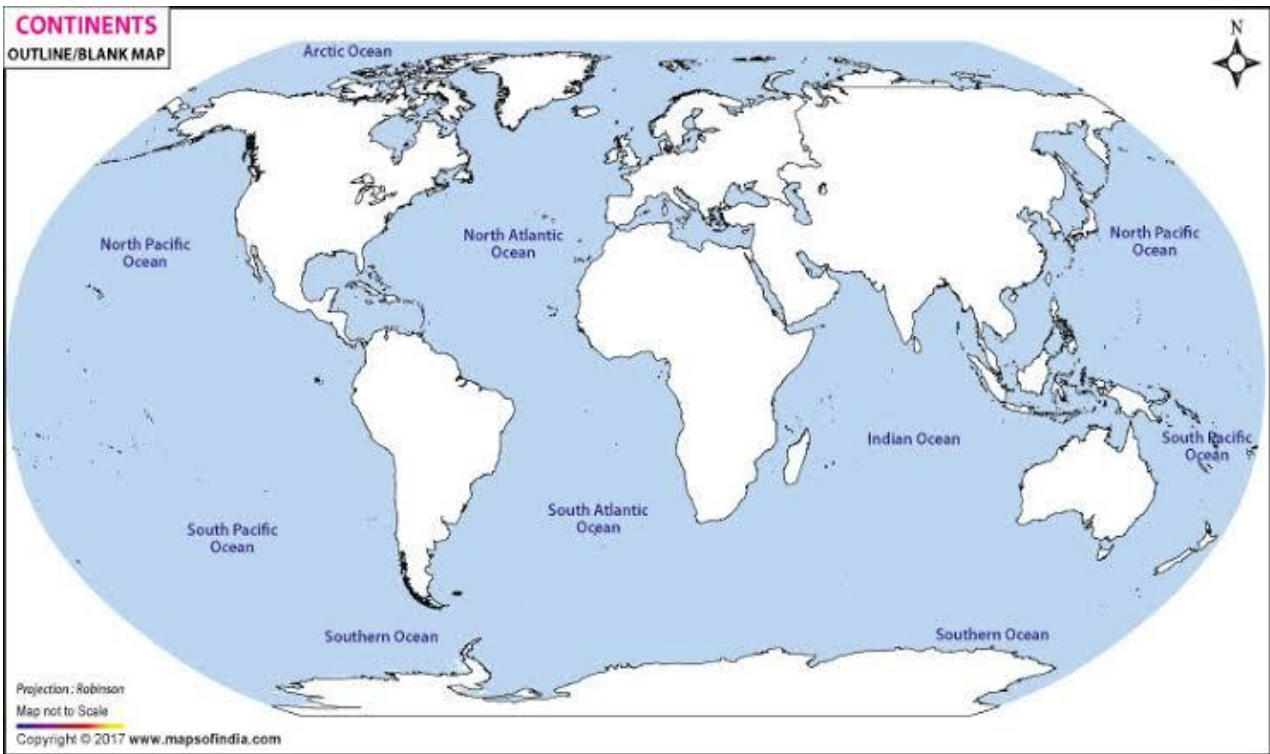
## Earth and Space Science Short Answer Questions

8. Complete the table by matching the words below with their definitions:

**Continental shelf; ocean trench; mantle; magma; lava; tsunami; core; fault; crust; rift valley**

Keyword	Definition
	the centre of the Earth
	a series of large waves that result from an underwater earthquake
	molten rock found beneath the Earth's surface
	the wide layer of molten rock located beneath the Earth's crust
	underwater cliffs between the beach and the ocean
	a deep valley that forms as a result of tectonic plates moving apart on land
	the outer layer of the Earth
	a deep ditch under the ocean along a tectonic plate boundary
	a fracture in rock where the tectonic plates have moved
	molten rock on top of the Earth's surface

9. The map below shows the arrangement of the continents as they appear today. Describe how a map of the world from 400 million years ago would have looked and explain why it has changed.



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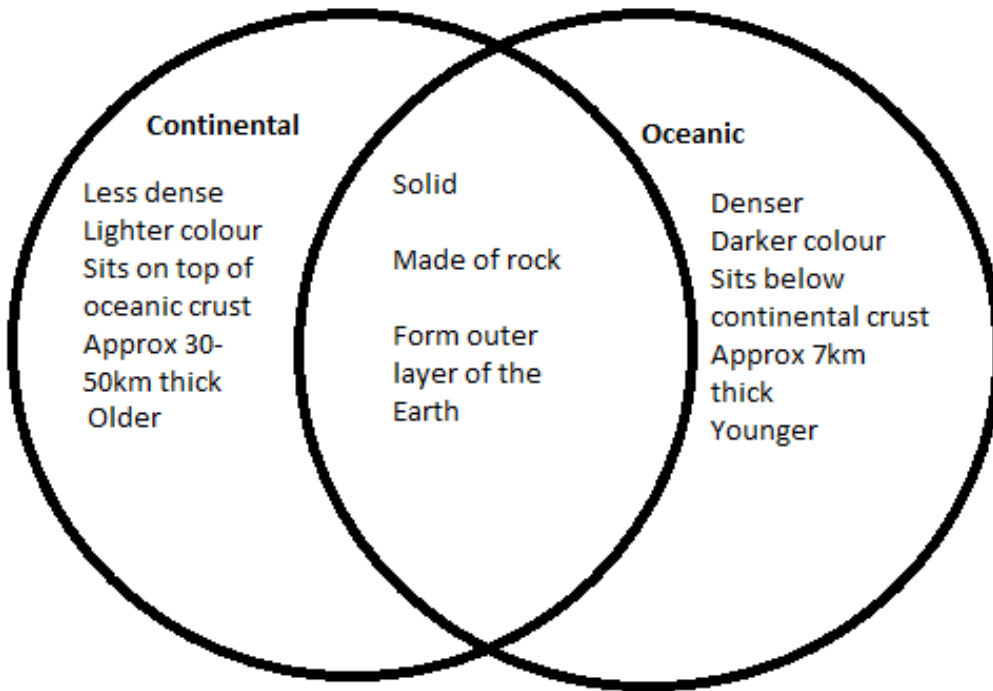
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(5 marks)

10. The Venn diagram below compares and contrasts the typical features of Oceanic crust and Continental crust:



At a plate boundary between oceanic and continental crust, the continental crust always moves up on top of the oceanic crust, with the oceanic crust being pushed back down into the mantle.

a. Which of the characteristics in the diagram – density, colour, thickness or age – is the reason for oceanic crust always being pushed underneath continental crust?

\_\_\_\_\_ (1 mark)

b. Explain your answer to part a.

\_\_\_\_\_  
 \_\_\_\_\_ (2 marks)

c. This type of collision boundary produces a feature known as a **subduction zone**. Identify 1 typical feature of a subduction zone and explain how that feature is formed:

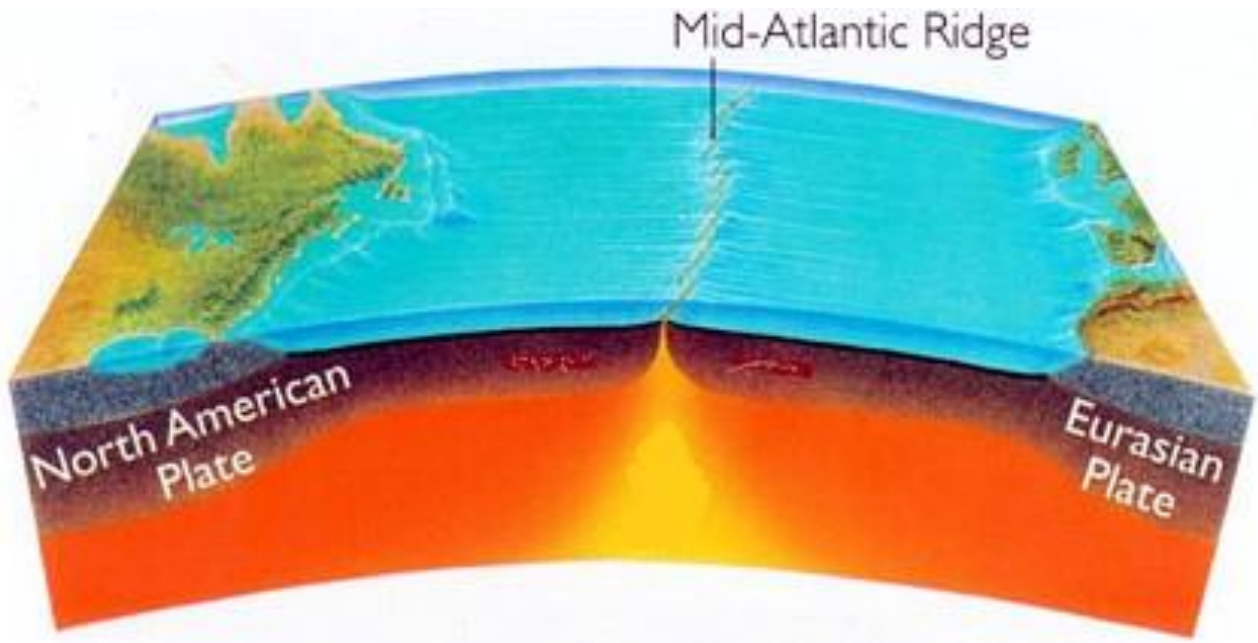
**Feature:** \_\_\_\_\_ (1 mark)

**Formed because:** \_\_\_\_\_

\_\_\_\_\_  
 \_\_\_\_\_ (1 marks)

11. Below is a diagram of the Mid-Atlantic Ridge:

- d. Mark on the diagram 2 arrows showing the direction of movement of the plates – label them “a” (1 mark)
- e. Mark on the diagram arrows showing the movement of magma in the mantle due to convection currents – label them “b” (2 mark)



f. The Mid-Atlantic Ridge provides an example of seafloor spreading. With reference to the direction of plate movement and convection currents, describe, in detail, what is happening during seafloor spreading and what type of plate boundary this is.

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(5 marks)

