



EXAM PAPERS PRACTICE

Boost your performance and confidence with these topic-based exam questions

Practice questions created by actual examiners and assessment experts

Detailed mark scheme

Suitable for all boards

Designed to test your ability and thoroughly prepare you

Level: IGCSE Oxford AQA Biology (9201)

Subject: Biology

Topic: IGCSE AQA Biology

Type: Mark Schemes

2002



1583

To be used by all students preparing for IGCSE Oxford AQA Biology (9201)
Students of other Boards may also find this useful

Biology

IGCSE AQA

Key skills



Mark schemes

1.

(a) x-axis: scale + labelled, including units

scale $\geq \frac{1}{2}$ width of graph paper label: biomass in g/m^2

1

bar widths correct

$\pm \frac{1}{2}$ -square each side

allow 1 mark if 3 correct

2

all 4 bars correctly labelled

large fish + small fish + invertebrate (animals) + algae

or

(trophic level) 4 + 3 + 2 + 1

or

tertiary consumer + secondary consumer + primary consumer + producer

ignore bar heights

1

(b) $\frac{840 - 10}{840} \times 100$

allow equivalent calculation

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1

98.809523... / 98.810 / 98.81 / 98.8

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1

99

allow answer given to two significant figures from an incorrect calculation in step 2

1



(c) inedible parts / example

allow eaten by other animals or not all organisms eaten

or

egested / faeces

allow not digested

allow excretion / urine

ignore waste

or

respiration / as CO₂

ignore energy losses

ignore movement

1

(d) bacteria decay organic matter / sewage / algae / dead plants 1

(by) digestion

allow example such as starch broken down to sugar

or

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protein broken down to amino acids

1

(and) bacteria respire aerobically

or

respire using oxygen

1

(which) lowers oxygen concentration (in water)

or

fish have less oxygen

allow reduced respiration of fish

1

(so) reduced energy supply causes death of fish

allow toxins in the sewage kill fish

ignore pathogens or (pathogenic) bacteria cause

disease in fish and kills them

1

[13]



2.

- (a) snail
or
shrew

additional incorrect answer negates correct answer

1

- (b) shrew

additional incorrect answer negates correct answer

1

- (c) fewer shrews to eat them

1

- (d) population

1

- (e) **C**

1

- (f) $(11\,000 \times 0.1 =)$
1 100 (kJ)

1

- (g) the snails do not eat the roots of the lettuces

1

- (h) any **one** from:

- light (intensity)
- temperature
- moisture (levels)
- soil pH
- mineral / ion content (of soil)
- wind intensity / speed

ignore wind direction

- carbon dioxide (levels)
- oxygen (levels)

1

[8]



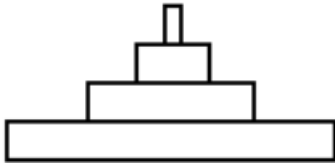
3. (a) measure the length / area of the field 1
- (b) use (a) random number(s) (generator)
or
use coordinates method explained 1
- (c) compare their results with another student's results 1
- place more quadrats 1
- (d) $0.25 \times 5 = 1.25$ 1
- $500 / 1.25 = 400$ 1
- $(40 \times 40 =) 16\ 000$ 1
- allow 16 000 with no working shown for 3 marks* 1
- (e) 11 1
- (f) (quadrat) 5
both quadrat number and correct reason must be given for 1 mark 1
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- very few or only 2 growing (here)

[9]

4. (a) any **two** from:
- *idea of* absorption of light / energy
 - transfer to chemical energy
- allow produce sugars / glucose / starch / carbohydrate / food / biomass*
- provides food / energy for animals / caterpillar
 - releases oxygen
- 2



(b)



1

(c) 15(%)

allow 1 mark for $\frac{3 \times 100}{20}$ with no answer or incorrect answer

or

allow 1 mark for 0.15

2

(d) (i) any **two** from:

- markings look like eyes / face / mouth of much larger animal
- looks fierce / scary / dangerous
allow it looks like a snake
- to frighten blue tit / bird

max 1 if reference to camouflage

2

(ii) any **two** from:

- sharp / long / big claws
ignore strong
- sharp / hooked beak
ignore strong / big
- large wings **or** flies quickly
allow streamlined / aerodynamic
ignore powerful wings
- good eyesight

2

[9]



5.

- (a) (i) any **two** from:
- not all eaten
allow eaten by other animals
 - used for respiration
ignore used / lost in heat / movement
 - lost as CO₂ / water / urea
 - lost as faeces **or** not all digested
if neither mark awarded allow 1 mark for lost as waste

ignore references to energy losses

do not allow for growth / repair / reproduction

2

(ii) any **one** from:

- thrushes eat other things
- thrush numbers likely to vary (considerably)

allow it is only an estimate (of population size) or only counted

thrushes for 5 hours

- thrushes were not present all the time
- thrushes feed on a much bigger area



- (b) (i) any **one** from:
- there are two dependent variables
 - there is no independent variable
 - to show the association / correlation / pattern (between the two variables)

1

- (ii) (snails in woodlands)
more have dark(er) colour(ed shells) **or** fewer have light-coloured shells
allow converse for grassland, if clear

1

(shells have) no / fewer stripes or have no stripes
allow converse for grassland, if clear

1

- (iii) less likely to be seen (by predators / birds / thrushes)
allow camouflaged (from predators / birds / thrushes)
allow light coloured shells with stripes would be more visible (to predators / birds / thrushes in woodland (than grassland)).

1

[7]