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

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) 46

1

(b) 23

allow ecf from 2.1 – ie half of answer given in 2.1

1

(c) egg

1

sperm

1

ovary

1

meiosis

1

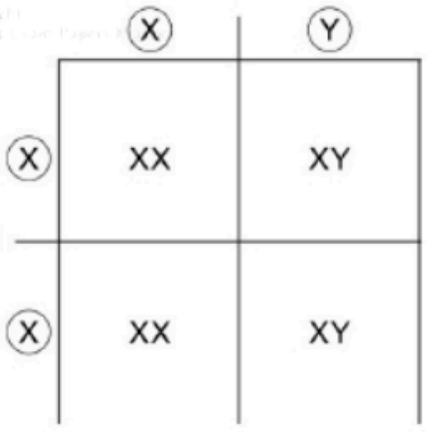
fertilisation

1

correct order only

correct spelling only

(d)



*all 4 correct = **2** marks*

*2 or 3 correct = **1** mark*

*0 or 1 correct = **0** marks*

ignore correct / incorrect identification of male and female offspring

2

(e) 1 in 2

1

(f) any **two** from:

- multiple genes determine appearance
  allow several / many genes determine appearance
- different combinations of alleles
  allow description of combinations of alleles' allow genes for alleles
- different environmental effects
  allow example e.g. eat different diets
- from different egg / sperm

2

[12]

2. (a)

	statement is true for		
	mitosis only	**meiosis only**	**both mitosis and meiosis**
all cells produced are genetically identical	✓		
in humans, at the end of cell division each cell contains 23 chromosomes		✓	
involves DNA replication			✓

*3 correct = **2** marks*
*2 correct = **1** mark*
*0 or 1 correct = **0** marks*

(b) any **two** from:

ignore references to one parent only

- many offspring produced
- takes less time

allow asexual is faster

- (more) energy efficient
- genetically identical offspring

allow offspring are clones

- (more) energy efficient
- genetically identical offspring

allow offspring are clones

- successful traits propagated / maintained / passed on (due to offspring being genetically identical)
- no transfer of gametes or seed dispersal

allow no vulnerable embryo stage
allow no need for animals

- not wasteful of flowers / pollen / seeds
- colonisation of local area

must imply local area

2

(c) genetic variation (in offspring)

1

(so) better adapted survive

allow reference to natural selection or survival of the fittest

1

(and) colonise new areas by seed dispersal
or
can escape adverse event in original area (by living in new area)

must imply new area

1

many offspring **so** higher probability some will survive

1

*allow bluebell example described (**max 3** if not bluebell)*

[8]

3. (a) (i) meiosis

allow mieosis

1

(ii) testis / testes

allow testicle

1

(b) (i) 23

1

(ii) fuses / joins with cell D / with egg cell or used in fertilisation

allow fuse with another cell 1

prevents doubling of chromosome number / restores original no. / 46 / diploid no. / normal no. / full no.

accept 23 from each parent / from each gamete

1

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4. (a) (i) mitosis

correct spelling only

1

(ii) replicates / doubles / is copied / duplicates

accept cloned
ignore multiplied / reproduced

1

(b) fertilisation occurs / fusion (of gametes)

accept converse for asexual, eg none in asexual / just division in asexual

1

so leading to mixing of genetic information / genes / DNA / chromosomes

genes / DNA / chromosomes / genetic information comes from 1 parent in asexual
ignore characteristics

1

one copy (of each allele / gene / chromosome) from each parent
or
gametes produced by meiosis
or
meiosis causes variation

meiosis must be spelt correctly

1

[5]

5. (a) seeds produced by sexual reproduction / fusion of gametes / fertilisation

allow produced by pollination / crossing

1

mixture of genes / genetic information / chromosomes / DNA
or from two parents / apple trees

*if no other mark obtained allow **1** mark for apples had different genes / genetic information / chromosomes / DNA*

or

mutation occurred

ignore environmental effects / cloned

1

(b) (i) cuttings / tissue culture

accept grafting

allow adult cell cloning

ignore cloning unqualified

ignore genetic engineering

ignore asexual reproduction

1

(ii) asexual reproduction

allow produced by cloning / mitosis

1

have identical genes / genetic information / chromosomes / DNA

or no mixing of genes / genetic information /chromosomes /DNA

1

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6. (a) any **two** from:

assume it refers to asexual

- no fusion in asexual **or** sexual involves fusion

  *accept no fertilisation in asexual **or** fertilisation in sexual*

  or no mixing of genetic information in asexual **or** mixing of genetic information in sexual

  accept genes / alleles / chromosomes / genetics for genetic information

  or asexual involves splitting (of one individual)

- no gametes in asexual **or** sexual involves gametes

  accept named gametes

- only one parent in asexual **or** sexual involves two parents

- no variation in asexual **or** asexual produces clones **or** sexual leads to variations

  allow offspring of sexual have characteristics of both parents for this point

  ignore sexual intercourse

  ignore external / internal

  ignore plants / animals

  ignore mitosis / meiosis

2

(b) nucleus of egg removed or

involves empty egg cell 1

so only one nucleus or one set of genetic information / genes / chromosomes

or

so genetic information / genes / chromosomes from one parent only

1

[4]

7. (a) characteristics

1

(b) genes

1

(c) chromosomes

1

(d) mitosis

1

(e) asexual

1

[5]