

Practice Question Set For GCSE
Subject : Biology
Paper-1 Topic: B1 Cell Biology

Name of the Student: _____

Max. Marks : 22 Marks

Time : 22 Minutes

Mark Schemes

Q1.

(a) any **one** from:

- meristem(s)
- **tip** of shoot
ignore stem and embryo
- **tip** of root

1

(b) to produce large numbers of identical plants

1

(c) 6×10^{-12} (grams)

1

(d) $\frac{28}{360} \times 15$

or

1.166666666(r)

allow $\frac{7}{90} \times 15$

allow correct rounding

allow 1.16

1

1.17 (hours)

*allow **1** mark for 1 hour 10 minutes **or** 1 and 1/6 hours **or** 70 minutes **only** if units given*

1

*an answer of 1.17 (hours) scores **2** marks*

(e) **stage 1**

cell growth

or

increase in number of organelles

allow increase in named organelle e.g. ribosomes / mitochondria

1

DNA replicates*

or

two copies of each chromosome form*

**allow DNA duplicates / doubles*

**ignore genetic information replicates*
if this statement given as part of stage 2 allow **max 4 marks*

1

stage 2 / mitosis

one set of chromosomes moves to each end of cell

allow chromosomes separate or are pulled apart

1

nucleus divides

allow nucleus splits into two

1

stage 3

cytoplasm / cell membrane divides to form two (genetically) identical cells

allow cytokinesis

1

***max 4** if correct sequence but no reference to stage numbers*

***max 4** marks if no stage numbers given
ignore names of phases*

marks can be awarded for labelled diagrams

(f) any **two** from:

advantages:

- may be used to cure / treat (current / future) diseases
or
cure medical conditions
or
produce replacement cells / tissues / organs
allow example e.g. diabetes / paralysis
ignore used for medical treatments
- cells / tissues of any type could be produced
allow cells differentiate into many types
- cells / tissues of any type could be produced
ignore identical cells are produced unqualified
- many cells produced
- cells produced could be used for research
- would reduce waiting time for organ transplants

2

any **two** from:

ignore references to cost
ignore unethical unqualified
ignore references to religion / beliefs

disadvantages:

- potential life is killed / destroyed
allow embryo is destroyed
ignore cells destroyed or wasted
- shortage of donors / eggs

- egg donation / collection has risks
- do not yet know risks /side effects of the procedure on the patient
allow may cause tumours / cancer
- may transfer (viral) infection
- poor success rate to produce viable eggs / embryo

2

ignore references to cost

[14]

Q2.

(a) any **two** from:

- synthesis of new molecules
allow named molecule eg starch / glycogen / cellulose / lipids / fats / proteins / hormones / antibodies
- for active transport
- to keep warm (in mammals / birds)
allow description
allow to keep warm (in animals)
allow for movement (in animals)
allow for transmission of nerve impulses (in animals)

2

(b) mitochondria / mitochondrion

1

(c) both occur without oxygen

1

both release (a small amount of) energy

1

muscle cells produce lactic acid but plant cells produce ethanol

1

muscle cells do **not** produce carbon dioxide but plant cells do

marks can be awarded from correct word or balanced symbol equations

1

(d) the amount of oxygen needed to react with the lactic acid formed

allow the amount of oxygen needed to break down
or oxidise the lactic acid

1

[8]