

Name of the Student: _____

Max. Marks : 17 Marks

Time : 17 Minutes

Mark Schemes

Q1.

- | | |
|--|-----|
| (a) D | 1 |
| (b) C | 1 |
| (c) right atrium → right ventricle → pulmonary artery | 1 |
| (d) Level 3: A judgement, strongly linked and logically supported by a sufficient range of correct reasons, is given. | 5-6 |
| Level 2: Some logically linked reasons are given. There may also be a simple judgement. | 3-4 |
| Level 1: Relevant points are made. They are not logically linked. 1-2 AO1 | 1-2 |
| No relevant content | 0 |

Indicative content

Advantages of statins

- easy to take **or** not invasive (procedure)
- decrease blood cholesterol
- slow down build-up of fatty materials in arteries
- maintain blood flow to heart muscle cells
- low cost (compared to stent operation)

Disadvantages of statins

- might be side effects of drug eg muscle pain
- effects take time to happen
- drug will need to be taken long term
- might forget to take drug

Advantages of stent

- blocked artery is held open
- blood flow to heart muscle cells is increased
- stent will remain in place for a long time
- effect of stent is immediate

- rapid recovery from operation

Disadvantages of stent

- risk of infection from operation
- risk of surgery eg heart attack **or** bleeding
- risk of thrombosis **or** blood clot

For Level 3, arguments for and against **both** treatments are needed.

- (e) heart (muscle) cannot contract / pump as effectively / powerfully
allow heart (muscle) is not as strong

1

(so) less blood pumped out of heart **or** to body (on each beat / contraction)
ignore reference to rate of blood flow

1

(so) less oxygen (reaches cells / body) for (aerobic) respiration
allow (so) more anaerobic respiration

1

(so) breathing rate increases to supply more oxygen
or

(so) breathing rate increases to repay oxygen debt
allow (so) breathing rate increases to break down lactic acid

1

- (f) stem cells are undifferentiated cells
allow stem cells can differentiate
allow stem cells can develop into different types of cell
ignore stem cells can become specialised
ignore stem cells are not specialised

1

(therefore) can form heart (muscle) cells
allow (therefore) can form muscle cells

1

- (g) any **two** from:
- cells will not be rejected
allow converse if clearly referring to embryonic stem cells
 - no risk of damage to embryo
allow no (potential) human life destroyed / damaged
 - adult can give consent
ignore unethical unqualified
ignore religion unqualified

2

[17]