END OF YEAR MOCK EXAMINATION
SECONDARY ONE
SCIENCE (ANSWER KEY)

Paper 1

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

Paper 2

Question 21

Constant variable: thickness of board/length of board/width of board/length of rope [1]

Dependent variable: the amount of weight hanging on the board [1]

Question 22

(a)(i) C [1]

(a)(ii) E [1]

(b) Granulated sugar has smaller particle size/coarse-grained sugar has larger particle size. [1] Thus, granulated sugar dissolves faster than coarse-grained sugar.

(c) 1. Property of the compound will be different from its constituent elements, whereas a mixture has the same characteristics of its constituents.

2. The elements in a compound react in a fixed proportion by mass whereas the components of a mixture are not mixed in any fixed proportion.

3. A compound cannot be broken down by physical methods, whereas a mixture can be easily separated by physical methods. (any one)

Question 23

(a)(i) Amy and Ash [1]

(a)(ii) Amy took drug samples P, R and T; [1]

Ash took drug sample R. [1]

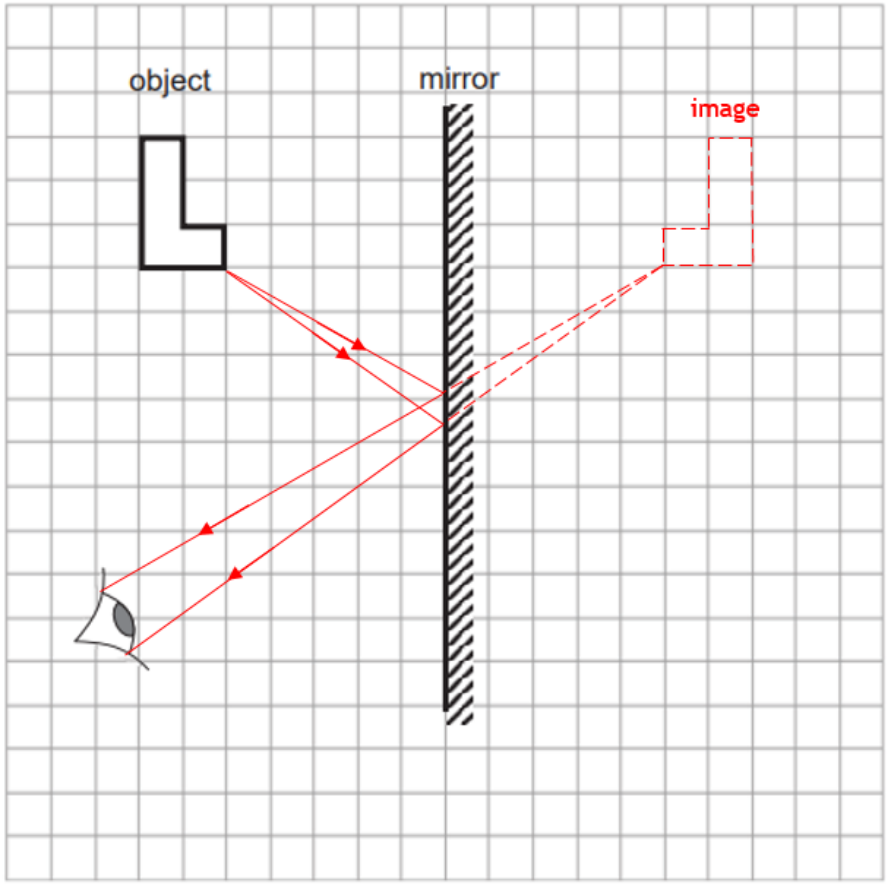
(b) Both drug samples P and T have different solubilities in the solvent used for the chromatogram. (Drug P is significantly more soluble than drug T in the solvent.) [1]

(c) Drug sample Q is not soluble/insoluble in the solvent used for the chromatogram and is thus unable to travel up the chromatogram. [1]

Question 24

(a)(i),

(a)(ii)



Total 3m

(i) 1m for: Correct position of image in dotted lines; same distance from mirror as object; label "IMAGE"

(ii)*1m for light rays from image to eye

*1m for light rays from object to eye with correct arrows

Penalise 1m for incorrect direction of light rays

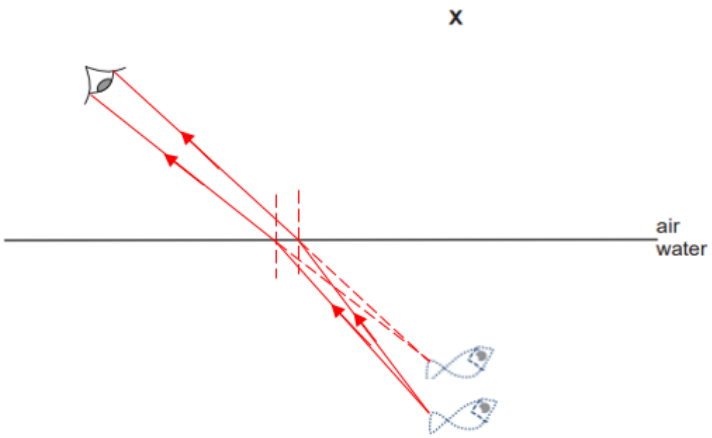
Penalise 1m if light rays are from different points from object/image

Accept if light rays originate from different points – because reflection of light rays can occur from all point on the object (question did not state draw 2 light rays from the same point)

(b) Upright/Virtual/Laterally inverted/Same size/Same distance away from the mirror as the object [1] (any two)

Question 25

(a), (b)



(a) Below the image, same size and same shape (approx.) [1]

(b) 2 straight lines from tail of image to the eye with dotted lines below water. [1]

2 rays (full line) from tail of fish to boundary (at point of incidence) [1]

No normal line(s) -1

no arrow on real line -1

arrow on dotted line -1

1 line only -1

(c) Yes. He would be more likely (able) to spear the fish. [1]

When light enters/leave a different medium at perpendicular to surface/ boundary / parallel to normal it will not bend. [1]

Question 26

The cytoplasm / cell membrane / vacuole became smaller. OR

Cell membrane separates from cell wall. OR The cell becomes plasmolysed. [1]

External solution / sugar solution fills space between cell wall and cell membrane. [1]

Question 27

(a) In region D, substance X is undergoing a change in state, so heat gained by particles is used to overcome the forces of attraction between them. [1]

(b) It will vapourise / change from liquid to gaseous state.

Hence, it is able to diffuse easily to the surroundings. [1]

(c) In region A, as the solid is heated, the particles **gain energy** and **vibrate more vigorously about fixed positions**. [1]

When the particles gained enough energy in region B, they **overcome the forces of attraction** between them. Particles move further apart and start to take on a disorderly arrangement. [1]

Particles now are free to move throughout the liquid by sliding past each other. At region C, all the solid has melted and turned into a liquid. [1]

Question 28

(a) J and K

(b) G

(c) An atom has equal numbers of positively-charged protons and negatively-charged electrons [1].