

Practice Test for Science

Qatar Secondary School Certificate

Answer Key

Biology

1	D
2	C
3	B
4	A
5	C
6	C
7	D
8	C

Answer to question 9:

Any two of the following:

- Bees will die if hive temperature fluctuates too drastically.
- Stores of honey/pollen/food may be compromised if hive temperature fluctuates too drastically (as this is where it is stored).
- Productivity may decrease if hive temperature fluctuates too drastically.
- Any other reasonable response

Answer to question 10:

Any response indicating that bacteria are used to break down the solids and organic matter in waste water.

Chemistry

11	D
12	D
13	A
14	D
15	C
16	D
17	B
18	C

Answer to question 19:

$$4.375\text{g} + 0.625\text{g} = 5\text{g total}$$

$$4.375/5 \times 100\% = 87.5\%N$$

$$100\% - 87.5\% = 12.5\%H$$

$$87.5\text{gN} \times 1\text{mol}/14\text{g} = 6.25\text{molN}$$

$$12.5\text{gH} \times 1\text{mol}/1\text{g} = 12.5\text{mol H}$$

$$6.25\text{mol N}:12.5\text{mol H}$$

$$1:2$$



$$14 + 2 = 16\text{g/mol EFM}$$

$$\frac{32\text{g/mol}}{16\text{g/mol}} = 2$$

$$16\text{g/mol}$$



Answer to question 19:

A. To test for oxygen in the laboratory, place a glowing splint in the vicinity and it will burst into flame if oxygen is present.

B. Any two of the following properties:

- odorless, colorless gas
- reactive with metals to form oxides
- will form double bonds and negative 2 ions

Physics

21	C
22	C
23	A
24	D
25	B
26	C
27	B
28	B

Answer to question 29:

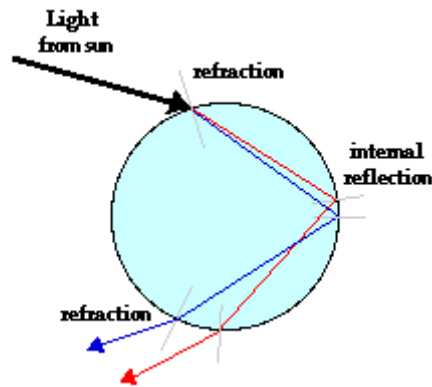
How p-p chain fusion creates energy in younger stars:

Any response indicating that proton-proton fusion fuses 2 hydrogen atoms together to form helium. This action releases energy as a byproduct.

How stars create energy after p-p chain fusion ends:

After all of the hydrogen reserves have been spent, the p-p chain fusion begins to fuse helium in the same fashion. The process of fusing helium until carbon is called the triple alpha process. This goes on until there is no energy gain from fusion (when iron is left). At this point the star begins to die.

Answer to question 30:



Any answer indicating that rainbows are caused by a series of refractions and reflections that causes the original light ray to be split up into different colors like a prism. This happens because different colors of light refract differently because of their wavelengths. All of these reflections and refractions happen in every tiny drop of water in the air.