ASTA Exam Night

2016 Nov 30 notes

Level 1 Science

L1sci Mechanics 90940:

Q1:

Appreciated "no calculations required" in Q1a – good to be overt – helped many kids.

Bold term in 1c was good – again – overt hint.

Q2:

Q2a "too easy"… just a square.

page 9 – a bit tricky for a L1 kid… but seems very similar to 2014 and 2012.

Page 9 (ii): a bit unrealistic… over-simplification makes it a bit silly

Q3:

3c: surprised that "assume energy is conserved"… this is always conserved… a bit silly. Has this every been overtly stated in a question – as it should be implicit.

3d: seems to "the only challenge" in much of the paper

But bullet points helped a lot – since many kids would look at graph and freak out – but hopefully read the helpful bullet points

L1sci: genetics 90948

Q1: "photic sneezing" – a strange situation that hardly any kid would have been familiar with – BUT explained well if kid reads the page.

But questions seemed to be quite standard and "nothing out of the order"

Q2: some like the interesting situation of rock pocket mice… some thought kids would be thrown by irrelevant details. Detractor from the point of the question… makes it a linguistic-heavy question.

Q3: Part a was good – well set out.

3b: a good question but a bit confusing… especially for kids who know their biology could see this simplification as non-biologically-true.

BUT for kids who have any literacy-issues: the bio exam questions' language was very word-heavy.

L1sci: acid bases 90944

Q1: good use of "arrangement" instead of "configuration". Nice.

Very repetitive from previous years: kid could have crammed from previous externals and done quite well. Predictable exam does have some benefits but also can lead to "are you really testing the material".

Q1 – an improvement would have been to give F^- in the table.

Q1ci: could remove the O_2 from the situation – doesn't need to be there.

Q1d: totally unrelated to previous parts of Q1

Q2

Q2b&c = good. Makes you think.

Instead of using concentration of the acid – why did they go to pH of acid… question was about rates. Just stick with concentration if that's the focus of the question.

Q3: not happy with un-necessary coloured picture.

Q3c: when this is done – you do NOT get variance of colours… in reality – the titration goes from blue to red without any inbetween. Thus if kid is expected to include roygbiv… hopefully kids have been trained.

L1sci in general:

Comparing genetics / motion / acid-base: genetics seems a bit word-heavy with entire-page answers.

BUT good that each test was 3-questions only (and not 4).

Thing of goodness: no silly titles of questions. Just "question one". Good.

Physics

Waves:

- p3: graph from oscilloscope of AC... displacement vs time... not very familiar with this context at L1... hope kids ignore situation and get on with answer... maybe overly point out horizontal is time (not distance)... y axis has no unit or quantity = odd.

- P4: earth-moon distance. huge numbers to deal with. Kilometres AND scientific notation. Good that there is some maths in phy paper... but this could be seen as making complexity for the sake of it rather than testing the physics.

Electromag:

- P3: plate 2 is positive... kids would struggle to see that earthed plate is negative because it's earthed... earthed things are usually neutral.

- P6: assume R of bulb stays constant... this never happens and good kids may get caught out. Would be good if overtly explained that "resistance of this bulb is constant".

L2phy:

Waves:

- No interference pattern anyplace... odd thing to leave out. But 3-question format

- Q1: diagram is not using the traditional vertical line... keep the convention that shape of mirror is "small" and just use the vertical line.

- Q3: refractive index given at start... but then asked for at end to THREE decimal places... odd. Going against sig-fig use in physics.

Electromag:

- Q1 circuit bizarre: who connects up speakers like this. If you're going to have a context – use a correct one... but if kids go with diagram things should work out.

- Q2: good "cathode negative" "anode positive". Page 4 diagram: small diagram is a bit too small.

- Q3: almost same as scholarship question.

Mech: in general: too easy – a worry for how deep to go to get excellence.

- 3d: questions about "how do you do this"… include delta Ep…

- Grammar of question: could be read as double the distance… luckily the diagram clarified.

L3phy: waves:

L3phy: electromag:

- 1c: question as to the depth of the answer?

- 1a: "charge stored on capacitor"… technically overall charge = 0… energy is stored. Not critical to question – BUT the physics ideas should be correct in the exam.

L3phy: mechanics:

- contexts are pretty standard – class-room demonstrations

- 3d: doesn't state there is any friction – but we'd assume damped motion is in play. Thus it's a trap. Ticks on graph make some strange numerical values – depending on how graph is made…

Scholarship:

- Quite good that each question as an "easy starter"… but by part c & d it gets tricky.

- Good questions though.

- Q4c: beta emission's energy – a very strange formula. How does the hardness of this this question include L3 content. Use of odd equation to test out mathematical ability.

- PLEASE give equation page – or fold out one… not list of equations at beginning of booklet kids have to flip back to all the time.

In general: all phy papers seem to be less wordy than in the past (not overt wordiness of the question). A good thing. Hopefully the trend continues.