ESS Exam feedback December 2015

Level 2

91191 – Extreme events – In each question please explicitly refer students back to the general map at the front of the booklet.

Plus	Minus	GRRR
1 Tsunami		
Common context. Someone likes it a lot! Really good representation of the standard. Nice analysis question. Good amount of space for diagram & answer.		
2 Stratovolcanoes		
Annotation of diagram good. Good question. Clear sequence of bullet points.	Explain in detail used rather than 'discuss'. No clear instructions about naming the plates?	
3 Ekatahuna EQ		
Nice recent example Use of geonet pic good. 2nd & 3rd bullet points should be first and second.	And again regarding the lack of clarity around use of "explain in detail" vs "discuss" Very vague first bullet point. Not clear what is required. Should be the last one listed. Lots of room for diagrams.	

91192 – Stars & planetary systems

Plus	Minus	GRRR
1 Same temp diff type		

2 stars being highlighted on the HR diagram. Differ in luminosity fine. Good solid question. Appreciate the feedback received via Matthew Campbell from Jennifer Mackrell at NZQA: (in short – read the rest on the ESS teachers facebook page) "The marking panel will ensure students are not disadvantaged in any way, if necessary adjusting the assessment schedule….Taking note of your comments about the possible variation in HR diagrams the assessment specifications for 2016 will state that the HR diagram provided will show either luminosity or absolute magnitude against increasing surface temperature."		Brightness on HR diagram. Should not happen. Incorrect astrophysics.
2 Formation of a solar system		
Nice context as Matariki Factors that affect planetary formation. Stages Sizes & composition all very straightforward.	Too small space for diagram. Matariki picture could be smaller and space for diagram should be about 1/3 of a page.	
3 Black Holes		
Nice, straightforward question. We like it.	Diagram space too small again.	

91193 – Physical principles

Plus	Minus	GRRR
1 Greenhouse effect		
Seems like a relatively straightforward question. Title gives good indication of what question is about.	Diagram unclear representation of GHE 2nd Bullet point about CO2 is too brief – are they referring to conduction? Convection? Space too small for annotated diagram	
2 Onshore winds		

Nice picture of bentover trees. Straightforward enough re heating of earth and ocean.		3rd bullet point asking about pressure differentials is not a level 2 concept. It is a level 3 Atmosphere concept. It is way off piste. Doesn't really relate to the question.
3 Red sky		
Nice colour diagram. Bullet points clear Last 2 bullet points good.	Sunlight doesn't take into account the EM spectrum. Using primary colours is really simplifying it. 4 bullet points is a LOT for students to answer. They tend to write about each one as it comes rather than structuring a coherent explanation. Space for diagram far too small. Very difficult to do a diagram of distance light travels through the atmosphere in that little space.	

Level 3

91413 Oceans

Plus	Minus	GRRR
1 Thermohaline		

Excellent diagram More than ample scaffolding for all ability students to give it a fair shot.	It is a lot of writing – lots of bullet points. Perhaps a clue in each bullet point whether you are looking for explanations or more descriptive answers.	
2 ENSO		
Great question Clear that they are explaining in their answer. Straightforward bullet points.	Large amount of writing, but lots of room provided.	
3 Carbon cycle		
Excellent space for diagram/equations. Good scaffolded bullet points.	Could use state in first 2 bullet points and then explain in further ones.	

91414 Atmosphere

Plus	Minus	GRRR
1 Wind belts.		
Pretty good question. Nice clear bullet points that show explain and discuss.		Surface winds in polar cells are misleading. We can see that you are trying to show Coriolis effect, but not clear easterly winds.
2 Climate change		

Bullet points are clear and well sequenced.		We are at a loss as to what on earth they want for the annotated diagram. Greenhouse effect?? No clear equatorial zone to show effect of maximum insolation at the equator. This is a very unclear diagram.
3 Convection cells		
Excellent diagram – fantastic information supplied. More than enough information in it to answer the question.		

93104 Scholarship

Plus	Minus	GRRR
1 Sediments		
Really like the integration of multiple standards in this question. Resources really useful. Good challenging question that students are able to write a lot about		
2 Atmosphere etc		
Very challenging question – much could be written using the resources, hopefully they will hit on some of the useful points!! It is very high level science for even first year uni students.	A LOT of reading required.	
3 Red Dwarfs		
Fantastic set of resources. Bullet points clear & easily linked to the resources. Nice bit of astrobiology to get them inspired. Really like the idea of developing thoughts on the 2 habitable zones.		