



## NOVA Dinosaur Apocalypse: The New Evidence Video Questions [Key]

Name: \_\_\_\_\_

Date: \_\_\_\_\_ Class: \_\_\_\_\_

An asteroid strike near present day Chicxulub in Yucatan, Mexico likely led to the extinction of the dinosaurs. In *NOVA Dinosaur Apocalypse: The New Evidence*, natural historian David Attenborough presents exciting discoveries from the Hell Creek formation in North Dakota where fossils may represent animals directly killed by the meteor impact! The fossils also provide a snapshot of a teeming community at the end of the Cretaceous Period and include iconic dinosaurs such as Triceratops and T. rex. *Select the correct multiple-choice response for each question. After the video, write the letter of each answer in the blank at the beginning of each question. The questions follow the same order as the information shown in the video.*

1. A. 66 million years ago, \_\_\_\_ hit the earth. A) an asteroid B) a solar flare C) a tsunami
2. B. Which site has sedimentary rocks rich in dinosaur remains? A) Green River B) Hell Creek C) Mason Creek
3. C. The Tanis site was named after an ancient Egyptian city and could be \_\_\_\_ of creatures killed in the asteroid strike. A) an abattoir B) a menagerie C) a mass graveyard
4. C. Which time period began around 100 million years ago and ended 66 million years ago when the dinosaurs vanished? A) Paleozoic B) Jurassic C) Late Cretaceous
5. C. What does fossil evidence tell us about Hell Creek at the end of the Late Cretaceous?  
A) A post-glacial environment recovering from an ice age B) A bleak, windswept dusty prairie similar to today C) A low-lying, marshy flood plain with river channels & vegetation
6. A. According to Steve Brusatte, how was earth an alien world 66 million years ago?  
A) There were no ice caps at the poles B) A race of cone-shaped entities once inhabited Australia  
C) Mammals had not appeared in earth history
7. B. According to Emily Bamforth, we will one day know for sure whether inferences about dinosaurs are correct or not. A) True B) False
8. C. In the freshwater environment that was the Hell Creek Formation, a "shocking red, green" shell fragment of which marine organism was found? A) Crinoid B) Trilobite C) Ammonite
9. A. Which rare element, common in asteroids, is found in the K-Pg boundary layer at Tanis?  
A) Iridium B) Radium C) Uranium
10. B. According to David Attenborough, having the K-Pg boundary dates the site to what?  
A) Sudden, catastrophic climate change B) The time when dinosaurs disappeared C) A massive solar flare
11. A. According to Brusatte, above a thin layer of rock, the K-Pg boundary, "you never find a single dinosaur bone or tooth or footprint again". A) True B) False
12. C. At Tanis, the four-foot thick layer of crumbly rock contains several geological features signifying what?  
A) An immense asteroid impact B) Several distinct episodes representing various periods of geologic time  
C) It was deposited very rapidly as in a storm or a flood
13. B. What did Attenborough compare the instant burial at Tanis to?  
A) Sinking of the Titanic B) Bodies in volcanic ash at Pompeii C) A poor scenario for fossilization
14. B. Millions of miles away and billions of years earlier, most scientists think that it all started where... when a rock got bumped into a new orbit? A) The zodiacal light B) The asteroid belt C) The Kuiper Belt
15. C. According to Sonia Tikoo, which planet, "a big bully", can influence asteroid orbits?  
A) Earth B) Mars C) Jupiter
16. A. What extraordinary thing did Robert DePalma, David Burnham, and Loren Gurche uncover, "the closest thing to getting to touch a living, breathing dinosaur"?  
A) Fossilized dinosaur skin B) Dinosaur coprolites C) A pterosaur embryo
17. C. According to Attenborough, the presence of a horn supports that the discovery is from what?  
A) Hell Creek B) The Late Jurassic C) A triceratops



18. \_\_B\_\_. Robert found jawbones in a fossilized burrow that most likely came from what animal?  
 A) Baby pterosaur B) PEDIOMYID, an early mammal C) T. rex
19. \_\_A\_\_. The long, narrow, four-toed fossil footprints were likely made by what flying reptile?  
 A) Pterosaur B) Early marsupial mammal C) Triceratops
20. \_\_C\_\_. Azhdarchids, which had up to 40-foot-long wingspans, included which animal?  
 A) Anchiornis B) Archaeopteryx C) Quetzalcoatlus
21. \_\_A\_\_. What did Robert and his team find in the "crumbly layer", the only one ever discovered in North America? A) Fossilized pterosaur egg B) A "gnarly" horn C) T. rex tooth
22. \_\_C\_\_. According to Attenborough, the Diamond Light Source synchrotron in the U.K. is a powerful research tool that acts like... A) a mighty camera B) a telescope C) a giant microscope
23. \_\_B\_\_. What did Robert do with replicas of the bones from inside the egg? A) Performed wind-tunnel tests  
 B) Built a model of the baby pterosaur C) Placed them in the synchrotron beam
24. \_\_C\_\_. What did the synchrotron chemical map of the pterosaur bones reveal?  
 A) It resembled a "little bat"  
 B) Dinosaur eggs were hard like a chicken egg  
 C) The pterosaur might have been ready to fly not long after hatching
25. \_\_A\_\_. The azhdarchid egg was perhaps soft like a turtle egg... Creatures that lay soft eggs tend to \_\_\_\_ them in order to protect them. A) bury B) guard C) nest
26. \_\_B\_\_. The asteroid's journey took it through the orbit of which neighboring planet? A) Venus B) Mars C) Jupiter
27. \_\_A\_\_. The team's prize footprint might have been made by a young... A) T. rex B) pterosaur C) duck bill dinosaur
28. \_\_C\_\_. Finding several footprints in one place... supports the idea that dinosaurs and pterosaurs were \_\_\_\_ at Hell Creek shortly before the impact. A) isolated B) declining C) thriving
29. \_\_C\_\_. After finding an almost complete fossil creature, what "potentially tricky technique" did the team use to remove the fossil? A) Total success B) In situ removal C) Liquid nitrogen
30. \_\_B\_\_. Fossil wood evidence pointed to the turtle having been... A) cooked B) impaled C) floating
31. \_\_B\_\_. According to Attenborough, the Tanis area had been full of dinosaurs and reptiles that had dominated the planet for how long? A) 66 million years B) More than 150 million years C) 540 million years
32. \_\_A\_\_. In which area did the asteroid hit the sea? A) Yucatan, Mexico B) North Dakota C) Arizona
33. \_\_C\_\_. The jumble of fossils is known as... A) an abattoir B) a menagerie C) a mass death assemblage
34. \_\_B\_\_. What was found between the gill bars of the Cretaceous fish?  
 A) Aerolites B) Tiny round balls of clay C) Chondrules
35. \_\_A\_\_. According to Sean Gulick, some of the material ejected from the Chicxulub impact could have ended up where? A) The moon B) Tanis C) In a museum
36. \_\_C\_\_. With the ejecta spherules, what does Robert suspect?  
 A) The Tanis site had been thriving with diverse life B) Confirmation bias tainted his conjectures  
 C) Tanis creatures died on the day of the asteroid strike
37. \_\_B\_\_. How can finding amber, small pieces of orange material, be able to help? A) Radiocarbon dates can be obtained B) It covers particles & acts as a time capsule C) Sticky resin helps a tree to protect itself
38. \_\_C\_\_. According to Gulick, the ability to use trace minerals as a way to diagnose the provenance, the place from which the rocks originally came, is... A) in its infancy B) audacious C) a pretty mature science
39. \_\_\_\_\_. According to Tikoo, matching spherules to the impact site geochemically, and in terms of radiometric ages, is what? A) A smoking gun B) Ambitious C) Too tentative

