

26. Chapter: Reading comprehension

Q.No	Question	Marks
Multiple Choice Question		
	<p>Read the passage given below and answer the questions that follow. Volcanoes, not Asteroids, May Have Taken Out the Dinosaurs</p> <p>Dinosaurs died gradually from climate change caused by a series of severe volcanic eruptions in the Deccan traps in India at the end of the Cretaceous period, says Gerta Keller, professor at Princeton University. This theory debunks the long-held notion that dinosaurs died due to climate change when a giant meteor hit the Yucatan region of Mexico. "The Chicxulub impact hit the Yucatan about 300,000 years before the mass extinction that included dinosaurs and therefore could not have caused it," Keller says. (1)</p> <p>Research by volcanologists shows that lava eruptions in the Deccan were not continuous but occurred in pulses, with each pulse lasting about 10 to at most a 100 years, and the pulses were separated by short periods of quiescence. New results from eight subsurface cores drilled by the Oil and Natural Gas Corporation of India, a public-sector undertaking, in the Krishna-Godavari Basin of eastern India, reveal that at least nine lava flows mark the critical volcanic phase that ended in the mass extinction. This ending phase may have occurred over as little as 10,000 to 100,000 years. During each lava eruption, fire shot up in tall columns from fissures in the Earth's surface and lofted gases into the stratosphere while the oozing lava flow as sheets, or in rivers, up to 1046 kilometers across India, and formed the longest lava flows on Earth. "Their destructive nature is evident in the marine life record: the population of marine life decreased by about 50 percent after the first of these long lava flows," says Keller. "By the time of the last lava flow, the mass extinction was complete." The sulfur dioxide gas injected into the stratosphere converted to sulfate aerosols that caused climate cooling. The cooling lasted until the sulfate aerosols were washed out as acid rain and caused the ocean to acidify in the process. (2)</p> <p>Keller doesn't disagree with scientists who believe that the Chicxulub impact affected the climate. The event would certainly have caused earthquakes, tsunamis, regional fires and injected huge quantities of sulfur dioxide into the stratosphere, causing cooling and acidification of the land and oceans. "The difference is that the quantity of gas injection from the main phase of Deccan eruptions was 30 to 100 times larger than the Chicxulub impact and occurred over a shorter geological period of time, with each pulse lasting about 10 years or more." (3)</p> <p>Up until now, sceptics have doubted whether gas from Deccan-like eruptions can reach the stratosphere, but the relatively small 1783-1784 Laki eruption in Iceland revealed that even rather small eruptions loft gases into the stratosphere. Field research by Keller and her collaborators has revealed that the mass extinction coincided with the end of the main phase of Deccan eruptions,</p>	

	<p>Suggesting that volcanism killed dinosaurs. (4)</p> <p>- <i>Author-Unknown</i></p> <p>Glossary:</p> <p><i>Chicxulub impact</i> - an event marked by a huge explosion caused by a large asteroid</p> <p><i>pulses</i> - short bursts</p>	
Q.247	<p>Choose the option that arranges the following events in the correct chronological order.</p> <p>(i) the first lava eruption that occurred in the Deccan region</p> <p>(ii) the mass extinction of dinosaurs and many other species</p> <p>(iii) the climate change caused by the volcanic eruptions in India</p> <p>(iv) the drilling of subsurface cores in the Krishna-Godavari Basin</p> <p>A. (ii) - (iv) - (iii) - (i)</p> <p>B. (iv) - (ii) - (i) - (iii)</p> <p>C. (iii) - (iv) - (i) - (ii)</p> <p>D. (i) - (iii) - (ii) - (iv)</p>	1
Q.248	<p>What does the word '<u>quiescence</u>' mean as used in paragraph 2?</p> <p>A. change</p> <p>B. inactivity</p> <p>C. confusion</p> <p>D. disturbance</p>	1
Q.249	<p>Which of the following events took place during the time of the first lava eruption in the Deccan?</p> <p>(i) the acidification of oceans</p> <p>(ii) the formation of lava sheets</p> <p>(iii) the mass extinction of species</p> <p>(iv) the release of fire from fissures</p> <p>A. only (ii) and (iv)</p> <p>B. only (iii) and (iv)</p> <p>C. only (i), (ii) and (iii)</p>	1

	D. only (ii), (iii) and (iv)	
Q.250	<p>Why does the author refer to the 1783-1784 Laki eruption in the passage?</p> <p>A. to criticize the viewpoint that diverges from the findings of Keller’s research</p> <p>B. to propose an alternative way of exploring the properties of the stratosphere</p> <p>C. to acknowledge a drawback in the field research done by Keller and her team</p> <p>D. to show that there are findings to corroborate the new theory proposed by Keller</p>	1
Q.251	<p>Which of these best describes the author’s tone in the passage?</p> <p>A. sarcastic</p> <p>B. concerned</p> <p>C. awestruck</p> <p>D. compelling</p>	1
Q.252	<p>Which of these statements is true about the final stage of volcanic eruptions in the Deccan?</p> <p>A. They occurred over a relatively small period of time.</p> <p>B. They occurred as a continuous flow without any interruptions.</p> <p>C. They resembled the eruptions in Iceland in terms of magnitude.</p> <p>D. They released an insignificant amount of gases into the atmosphere.</p>	1
Q.253	<p>Which of these can be another suitable title of the passage?</p> <p>A. Reinventing the Life and Characteristics of Extinct Species</p> <p>B. The Current Theory of Dinosaur’s Extinction Looks to India</p> <p>C. The Chicxulub Impact and its Environmental Consequences</p> <p>D. Understanding Major Mass Extinctions that Shaped the Earth</p>	1
Q.254	<p>Which of the following does NOT reflect Gerta Keller’s viewpoint on the Chicxulub impact?</p> <p>A. It contributed to climate change.</p> <p>B. It caused the emission of sulphur dioxide.</p> <p>C. It caused acidification of land and oceans.</p> <p>D. It led to the phenomenon of mass extinction.</p>	1

Q.255	Based on the passage, choose an option to aptly complete the sentence below. <i>The research by Keller and her collaborators showed that the _____ of mass extinction and the Deccan eruptions overlapped with each other.</i> A. time period B. primary cause C. destructive effects D. main characteristics	1
Q.256	What is the relationship between statements (1) and (2) from the passage? <i>(1) This theory debunks the long-held notion that the dinosaurs died due to climate change when a giant meteor hit the Yucatan region of Mexico.</i> <i>(2) "The Chicxulub impact hit the Yucatan about 300,000 years before the mass extinction that included the dinosaurs and therefore could not have caused it," Keller says.</i> A. (2) revises the claim in (1) B. (2) challenges the claim in (1) C. (2) summarises the claim in (1) D. (2) elaborates on the claim in (1)	1
Free Response Question / Subjective Question		
	Read the passage given below and answer the questions that follow.	
Q.257	Cite a point of evidence which shows that the lava eruptions in the Deccan caused great damage to Earth's ecosystem. Answer in one sentence.	1
Q.258	According to Greta Keller, how did the effect caused by the Chicxulub impact differ from that of Deccan eruptions? Answer in 20–30 words.	2
Q.259	In 30–40 words, state a point of evidence from the passage to show India's contribution to Keller's research work on Deccan eruptions.	2
Q.260	Which phrase from paragraph 4 captures the statement given below? <i>The theory proposed by Greta Keller was based on observations from a real, natural environment and not a controlled environment.</i>	1

Answer Key & Marking Scheme

Q.No	Answers	Marks
Q.247	D. (i) - (iii) - (ii) - (iv)	1
Q.248	B. inactivity	1
Q.249	A. only (ii) and (iv)	1
Q.250	<p>D. to show that there are findings to corroborate the new theory proposed by Keller</p> <p>Answer and Distractor Explanations:</p> <p>Option 4 is correct because the reference about 1783-1784 Laki eruption is used to strengthen an important claim that forms the primary part of Keller's theory that climate change caused by volcanic eruptions killed dinosaurs. Students choosing this may have understood this correctly. Options 1, 2 and 3 are incorrect because they do not accurately describe the purpose of the reference made. Students choosing 1 may have been influenced by the expression 'sceptics have doubted'. Students choosing 2 may have been influenced by the reference to the stratosphere in the same sentence. Students choosing 3 may have gone by a random choice.</p>	1
Q.251	D. compelling	1
Q.252	A. They occurred over a relatively small period of time.	1
Q.253	B. The Current Theory of Dinosaur's Extinction Looks to India	1
Q.254	<p>D. It led to the phenomenon of mass extinction.</p> <p>Answer and Distractor Explanations:</p> <p>Option 4 is correct because Keller believes that Chicxulub impact did not lead to mass extinction. Students choosing this may have understood this rightly. Option 1 is incorrect because, as stated in paragraph 3, Keller believes Chicxulub impact contributed to climate change. Students choosing this may have failed to understand this. Options 2 & 3 are incorrect because, as stated in paragraphs 3 and 4, Keller believes that Chicxulub impact caused the events described in the options. Students choosing this may have failed to understand this.</p>	1

Q.255	<p>A. time period</p> <p>Answer and Distractor Explanations:</p> <p>Option 1 is correct because paragraph 4 states that 'the mass extinction coincided with the end of the main phase of Deccan eruptions'. Students choosing this have rightly understood that the reference is to the time period. Options 2, 3 and 4 are incorrect because none of these matches the meaning of the statement made in the passage.</p>	1
Q.256	<p>D. (2) elaborates on the claim in (1)</p> <p>Answer and Distractor Explanations:</p> <p>Option 4 is correct because (2) explains a primary reason for the claim made in (1). Students choosing this may have correctly understood this logical connection. Options 1, 2 and 3 are incorrect because they do not describe the correct logical connection between the sentences. Students choosing these options may have failed to understand the meaning and the purpose of one or both of the statements given.</p>	1
Q.257	<p>Sample Answer: The first of the long lava eruptions in the Deccan caused a decrease in marine life by about 50 percent, thereby damaging Earth's ecosystem.</p> <p>Content</p> <p>◆ States the impact that lava eruptions had on Earth's ecosystem (destruction of marine life/extinction of dinosaurs/climate change/acidification of oceans/acidification of land)</p> <p><i>Accept any other valid response supported by the text.</i></p>	1
Q.258	<p>Sample Answer: The difference between the effect caused by the Chicxulub impact and the Deccan eruptions comes primarily from the quantity of gas injection that took place. The gas injection from the main phase of Deccan eruptions was 30 to 100 times larger than the Chicxulub impact.</p> <p>Content</p> <p>◆ Explains the primary difference in the effect caused by the Chicxulub impact and the Deccan eruptions (the quantity of gas injection during Chicxulub impact was significantly more than that of Deccan eruptions/the time period of Deccan eruptions was comparatively shorter)</p> <p><i>Accept any other valid answer supported by the text.</i></p>	2

	<p><u>Expression</u></p> <ul style="list-style-type: none"> ◆ Presents a logical connection between the ideas [0.50 marks] ◆ Uses correct grammar, spelling and other language mechanics [0.50 marks] <p><i>Award the full allotted marks if both the criteria have been met.</i></p> <p><i>Award half of the allotted marks if only one criteria has been met.</i></p> <p><i>Award 0 marks if none of the criteria have been met.</i></p>	
Q.259	<p>Sample Answer: The passage states that the drilling in the Krishna-Godavari Basin of eastern India was done by a central public sector called the Oil and Gas Corporation of India. This shows that the Government of India had assisted Keller and her team in their research work on Deccan eruptions.</p> <p><u>Content</u></p> <ul style="list-style-type: none"> ◆ States a point of evidence to show India's assistance (the involvement of the Oil and Gas Corporation of India/the role of a central public sector called the Oil and Gas Corporation of India/the contribution of the Oil and Gas Corporation of India that operates under the Government of India) <p><i>Accept any other valid answer supported by the text.</i></p> <p><u>Expression</u></p> <ul style="list-style-type: none"> ◆ Presents a logical connection between the ideas [0.50 marks] ◆ Uses correct grammar, spelling and other language mechanics [0.50 marks] <p><i>Award the full allotted marks if both the criteria have been met.</i></p> <p><i>Award half of the allotted marks if only one criteria has been met.</i></p> <p><i>Award 0 marks if none of the criteria have been met.</i></p>	2
Q.260	<p>Sample Answer: field research</p> <p><u>Content</u></p> <ul style="list-style-type: none"> ◆ Identifies the correct word that fits the given context (field research) 	1