CLASS -XI (SCIENCE)

GEOLOGY

(As per modified Question design)

Multiple Choice Questions(Assertion and Reason Type)

1. Assertion (A) – Those organisms that possess hard parts are capable of fossilization.
   Reason (R) – The soft tissues of organisms decay quickly. 1

   A. Both (A) and (R) are true and (R) is the correct explanation of (A)
   B. Both (A) and (R) are true but (R)is not relevant with (A)
   C. Both (A) and (R) are false.
   D. (A) is false but (R) is true.

2. Assertion (A) – Minerals belonging to all crystallographic systems except the Isometric system are anisotropic in character.

   Reason (R) – Isotropic minerals which crystallized in Isometric system do not show any optical properties under crossed Nicol while examine the minerals with petrological microscope. 1

   A. (A) is correct but (R) is incorrect.
   B. (A) is incorrect but (R) is correct.
   C. Both (A) and (R) are correct and (R) is the appropriate explanation of (A)
   D. Both (A) and (R) are correct but (R) is not the appropriate explanation of (A).

Source Based Question:
Source:
When an earthquake takes place, it releases several types of waves, which are classified as Primary (P), Secondary (S), and Surface (L) waves. These waves travel in different rocks with different velocities. The Primary (P) and Secondary (S) waves are important as only they penetrate the Earth. P- waves travel about 1.7 times faster than S-waves. It is found from the seismic data that P-waves which travel approximately at the rate of rate of 6 –7 km/sec. in the outer layer of the Earth and suddenly increases its velocity to 8 km/sec. as soon as it reaches around 60 km. from the surface of the Earth. Thereafter, the P-waves proceed with an increasing velocity and attain the maximum of 13.64 km/sec. at 2900 km. level. After this level, the velocity of P-waves then suddenly falls to 8 km/sec. S-waves on the other hand, are practically stopped or deflected at this level.

Q. Interpret the internal structures of the Earth from the seismic wave's information. 3