TEST – 3 (Textbook) (SOLUTION)
(INSTA Prelims Test Series 2023)

23. Correct Answer : C

Answer Justification :

Plate margins witness several plate collisions, sliding, transformation etc that result into volcanism or earthquakes.

Some earthquakes also occur within the plates but not as frequently as on the plate margins. The mechanism is explained by the plate tectonics theory. Most of them are found in the Ring of Fire. The Ring of Fire, also referred to as the Circum-Pacific Belt, is a path along the Pacific Ocean characterized by active volcanoes and frequent earthquakes. Its length is approximately 40,000 kilometers (24,900 miles). It traces boundaries between several tectonic plates—including the Pacific, Juan de Fuca, Cocos, Indian-Australian, Nazca, North American, and Philippine Plates.

Seventy-five percent of Earth's volcanoes—more than 450 volcanoes—are located along the Ring of Fire. Ninety percent of Earth's earthquakes occur along its path, including the planet's most violent and dramatic seismic events.

The abundance of volcanoes and earthquakes along the Ring of Fire is caused by the amount of movement of tectonic plates in the area. (Most volcanoes and earthquakes in the world are located at plate margins.) Along much of the Ring of Fire, plates overlap at convergent boundaries called subduction zones. That is, the plate that is underneath is pushed down, or subducted, by the plate above. As rock is subducted, it melts and becomes magma. The abundance of magma so near to Earth's surface gives rise to conditions ripe for volcanic activity.

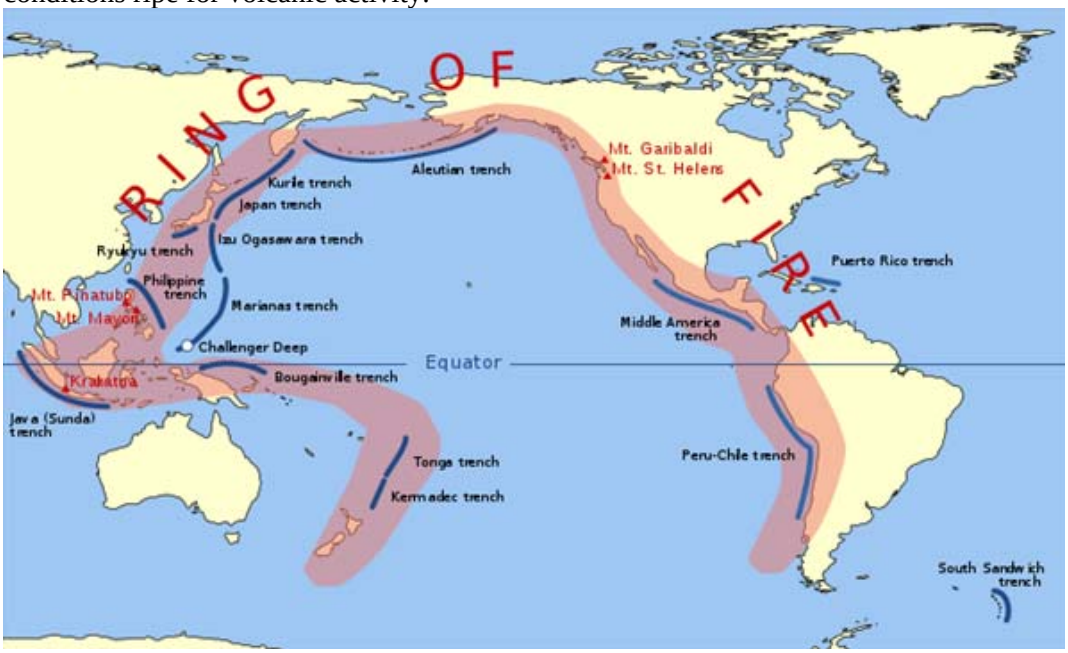

Image source: Wikimedia

Q Source: Page 8: 9th Geography NCERT

24. Correct Answer : C

Answer Justification :

The differential heating and cooling of land and water creates low pressure on the landmass of India while the seas around experience comparatively high pressure.

The shift of the position of Inter-Tropical Convergence Zone (ITCZ) in summer, over the Ganga plain (this is the equatorial trough normally positioned about 5°N of the equator – also known as the monsoon trough during the monsoon season attracts the monsoon and affects its strength.

The presence of the high-pressure area, east of Madagascar, approximately at 20°S over the Indian Ocean. The intensity and position of this high-pressure area affects the Indian Monsoon.

Also, the Tibetan plateau gets intensely heated during summer, which results in strong vertical air currents and the formation of high pressure over the plateau at about 9 km above sea level.

This also affects the strength of monsoon.

The movement of the westerly jet stream to the north of the Himalayas and the presence of the tropical easterly jet stream over the Indian peninsula during summer is another factor that changes wind flow and affects monsoon's strength.

Q Source: Page 30: 9th Geography NCERT