

GOVERNMENT OF INDIA  
MINISTRY OF EARTH SCIENCES  
**RAJYA SABHA**  
**UNSTARRED QUESTION No. - 1784**  
ANSWERED ON 22/12/2022

THREAT OF EARTHQUAKES

1784. DR. DHARMASTHALA VEERENDRA HEGGADE:

Will the Minister of Earth Sciences be pleased to state:

- (a) whether over 59 per cent of India's land area is under threat of moderate to severe earthquakes;
- (b) whether Zone V is most seismically active region in the country, if so, areas/States covered under this Zone;
- (c) percentage of areas falling under Zone II,III,IV&V approximately;
- (d) list of important cities/towns of the country that fall under the high seismic Zones of IV&V, State/UT-wise;
- (e) whether Karnataka falls in Zone II & Zone III according to Seismic Zonation Map, if so, details thereof, district-wise; and
- (f) details of steps initiated for spreading awareness about design & construction of earthquake resistant structures in the country?

**ANSWER**

THE MINISTER FOR STATE (INDEPENDENT CHARGE) FOR  
MINISTRY OF SCIENCE AND TECHNOLOGY  
AND EARTH SCIENCES  
(DR. JITENDRA SINGH)

- (a) Yes sir, the whole country has been divided into four zones viz. zone V, IV, III and II according to the seismic zoning map of India prepared by Bureau of Indian Standards (BIS). A total of ~59% of the land mass of India (covering all states of India) is prone to earthquakes of different shaking intensities.
- (b) The zone V is liable to the intensity of IX and above on the Modified Mercalli scale of intensity due to major/great earthquakes.

Details of states and areas in the country falling in zone V (based on seismic zoning map of India) are given below:

Zone V Parts of Jammu and Kashmir (Kashmir valley), western part of Himachal Pradesh, Eastern part of Uttarakhand, Rann of Kutch in Gujarat, part of Northern Bihar, all northeastern states of India and Andaman & Nicobar Islands.

- (c) Approximately, ~ 11% area of the country falls in zone V, ~18% in zone IV, ~ 30% in zone III and remaining in zone II.
- (d) List of important cities/towns of India that fall under the seismic zones of IV and V, State/UT-wise, are given in table below:

City/Town	State/UT	Zone	City/Town	State/UT	Zone
Almora	Uttrakhand	IV	Jorhat	Assam	V
Ambala	Haryana	IV	Jalpaiguri	West Bengal	IV
Amritsar	Punjab	IV	Kooch Bihar	West Bengal	IV
Baharich	Utter Pradesh	IV	Kohima	Nagaland	V
Barauni	Bihar	IV	Kolkata	West Bengal	IV
Bhuj	Gujarat	V	Ludhiana	Punjab	IV
Bulandshahr	Uttar Pradesh	IV	Mandi	Himanchal Pradesh	V
Chandigarh	Chandigarh	IV	Monghyr	Bihar	IV
Darbhanga	Bihar	V	Moradabad	Uttar Pradesh	IV
Darjeeling	West Bengal	IV	Nainital	Uttrakhand	IV
Dehradun	Uttrakhand	IV	Patna	Bihar	IV
Deoria	Uttar Pradesh	IV	Parganas	West Bengal	IV
Delhi	Delhi	IV	Pilibhit	Uttar Pradesh	IV
Dinajpur	West Bengal	IV	PortBlair	Andaman & Nicobar	V
Ghaziabad	Uttar Pradesh	IV	Roorkee	Uttrakhand	IV
Gangtok	Sikkim	IV	Sadiya	Assam	V
Guwahati	Assam	V	Simla	Himanchal Pradesh	IV
Gorakhpur	Uttar Pradesh	IV	Srinagar	Jammu & Kashmir	V
Imphal	Manipur	V	Tezpur	Assam	V

- (e) Yes Sir, Karnataka falls in Zone II & Zone III according to Seismic Zonation Map, the detail of seismic zones of Karnataka state district-wise, is given below:

	Districts of Karnataka	Seismic Zone
1	Belgaum	III, II
2	Bagalkot	III, II
3	Bijapur	II, III
4	Gulberga	II
5	Bidar	II
6	Raichur	II

7	Koppal	II
8	Gadak	II
9	Dharwad	II
10	Uttara Kannada	III, II
11	Haveri	II
12	Bellary	II
13	Chitradurga	II
14	Davanagere	II
15	Shimoga	III, II
16	Udupi	III
17	Chickmagalur	III, II
18	Tumkur	II
19	Kolar	II
20	Bangalore	III, II
21	Bangalore Rural	II
22	Mandya	II
23	Hassan	II
24	Dakshina Kannada	III, II
25	Kodagu	III, II
26	Mysore	III, II
27	Chamrajnagar	III, II

- (f) National Disaster Management Authority (NDMA) of India is engaged with conducting regular awareness campaigns every year through print, electronic as well as social media from time to time to sensitize programs on prevention and preparedness for building safety from earthquakes.

Besides, Government of India is poised to follow guidelines by the Bureau of Indian Standards (BIS), Building Materials & Technology Promotion Council (BMTPC) and Housing and Urban Development Corporation (HUDCO) etc. for design and construction of earthquake risk resistant structures to minimize the loss of life and damage to property caused by earthquakes. These guidelines are in wide circulation amongst the public and the administrative authorities responsible for the design and construction of earthquake resistant structures in earthquake prone areas.

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