

**GS Advanced Program 2023****Generic Booklet**Test Name/Code/No. : **693026 (#36)**

Name

Email ID.

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Allotted Time : 60 Minutes**Instructions to Candidates -**

- There are 7 Questions in this Question paper.
- All Questions are Compulsory.
- For all updates, please visit the noticeboard -
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Important -

- Answers must be attempted in the QCA Booklet only.
- To upload the Answer Copies please visit to "My Course" section on -
<https://academy.forumias.com/>
- Only those copies will be evaluated which will be submitted before the next class.

Q. No.	Grade/Score
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Overall Grade/Score	

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Q.1)

Covid-19 pandemic due to its rapidly spreading characteristic & economic, social & political consequences has become one of the worst humanitarian crisis in the recent past.

Unprecedented devastation of Covid-19

① Economic

- global economy shrunk by 4.4% in 2020 (IMF)
- large scale supply-chain disruptions due to demand-supply mismatches
- worldwide lockdowns ⇒ slowdown of world economy.


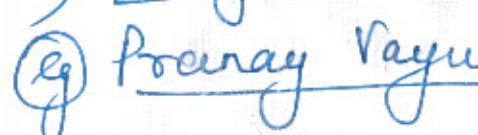
② Social

- migrant crisis, poverty, food shortages, overburdened healthcare infrastructure, closing down of educational institutions, shadow pandemic, etc.

- ③ Political → rescheduling of elections due to fear of virus spread; tussle between

centre & states, etc.

Technology to aid Covid-19 management

- 1) Aarogya Setu App → bluetooth & AI based tool to track COVID-19 patients.
 - 2) Co-WIN → Covid-19 Vaccine Intelligence Network — for efficient vaccine distribution.
 - 3) PM e-Vidya → a multi-modal education platform. Others include DIKSHA & e-Pathshala.
 - 4) Tata CRISPR → diagnostic tool based on Cas 9 protein.
 - 5) Indigenous ventilators 
 Poonay Vayu.
 - 6) CAWACH scheme by DST to ensure continued support to startups working on COVID-19.
- Thus, technological innovations played a major role in the management of pandemic.

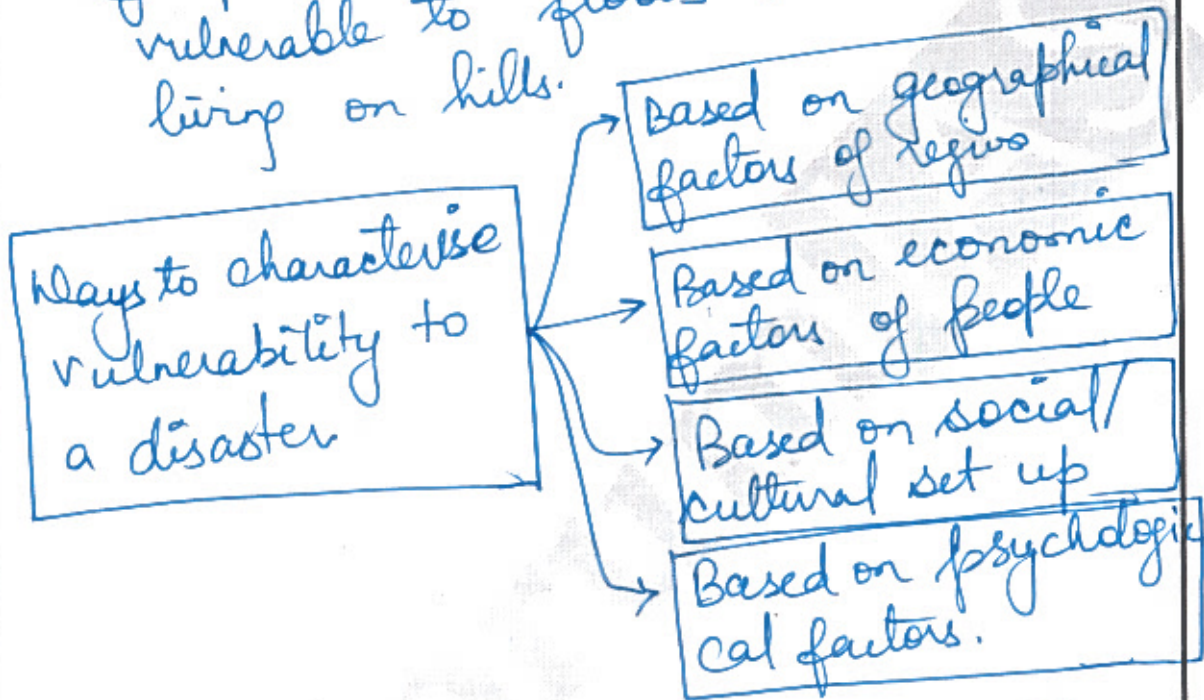
Overall Grading (✓)

Poor			Average			Good		
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Q.2)

Vulnerability refers to the inability to resist a hazard or respond to a disaster.

(eg) people living in plains are more vulnerable to floods than those living on hills.



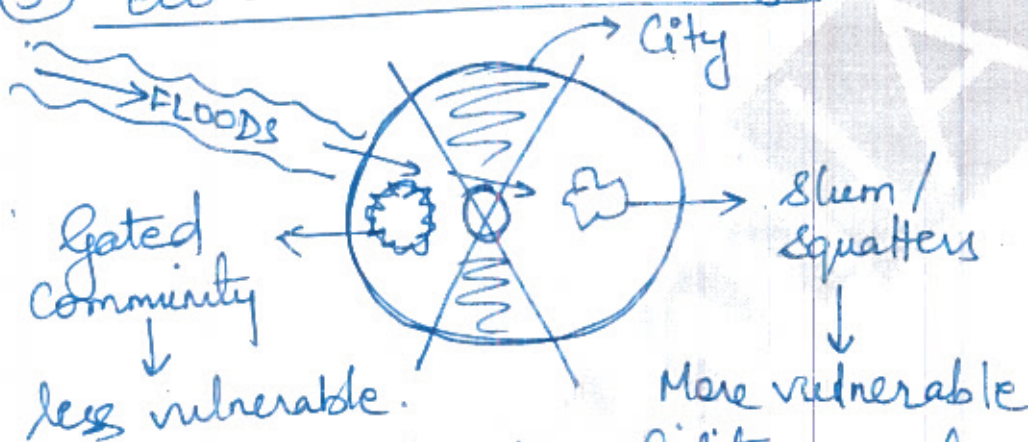
$$\frac{\text{Hazard} \times \text{Vulnerability}}{\text{Capacity}} = \text{Disaster}$$

Different types of vulnerabilities

- ① Geographical / Physical vulnerability → based on proximity to origin of disaster.
- (eg) people living on hills are more vulnerable to landslides than floods

② Social vulnerability → on account of social & cultural values & customs.
 eg SC/ST women are more prone to be affected by a disaster than a high-caste man.

③ Economic Vulnerability



④ Attitudinal Vulnerability → due to fatalistic ideology, vulnerability increases.

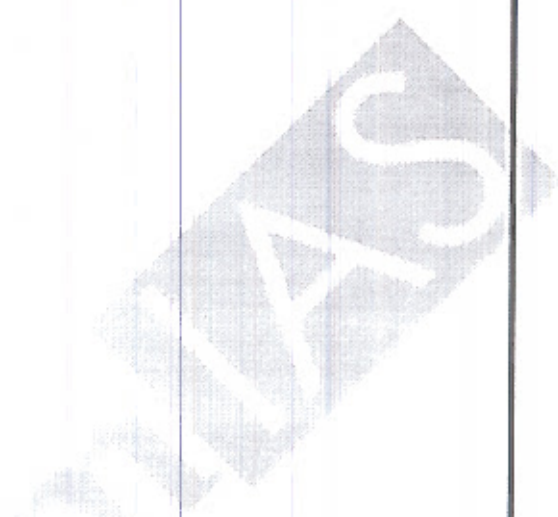
⑤ Environmental Vulnerability
 eg Wetlands more vulnerable to salination & soil degradation.

Thus, vulnerability becomes an important element to define disaster impact & its threat to people.

Overall Grading (✓)

Poor			Average			Good		
1	2	3	4	5	6	7	8	9

Q.3)



Overall Grading (√)

Poor			Average			Good		
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Q.4)

Earthquake refers to the sudden shaking of earth surface due to movements of tectonic plates along the plate boundaries.

Vulnerability of India to earthquake related hazards:

- 1) Landslides → India is highly vulnerable to landslides specially in
 - Himalayas,
 - Western Ghats,
 - Nilgiris
 - Andaman & Nicobar Islands.



Fig:- Earthquake Zones in India

- 2) Tsunami
 - (eg) 2004 Tsunami submerged India Point & devastated major portions of India.
- 3) Northern India specially regions of North East, Uttarakhand & Kashmir & parts of Bihar are in Zone V (High risk zone)

Major disasters caused by earthquakes in India

- ① Latur, 1993 in Maharashtra →
 - Earthquake of 6.3 scale magnitude
 - Cause debatable because of ~~lack~~ absence of any plate boundaries.

- ② Chamoli, Uttarakhand, 1999
 → large scale earthquake resulting in landslides.
 → huge loss to life & property.

- ③ Bhuj, Gujarat 2001
 → severe earthquake → devastated the region.

- ④ Tsunamis, 2004 → caused by underwater earthquake in Indian ocean.

- ⑤ Kashmir Earthquake, 2006 → magnitude 7.3 on RS. led to landslides & huge gross devastation.

As India lies near the plate boundary between Indian & Eurasian plates, its major part are prone to earthquakes.

Overall Grading (✓)

Poor			Average			Good		
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Q.5)

Disaster management refers to the ways to deal with human, material, economic & environmental impact of a disaster. ~~It~~ In short it means how we prepare for, respond to & learn from a disaster.

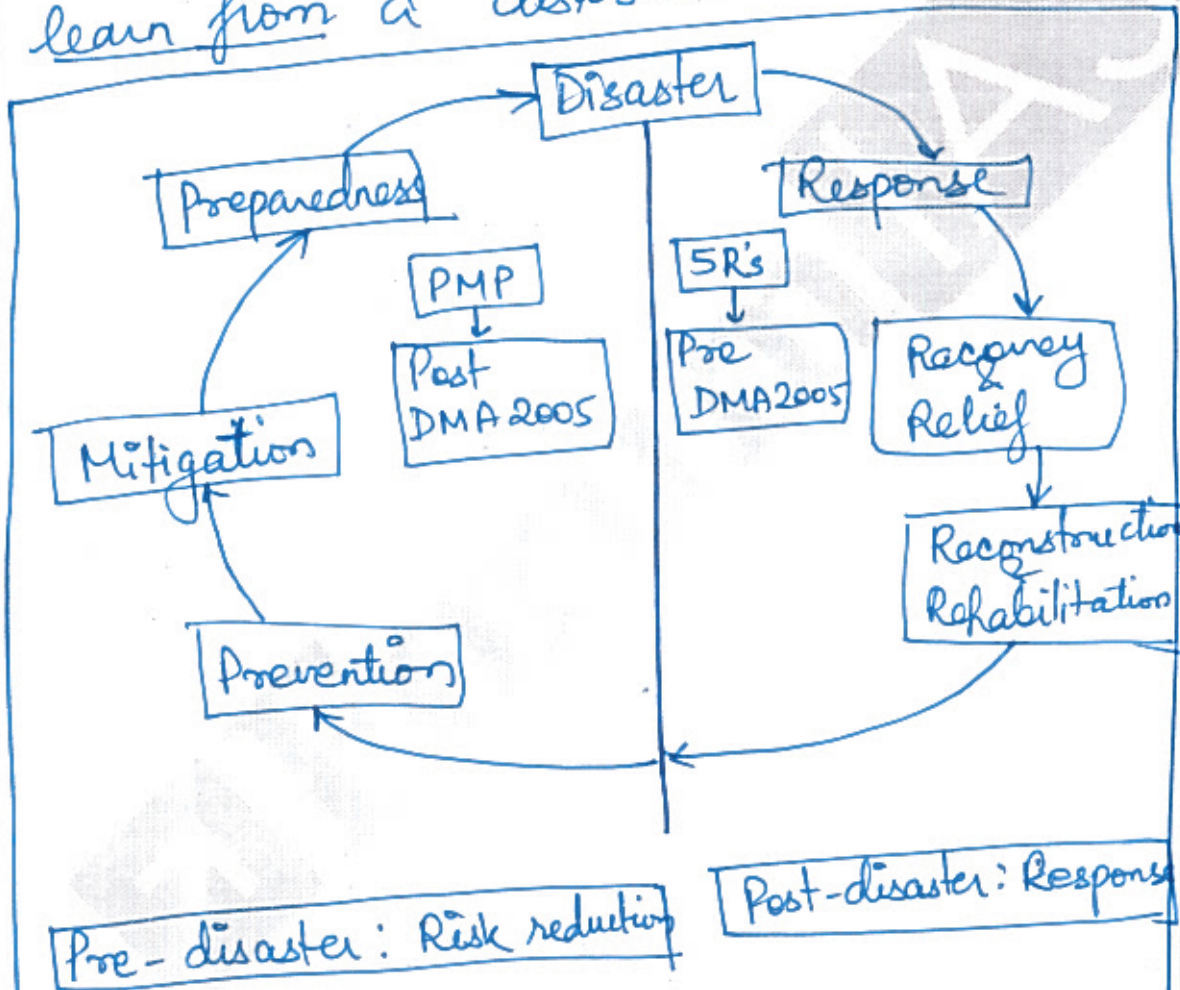


Fig:- Disaster management cycle.

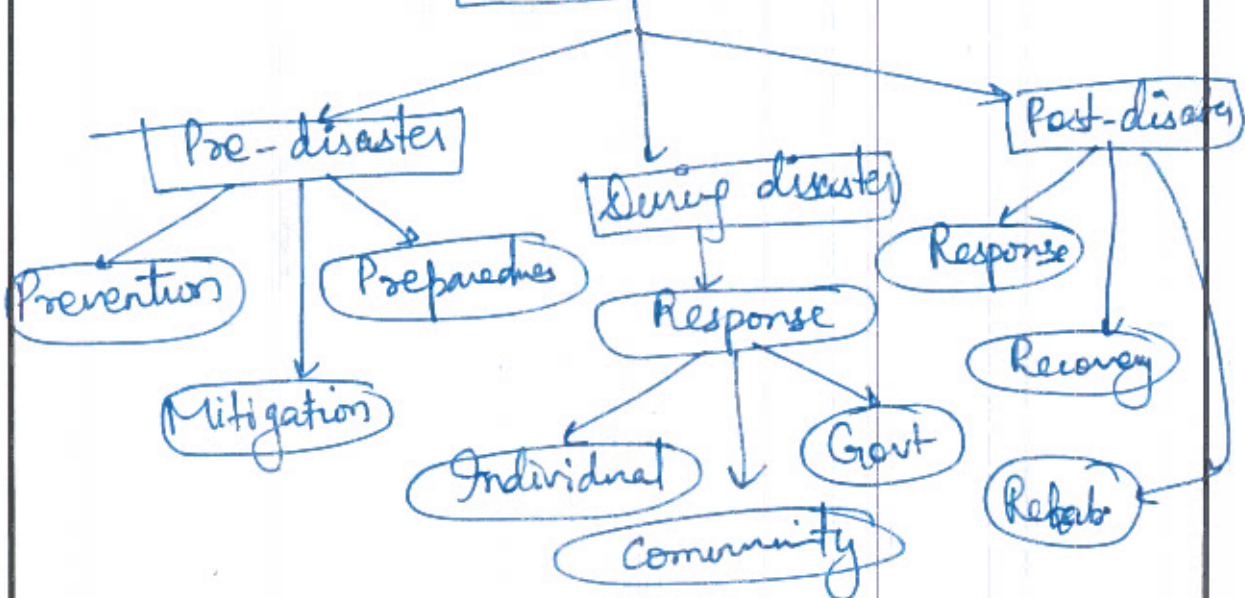
Earlier Reactive Approach
→ Prior to enactment of Disaster

Management Act, 2005, & we focussed only on Disaster response without any thought towards pre-disaster risk reduction strategies.

- Only focus was
 - ~~Disaster~~ Disaster response
 - Relief & Recovery
 - Reconstruction & Rehabilitation

Recent Measures initiated by GoI for disaster management

① Enactment of Disaster Management Act, 2005 which calls for DMA, 2005



- ② Formation of National Disaster Response Force (NDRF) & SDRF to tackle disaster hit areas.
 - ③ National Disaster Management Authority (NDMA) has been set up under chairmanship of PM. to plan & monitor disaster risk areas.
 - ④ National Executive Council & State executive council headed by ~~chief~~ home secretary & chief secretary & ~~state~~ respectively.
 - ⑤ National Disaster Response Fund (NDRF & SDRF) to mobilise funds to disaster struck areas.
 - ⑥ Apada Mitras initiative in 2016.
- Thus, recent measures initiated by govt of India are quite different from its earlier reactive approach.

Overall Grading (✓)

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Q.6)

Landslides are sudden mass move-
ment of soil down a hilly slope
due to presence of loose soil and excess
moisture.

Hazard Zonation Mapping

→ it refers to the division of
land into contiguous areas by
rating them based on degrees of
risk to potential hazard.

Landslides : How Hazard Zonation
mapping is done?

- 1.) Areas prone to earthquakes
in hilly regions.
(eg) areas around Chamoli district
of Uttarakhand.
- 2.) Areas with heavy rainfalls in
steep slopes.
- 3.) Areas undergoing extreme
human activities

(eg) roads, dams construction along mountainous regions

4.) ~~Areas~~ Hilly areas with mining activities.

(eg) Iron-ore mining is Kudremukh hills

5.) Andaman & Nicobar Islands, Himalayas, Western Ghats & Nilgiris.



Fig:- Landslide proneness due to mining.

How Hazard Zonation mapping help in landslide mitigation?

- 1.) Prohibition on mining during the days of heavy rainfalls.
- 2.) Diverting pilgrims / travellers from mapped areas during rainfalls.
- 3.) ~~A~~ Bringing a ban on construction of roads, dams, etc. in high risk zones.

4.) allows policy makers to properly plan the land-usage in the said high risk areas.

5.) allowing agriculture only at moderate slopes of hills.

6.) Afforestation programs and building bunds to reduce the flow of water.

eg Afforestation around mining areas of Nilgiris.

Thus, landslides are increasingly becoming a frequent event across hilly regions of India and a proper hazard zonation mapping can keep us prepared to mitigate this disaster. Hence, it is an effective tool for disaster risk reduction.

Overall Grading (✓)

Poor			Average			Good		
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Q.7)

Tsunamis are a series of strong waves with ~~very~~ extremely long wavelengths and long periods that are formed under water body due to an impulsive disturbance that displaces water.

Factors responsible for occurrence of Tsunamis

- 1.) Earthquakes - of magnitude greater than 7 on Richter scale under water.
- 2.) Volcanic eruptions inside a waterbody also causes tsunamis though rarely.
(eg) collapse of caldera volcano which leads to large scale water displacement
- 3.) Landslides inside steep slopes of water bodies.
- 4.) Meteorites influence on earth.
(eg) huge deposits at Gulf of Mexico caused by apparent Tsunami (5M years ago) due to meteorite impact
- 5.) Anthropogenic factors - (eg) Nuclear

Testing by USA in Marshall Islands in 1940s & 1950s led to Tsunami.

Effects of Tsunami

On Life	On Economy
<ul style="list-style-type: none"> → grave loss of human & animal lives → <u>Diseases</u> - due to flooding & destruction of sewage systems 	<ul style="list-style-type: none"> → <u>Flooding</u> → <u>Salination of soil</u> → <u>Soil degradation</u> → <u>Loss to farmer's income</u> → Subsequently endangers <u>food security</u>. → <u>Reconstruction</u> of houses & buildings require <u>huge investments</u>

NDMA (2010) guidelines provide belows mechanisms to ensure Disaster Preparedness

1.) Disaster research

- mapping of disaster prone areas
- risk and vulnerability assessment of mapped areas.
- strengthening ~~disaster~~ ^{disaster} early-warning systems.

- plans based on past history / records of disaster occurrence.
- 2.) Preparation of contingency plans
(eg) infrastructures based on design codes, etc.
 - 3.) Providing adequate support system through financial & administrative support.
 - 4.) Involvement of NGOs, civil society, etc.
 - 5.) Disaster education & awareness
 - 6.) Dissemination of disaster-related information and knowledge.

India, due to its geo-climatic & socio-economic factors is prone to varied kinds of disasters. Therefore, a proactive Disaster management plan with focus on preparation, mitigation, prevention, response & recovery must be undertaken.

Overall Grading (✓)

Poor			Average			Good		
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