

SET A

Disaster Management

1. Rapid Damage Assessment is primarily conducted during which phase of disaster management ?
 - (A) Response
 - (B) Mitigation
 - (C) Preparedness
 - (D) Rehabilitation

2. Root Cause Analysis of Disasters can be done through which of the following methods ?
 - (A) HAZOP
 - (B) Checklist
 - (C) Consequence Analysis
 - (D) Why-Why

3. Which principle advocates taking preventive precautions and avoiding unnecessary risks when the potential hazards are not yet fully known ?
 - (A) Risk Assessment Principle
 - (B) Hazard Analysis Principle
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 - (D) Guiding Principle

4. Which of the following terms refers to a mutual agreement among neighbouring industries to assist each other in the event of an emergency ?
- (A) Memorandum of Agreement
 - (B) Agreement of Mock-exercise
 - (C) Industrial Charter
 - (D) Mutual-Aid Agreement
5. Which Safety Integrity Level (SIL) is typically required for a safety function protecting against catastrophic consequences ?
- (A) SIL-4
 - (B) SIL-2
 - (C) SIL-1
 - (D) SIL-3
6. With reference to disaster warning systems, consider the following statements :
- 1. The effectiveness of an early warning system depends solely on the accuracy of hazard prediction.
 - 2. An effective warning system requires risk communication that enables timely public action.
 - 3. Communities play a critical role in determining the effectiveness of people-centred early warning systems.

Which of the statements given above is/are *correct* ?

- (A) 1 only
- (B) 2 only
- (C) 2 and 3 only
- (D) 1, 2 and 3

7. The yellow section of the NFPA 704 Hazard Identification System diamond represents :
- (A) Health Hazard
 - (B) Instability Hazard
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8. A risk of 2×10^{-4} per year is equivalent to :
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10. What is the generally accepted safe level of thermal radiation for an average human being ?
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11. How many Sustainable Development Goal (SDG) targets are directly related to Disaster Risk Reduction (DRR) ?
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 - (B) 25
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12. Which of the following volcanoes is associated with the most destructive volcanic eruption in recorded history ?
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13. In microwave remote sensing, which of the following wavelength ranges corresponds to the C-band commonly used for flood monitoring and ocean observations ?
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15. A researcher aims to develop an in-depth understanding of how indigenous communities' cultural norms, traditional knowledge systems, and everyday practices shape long-term disaster resilience within their natural setting. Which qualitative research method is most appropriate ?
- (A) Case Study
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16. The Indian Regional Navigation Satellite System (IRNSS), developed by ISRO to provide location and navigation services, even during the disasters, over India and the surrounding region, has a space segment originally consists of :
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18. Which of the following is an example of a fixed hazard ?
- (A) Forklift truck
 - (B) Crane in motion
 - (C) Chemical storage tank
 - (D) Tanker truck

19. Media coverage of disasters is generally intensive during the immediate impact but diminishes during the recovery phase. Which of the following is the most significant implication of this pattern ?
- (A) It improves the efficiency of emergency response.
 - (B) It increases community participation in reconstruction.
 - (C) It enhances the accuracy of post-disaster assessments.
 - (D) It reduces public attention and accountability for the long-term recovery needs of affected communities, particularly vulnerable groups.
20. Following a major flood, health surveillance records a delayed increase in mosquito-borne disease despite the initial destruction of breeding sites. Which ecological principle best explains this observation ?
- (A) Population rebound following habitat re-establishment
 - (B) Competitive exclusion
 - (C) Ecological succession
 - (D) Trophic cascade
21. Which of the following best explains why antimicrobial resistance (AMR) is considered a strategic priority under India's One Health Mission ?
- (A) AMR originates exclusively in hospital settings
 - (B) AMR affects only veterinary healthcare systems
 - (C) AMR can be effectively addressed through human health surveillance alone
 - (D) AMR emerges through interconnected human, animal, food, and environmental pathways, requiring coordinated multisectoral interventions

- 22.** The Modified Mercalli Intensity (MMI) Scale is primarily used to measure :
- (A) The total energy released by an earthquake
 - (B) The depth of an earthquake's focus
 - (C) The frequency of seismic waves
 - (D) The observed intensity of ground shaking and its effects at a specific location
- 23.** The Common Alert Protocol (CAP) is :
- (A) A protocol for satellite communication
 - (B) A standard for transmitting weather data only
 - (C) An international standard for exchanging and disseminating emergency alerts and public warnings
 - (D) A protocol for internet security
- 24.** What is the likely effect of exposure to chlorine gas at a concentration of approximately 2 ppm in air ?
- (A) Irritation of throat
 - (B) Intense cough and fits
 - (C) Irritation of eyes and nose
 - (D) Immediate death

25. 'HAZID' is a study conducted to identify safety hazards. Which of the following studies is used to identify environmental issues ?
- (A) ENVID
 - (B) HAZOP
 - (C) ENVDI
 - (D) ENIVD
26. According to the TM 5-1300 explosion overpressure damage criteria, an overpressure of 0.3 bar (30 kPa) is most likely to result in :
- (A) No structural damage
 - (B) Severe damage to buildings with a high probability of fatalities
 - (C) Only windows of houses will be smashed
 - (D) Only glass of doors and windows will break
27. Cause–Consequence Analysis (CCA) is a combination of which of the following risk assessment techniques ?
- (A) HAZOP and FMEA
 - (B) Fault Tree Analysis (FTA) and Event Tree Analysis (ETA)
 - (C) HAZID and ENVID
 - (D) Job Safety Analysis (JSA) and Safety Integrity Level (SIL)

- 28.** According to the National Oil Spill Disaster Contingency Plan (NOS-DCP), the Indian Coast Guard is the Central Coordinating Authority for responding to which tier(s) of oil spill contingency ?
- (A) Tier I only (B) Tier II only
- (C) Tier III only (D) Tier II and Tier III
- 29.** In uncertainty analysis, uncertainties arising from the inherent randomness in the occurrence of an incident are known as :
- (A) Epistemic uncertainty (B) Aleatory uncertainty
- (C) Model uncertainty (D) Parameter uncertainty
- 30.** Within the framework of the Disaster Management Act, 2005 and the National Disaster Management Plan (NDMP), 2019, which of the following best describes the 'subsidiarity paradox' in disaster governance ?
- (A) Disaster management powers are exercised exclusively by the Central Government
- (B) Disaster management functions are decentralized, but effective implementation depends on centralized financial and institutional support.
- (C) States possess complete fiscal autonomy for disaster management
- (D) Local authorities independently manage disasters without support from State or Central Governments

31. Which of the following best distinguishes the role of the National Executive Committee (NEC) from that of the National Disaster Management Authority (NDMA) under the Disaster Management Act, 2005 ?
- (A) NEC formulates national policies, while NDMA implements them
 - (B) NDMA formulates policies and guidelines, whereas NEC coordinates and monitors their implementation
 - (C) Both NDMA and NEC have identical statutory functions
 - (D) NEC functions only during disasters declared as national disasters
32. Why do tropical cyclones rarely develop within 5° of the Equator ?
- (A) Sea surface temperatures are too low
 - (B) Atmospheric pressure is too high
 - (C) The Coriolis force is too weak to initiate cyclonic rotation
 - (D) Wind speeds are too high
33. According to the National Disaster Management Authority (NDMA), approximately how many kilometres of India's coastline are vulnerable to cyclones and associated hazards ?
- (A) 3,700 km
 - (B) 4,200 km
 - (C) 5,700 km
 - (D) 7,500 km

34. Which of the following are the primary objectives of a Search and Rescue (SAR) team during a disaster response ?
- I. Rescue survivors trapped under debris.
 - II. Provide first aid to rescued or trapped survivors.
 - III. Recover and hand over deceased bodies for identification and disposal as per established procedures.
 - IV. Collect and verify information from all available sources to assist search and rescue operations.
- (A) I and II only
- (B) I, II and III only
- (C) II, III and IV only
- (D) I, II, III and IV
35. Which of the following statements best explains how marine cloud brightening contributes to climate change mitigation ?
- (A) It increases atmospheric carbon dioxide uptake by oceans.
- (B) It enhances terrestrial carbon sequestration.
- (C) It increases cloud reflectivity by generating smaller cloud droplets, thereby increasing the Earth's albedo.
- (D) It absorbs outgoing terrestrial radiation in the upper atmosphere.

36. A homogeneous slope composed of dry cohesionless soil has its inclination increased while all other soil properties remain unchanged. Which of the following best describes the effect on slope stability ?
- (A) Both the driving shear stress and the shear strength increase proportionally.
 - (B) The shear strength decreases because of the increased inclination.
 - (C) The normal stress increases sufficiently to maintain the original factor of safety.
 - (D) The driving shear stress increases, whereas the available shear strength is governed by the soil's shear strength parameters; consequently, the factor of safety decreases.
37. A state government introduces legislation to improve political representation, economic opportunities, and social participation for persons with disabilities, minority communities, and economically disadvantaged groups. Which SDG Target is most directly addressed by this initiative ?
- (A) SDG Target 10.1
 - (B) SDG Target 10.2
 - (C) SDG Target 10.4
 - (D) SDG Target 16.7

38. Which of the following best explains why the Sendai Framework and Article 11 of the Convention on the Rights of Persons with Disabilities (CRPD) advocate disability-inclusive disaster risk reduction rather than simply grouping persons with disabilities under 'vulnerable populations' ?
- (A) Disability-inclusive approaches reduce the financial burden of disaster management
 - (B) They eliminate the need for targeted rehabilitation programmes
 - (C) They recognize persons with disabilities as active stakeholders with diverse needs requiring accessible and inclusive planning
 - (D) They transfer disaster management responsibilities from governments to civil society
39. Which of the following best justifies the inclusion of the Sendai Framework, Sustainable Development Goals, Paris Agreement, and the Prime Minister's 10-Point Agenda in the National Disaster Management Plan (NDMP), 2019 ?
- (A) To establish independent sectoral policies for disaster response.
 - (B) To replace state disaster management plans with a national framework.
 - (C) To integrate disaster risk reduction, climate change adaptation, and sustainable development into a comprehensive national disaster management strategy.
 - (D) To standardize disaster response procedures across all countries.

40. Following a major earthquake, a government rebuilds damaged infrastructure using hazard-resistant designs, revised building codes, and improved land-use planning to reduce future disaster risk. This strategy exemplifies the principle of "Build Back Better" during which phase of disaster management ?
- (A) Mitigation (B) Preparedness
(C) Response (D) Reconstruction
41. A humanitarian relief agency adopted a single-sourcing strategy to reduce procurement costs. During a disaster, the supplier was unable to deliver essential supplies. Which principle of supply chain resilience was overlooked ?
- (A) Inventory optimization
(B) Demand forecasting
(C) Diversification of supply sources to reduce vulnerability
(D) Reverse logistics
42. Which of the following best explains why indigenous knowledge continues to be relevant in contemporary disaster risk reduction despite advances in scientific forecasting ?
- (A) Indigenous knowledge is more accurate than scientific models
(B) Scientific forecasting has limited application in developing countries
(C) Indigenous knowledge provides locally adapted risk perception and coping mechanisms that complement scientific information.
(D) Indigenous knowledge eliminates the need for disaster preparedness planning

43. A disaster communication system aims to enhance community resilience by promoting dialogue, trust, and local participation rather than merely broadcasting warnings. Which approach best meets this objective ?
- (A) Community radio using collaborative and horizontal communication
 - (B) Centralized national media campaign
 - (C) Commercial FM radio broadcasting
 - (D) One-way dissemination through official press releases
44. With reference to Köppen's and Thornthwaite's climate classification schemes, consider the following statements :
1. Köppen's classification primarily relates climate to natural vegetation through temperature and precipitation.
 2. Thornthwaite's classification incorporates potential evapotranspiration to assess moisture availability.
 3. Thornthwaite's classification does not consider water balance.
- Which of the statement(s) given above is/are *correct* ?
- (A) 1 only
 - (B) 1 and 2 only
 - (C) 2 and 3 only
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45. Which of the following policy options would most effectively enhance long-term cyclone resilience in a vulnerable coastal region ?
- (A) Increasing the number of cyclone shelters alone.
 - (B) Strengthening embankments and seawalls alone.
 - (C) Improving cyclone forecasting and warning systems alone.
 - (D) Integrating ecosystem restoration, resilient infrastructure, early warning systems, and community-based preparedness into development planning.

46. Which of the following policy options best reflects a comprehensive approach to cyclone risk reduction in accordance with modern disaster risk management principles ?

- (A) Integrating ecosystem-based risk reduction, resilient infrastructure, risk-informed land-use planning, multi-hazard early warning systems, and community-based preparedness into development planning
- (B) Prioritizing cyclone shelters and evacuation infrastructure while strengthening post-disaster relief capacity
- (C) Expanding coastal protection structures and investing in advanced cyclone forecasting technologies
- (D) Conserving coastal ecosystems, enforcing hazard-resistant building regulations, and strengthening emergency response mechanisms

47. With reference to women's health in conflict and disaster situations, consider the following statements :

- 1. Increased maternal mortality is primarily attributable to displacement rather than disruption of health services.
- 2. Conflict may, under certain circumstances, reduce the transmission of HIV by isolating affected populations.
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48. A State Forest Department has limited financial resources to reduce the frequency and spread of forest fires. Which intervention is likely to provide the greatest long-term benefit ?
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49. With reference to Hazard Identification and Risk Analysis (HIRA), which one of the following statements is most appropriate for a hazard with catastrophic consequences but very low probability ?
- (A) It may be ignored because its occurrence is unlikely.
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- P.T.O.**

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- (A) Forklift truck
 - (B) Crane in motion
 - (C) Chemical storage tank
 - (D) Tanker truck

45. Media coverage of disasters is generally intensive during the immediate impact but diminishes during the recovery phase. Which of the following is the most significant implication of this pattern ?
- (A) It improves the efficiency of emergency response.
 - (B) It increases community participation in reconstruction.
 - (C) It enhances the accuracy of post-disaster assessments.
 - (D) It reduces public attention and accountability for the long-term recovery needs of affected communities, particularly vulnerable groups.
46. Following a major flood, health surveillance records a delayed increase in mosquito-borne disease despite the initial destruction of breeding sites. Which ecological principle best explains this observation ?
- (A) Population rebound following habitat re-establishment
 - (B) Competitive exclusion
 - (C) Ecological succession
 - (D) Trophic cascade
47. Which of the following best explains why antimicrobial resistance (AMR) is considered a strategic priority under India's One Health Mission ?
- (A) AMR originates exclusively in hospital settings
 - (B) AMR affects only veterinary healthcare systems
 - (C) AMR can be effectively addressed through human health surveillance alone
 - (D) AMR emerges through interconnected human, animal, food, and environmental pathways, requiring coordinated multisectoral interventions

48. The Modified Mercalli Intensity (MMI) Scale is primarily used to measure :
- (A) The total energy released by an earthquake
 - (B) The depth of an earthquake's focus
 - (C) The frequency of seismic waves
 - (D) The observed intensity of ground shaking and its effects at a specific location
49. The Common Alert Protocol (CAP) is :
- (A) A protocol for satellite communication
 - (B) A standard for transmitting weather data only
 - (C) An international standard for exchanging and disseminating emergency alerts and public warnings
 - (D) A protocol for internet security
50. What is the likely effect of exposure to chlorine gas at a concentration of approximately 2 ppm in air ?
- (A) Irritation of throat
 - (B) Intense cough and fits
 - (C) Irritation of eyes and nose
 - (D) Immediate death