

Code No.	<b>L – 4035</b>
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**Entrance Examination for Admission to the P.G. Courses in the Teaching Departments, 2021**

**CSS**

**ENVIRONMENTAL SCIENCES/CLIMATE CHANGE AND DISASTER MANAGEMENT**

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**General Instructions**

1. The Question Paper is having two Parts — Part 'A' Objective type (60%) & Part 'B' Descriptive type (40%).
2. Objective type questions which carry 1 mark each are to be (✓) 'tick marked' in the response sheets against the appropriate answers provided.
3. 8 questions are to be answered out of 12 questions carrying 5 marks each in Part 'B'.
4. **Negative marking** : 0.25 marks will be deducted for each wrong answer in Part 'A'.

**Time : 2 Hours**

**Max. Marks : 100**

To be filled in by the Candidate									
Register Number	in Figures								
	in words								

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**PART – A**  
(Objective Type)

Choose appropriate answer from the options in the questions. **One mark each.**  
**(60 × 1 = 60 marks)**

1. In ecological succession from pioneer to climax community, the biomass shall
 

a) Decrease	b) Increase and then Decrease
c) No relation	d) Increase continuously
e) None of these	

**DO NOT WRITE HERE**

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2. The abundance of a species population within its habitat is called

- a) Niche density
- b) Absolute density
- c) Relative density
- d) Regional density
- e) None of these

3. Niche of an organism is

- a) Address
- b) Profession
- c) Location
- d) Range
- e) None of these

4. Primary productivity of ecosystem refers to:
- a) Increase in primary consumers
  - b) Net production of primary producers
  - c) CO<sub>2</sub> fixation of organic carbon
  - d) Increase in mortality of primary producers
  - e) None of these
5. Fungal association of roots of higher plants in mycorrhiza is
- a) Parasitism
  - b) Hyperparasitism
  - c) Mutualism
  - d) Commensalism
  - e) Amensalism
6. Plants which are attached to stone and rocks are
- a) Aerophytes
  - b) Psammophytes
  - c) Halophytes
  - d) Lithophytes
  - e) None of the above
7. Most of the number of species in a community, more will be
- a) Competition
  - b) Biotic stability
  - c) Short term adaptation
  - d) Biotic unstability
  - e) None of these
8. Ministry of Non-Conventional Energy Resources was created in
- a) 1992
  - b) 1990
  - c) 1978
  - d) 2001
  - e) 2010
9. India has largest supply of which mineral, next to Russia
- a) Chromite
  - b) Manganese
  - c) Coal
  - d) All of these
  - e) None of these

10. The in-exhaustive, non-conventional source of energy is/are
- a) Solar radiations
  - b) Wind power
  - c) Sea tides
  - d) All of these
  - e) None of these
11. The idea of OTEC was first proposed in the year
- a) 1929
  - b) 1880
  - c) 1910
  - d) 1950
  - e) 1992
12. How many hot spots have been identified in the world and Indian Subcontinent respectively?
- a) 17, 2
  - b) 12, 3
  - c) 35, 2
  - d) 17, 3
  - e) 2, 17
13. Endemic species are
- a) Uniformly distributed across the land scape
  - b) Widely distributed
  - c) Restricted to a particular area
  - d) Continuously distributed globally
  - e) None of these
14. Red data book contains data of
- a) All plant species
  - b) All animal species
  - c) Economically important species
  - d) threatened species
  - e) None of these
15. The great Indian Rhino has its natural home in:
- a) Kaziranga National Park
  - b) Corbett National Park
  - c) Sunderbans
  - d) Kanha National Park
  - e) None of these

16. The intensity of earthquake is measured by
- a) Mercalli scale
  - b) Richter Scale
  - c) Sonometer
  - d) Both (a) and (b)
  - e) Both (a) and (c)
17. The earth system is highly
- a) Static
  - b) Complex
  - c) Dynamic
  - d) Unidirectional
  - e) None of these
18. Disaster Management Act in India came into existence in the year
- a) 2003
  - b) 2005
  - c) 1998
  - d) 2007
  - e) 2006
19. The main cause of volcanic activity is
- a) Faulting
  - b) Movement of earth's plates
  - c) Movement of sun
  - d) All of these
  - e) None of the above
20. Which one of the following cause global warming?
- a) Carbon dioxide
  - b) Oxygen
  - c) Nitrogen
  - d) Hydrogen
  - e) None of the above
21. Changes in the composition of the atmosphere is an example of
- a) Internal forcing
  - b) External forcing
  - c) Mid forcing
  - d) Gravitational forcing Climate
  - e) None of the above

22. Which radioactive element is considered as an indoor pollutant
- a) Oxygen - 18
  - b) Nitrogen - 15
  - c) Carbon - 13
  - d) Carbon -14
  - e) Radon
23. National Pollution Prevention Day
- a) 5<sup>th</sup> June
  - b) 2<sup>nd</sup> December
  - c) 22<sup>nd</sup> May
  - d) 21<sup>st</sup> March
  - e) None of the above
24. Nudation is generally caused by
- a) migration of species
  - b) climate change
  - c) invasion of foreign species
  - d) modifications of habitat
  - e) None of these
25. Which pollutant causes leaf curling?
- a) CO
  - b) H<sub>2</sub>S
  - c) O<sub>3</sub>
  - d) SO<sub>2</sub>
  - e) NO<sub>2</sub>
26. When DDT enters the human body, it is
- a) Water soluble and easily excreted in urine
  - b) Stored in the bones
  - c) Fat soluble and stored in fat tissues
  - d) Processed by enzymes and becomes a different compound which is toxic
  - e) None of these
27. Walkley and Black rapid titration method is used for the determination of
- a) Organic carbon content of soil
  - b) Nitrate content of soil
  - c) Phosphate content of soil
  - d) Fluoride content of soil
  - e) None of these

28. Which one of the following chemical species of mercury is highly toxic to living system?
- a) Mercurous ion
  - b) Mercuric ion
  - c) Organo mercurials
  - d) Atomic mercury
  - e) None of these
29. Blue baby syndrome is caused by
- a) Carbon monoxide
  - b) Nitrate
  - c) Fluoride
  - d) Mercury
  - e) None of these
30. In various chemical forms of chromium which one is more toxic
- a) Cr (II)
  - b) Cr (III)
  - c) Cr (VI)
  - d) Cr (IV)
  - e) None of these
31. Name of the chemical which is involved in Bhopal gas tragedy
- a) Methyl isocyanate
  - b) Nitrogen monoxide
  - c) Smog
  - d) Methane
  - e) None of these
32. Greenhouse gases consist of
- a) CO<sub>2</sub>
  - b) CO
  - c) CFC
  - d) All the above
  - e) None of these
33. Chemiluminescence method is particularly applied for the estimation of
- a) CO
  - b) SO<sub>2</sub>
  - c) NO<sub>x</sub>
  - d) CO<sub>2</sub>
  - e) None of these

34. Progressive increase in concentration of a xenobiotic compound when it passes through the food chain is called
- a) Biomagnification
  - b) Hyper accumulation
  - c) Bioaccumulation
  - d) All of these
  - e) None of these
35. Mottling of teeth is due to presence of an element in drinking water
- a) Mercury
  - b) Fluorine
  - c) Boron
  - d) Chlorine
  - e) None of these
36. The level of noise can be tolerated by human ear
- a) 80 dB
  - b) 120 dB
  - c) 20 dB
  - d) 100 dB
  - e) 40 dB
37. Which one of the following is a waste recycling method of solid waste management?
- a) Pelletisation
  - b) Composting
  - c) Incineration
  - d) Sanitary Landfill
  - e) None of these
38. A hazardous waste is characterised by
- a) Ignitibility
  - b) Reactivity
  - c) Toxicity
  - d) All of the above
  - e) None of these
39. Which one of the following pesticides persists for a long period in soil?
- a) Lindane
  - b) Monocrotophos
  - c) Carbaryl
  - d) Parathion
  - e) None of these



40. The colour code of the container for collection of waste scrap generated from Hospitals is
- a) Red
  - b) Blue
  - c) White
  - d) Green
  - e) None of these
41. The percentage of dissolved oxygen in the environment is
- a) 22%
  - b) 18%
  - c) 0.003%
  - d) 79%
  - e) 33%
42. Lead in water can cause
- a) Black foot disease
  - b) Hair falling
  - c) Eye disease
  - d) Minamata disease
  - e) Kidney damage
43. Common indicator organism of water pollution
- a) *Bacillus cereus*
  - b) *Salmonella typhi*
  - c) *Vibrio cholerae*
  - d) *Escherichia coli*
  - e) None of these
44. BOD of the effluents discharged on land for irrigation should not exceed
- a) 30 mg/L
  - b) 100 mg/L
  - c) 300 mg/L
  - d) 60 mg/L
  - e) None of these
45. Which is a way Pesticides kill insects?
- a) Mouth
  - b) Contact
  - c) Breathing
  - d) All of the Above
  - e) None of the above

46. The mineral rich in eutrophication is
- a) Sulphate
  - b) Phosphate
  - c) Nitrate
  - d) Nitrite
  - e) None of these
47. The effect of interspecific competition on niches is to make them
- a) Larger
  - b) Smaller
  - c) More triangular
  - d) Change location
  - e) None of these
48. Phosphorous cycle absorbs phosphates in the form of
- a)  $\text{HPO}_3^-$
  - b)  $\text{P}_2$
  - c)  $\text{PO}_4^{3-}$
  - d)  $\text{AlPO}_4$
  - e) None of these
49. Agrobacterium is involved in which of the following processes?
- a) Ammonification
  - b) Nitrification
  - c) Reduction of nitrate to ammonia
  - d) Denitrification
  - e) None of the above
50. Which organism is called as super pug?
- a) *Pseudomonas putida*
  - b) *E.coli*
  - c) *Enterobacter*
  - d) *Pseudomonas auroginosa*
  - e) None of these
51. Bioaugmentation is a process that involves
- a) Using plants for bioremediation
  - b) Bioventing
  - c) Sludge removal
  - d) Adding microbes to cleanup site
  - e) Ex-situ bioremediation

52. World Summit on sustainable development was held at
- a) Johannesburg in 2002
  - b) Rio de Janeiro in 1992
  - c) Kyoto in 1994
  - d) Stockholm in 2000
  - e) None of these
53. ISO 14040 is
- a) Environmental Management : Life cycle assessment principle and framework.
  - b) Environmental Management - environmental assessment of sites and organization.
  - c) Guidelines for environmental audit - general principle.
  - d) Environmental Management - vocabulary.
  - e) None of the above
54. EIA of mining activities involve impact assessment on
- a) Geological Environment
  - b) Biological Environment
  - c) Aerial Environment
  - d) All the above
  - e) None of the above
55. The effluent and emission standards for industries have been notified under
- a) The Environment (Protection) Act, 1986.
  - b) Motor Vehicle Act, 1988.
  - c) The Air (Prevention and Control of Pollution) Act, 1981.
  - d) The Water (Prevention and Control of Pollution) Act, 1974.
  - e) None of these

56. The wildlife protection act was amended in the year
- a) 1948
  - b) 2002
  - c) 2012
  - d) 1972
  - e) None of these
57. Dioxin is a/an
- a) Pesticide
  - b) Petrochemicals
  - c) Heavy metal
  - d) An organic chemicals
  - e) None of the above
58. The newspaper contains one of the following toxic materials, It is :
- a) Cd
  - b) Pb
  - c) Mg
  - d) Hg
  - e) None of these
59. If the size of the sample is very small which method of sampling gives better results?
- a) Census
  - b) Random
  - c) Stratified
  - d) Purposive
  - e) None of the above
60. The significance of the difference between two means populations, when  $S^2$  values are known and equal, is tested by:
- a) z-test
  - b) t-test
  - c) f-test
  - d)  $x^2$  - test
  - e) None of the above

ANSWER SHEET — PART — A

1	A	B	C	D	E
2	A	B	C	D	E
3	A	B	C	D	E
4	A	B	C	D	E
5	A	B	C	D	E
6	A	B	C	D	E
7	A	B	C	D	E
8	A	B	C	D	E
9	A	B	C	D	E
10	A	B	C	D	E
11	A	B	C	D	E
12	A	B	C	D	E
13	A	B	C	D	E
14	A	B	C	D	E
15	A	B	C	D	E
16	A	B	C	D	E
17	A	B	C	D	E
18	A	B	C	D	E
19	A	B	C	D	E
20	A	B	C	D	E

21	A	B	C	D	E
22	A	B	C	D	E
23	A	B	C	D	E
24	A	B	C	D	E
25	A	B	C	D	E
26	A	B	C	D	E
27	A	B	C	D	E
28	A	B	C	D	E
29	A	B	C	D	E
30	A	B	C	D	E
31	A	B	C	D	E
32	A	B	C	D	E
33	A	B	C	D	E
34	A	B	C	D	E
35	A	B	C	D	E
36	A	B	C	D	E
37	A	B	C	D	E
38	A	B	C	D	E
39	A	B	C	D	E
40	A	B	C	D	E

41	A	B	C	D	E
42	A	B	C	D	E
43	A	B	C	D	E
44	A	B	C	D	E
45	A	B	C	D	E
46	A	B	C	D	E
47	A	B	C	D	E
48	A	B	C	D	E
49	A	B	C	D	E
50	A	B	C	D	E
51	A	B	C	D	E
52	A	B	C	D	E
53	A	B	C	D	E
54	A	B	C	D	E
55	A	B	C	D	E
56	A	B	C	D	E
57	A	B	C	D	E
58	A	B	C	D	E
59	A	B	C	D	E
60	A	B	C	D	E



# ENVIRONMENTAL SCIENCES/CLIMATE CHANGE AND DISASTER MANAGEMENT

## PART – B

(Descriptive Type)

Answer **any eight** questions.

**(8 × 5 = 40 Marks)**

1. Explain the biotic and abiotic components of terrestrial ecosystem
2. Write short note on (i) Mutualism (ii) competition
3. Explain about in-situ and ex-situ conservation
4. Write an essay on effects of air pollution in plants and human beings
5. Write in briefly about sources, effects and control of noise pollution
6. Explain the method of determination of COD and BOO
7. Write short note on ground water pollution
8. Enlist the physical, chemical and biological properties of wastewater
9. Describe the nitrogen cycle and sulphur cycle
10. What is bioremediation? Write an essay on genetically engineered microorganisms and their advantages.
11. What are steps involved in conducting EIA studies? Explain in detail.
12. Define: hazardous waste. Explain in detail about management of hazardous waste



























