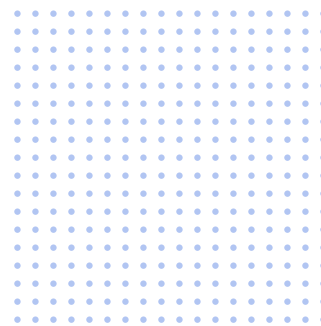




FOR KUET EXAM PREPARATION

# KUET 2023

## Question Paper · M.Sc. Environmental Science

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| EXAM | YEAR | TYPE           | SUBJECT                     |
|------|------|----------------|-----------------------------|
| KUET | 2023 | Question Paper | M.Sc. Environmental Science |

Sr. No. ....

**ENTRANCE TEST-2023****SCHOOL OF ENVIRONMENTAL AND EARTH SCIENCES****ENVIRONMENTAL SCIENCE****Question Booklet Series****A****Total Questions : 60****Time Allowed : 70 Minutes****Roll No. :**

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**Instructions for Candidates :**

1. Write your Entrance Test Roll Number in the space provided at the top of this page of Question Booklet and fill up the necessary information in the spaces provided on the OMR Answer Sheet.
2. OMR Answer Sheet has an Original Copy and a Candidate's Copy glued beneath it at the top. While making entries in the Original Copy, candidate should ensure that the two copies are aligned properly so that the entries made in the Original Copy against each item are exactly copied in the Candidate's Copy.
3. All entries in the OMR Answer Sheet, including answers to questions, are to be recorded in the Original Copy only.
4. Choose the correct / most appropriate response for each question among the options A, B, C and D and darken the circle of the appropriate response completely. The incomplete darkened circle is not correctly read by the OMR Scanner and no complaint to this effect shall be entertained.
5. Use only blue/black ball point pen to darken the circle of correct/most appropriate response. In no case gel/ink pen or pencil should be used.
6. Do not darken more than one circle of options for any question. A question with more than one darkened response shall be considered wrong.
7. There will be '**Negative Marking**' for wrong answers. Each wrong answer will lead to the deduction of 0.25 marks from the total score of the candidate.
8. Only those candidates who would obtain positive score in Entrance Test Examination shall be eligible for admission.
9. Do not make any stray mark on the OMR sheet.
10. Calculators and mobiles shall not be permitted inside the examination hall.
11. Rough work, if any, should be done on the blank sheets provided with the question booklet.
12. OMR Answer Sheet must be handled carefully and it should not be folded or mutilated in which case it will not be evaluated.
13. Ensure that your OMR Answer Sheet has been signed by the Invigilator and the candidate himself/herself.
14. At the end of the examination, hand over the OMR Answer Sheet to the invigilator who will first tear off the original OMR sheet in presence of the Candidate and hand over the Candidate's Copy to the candidate.

**SM-29551-A****1****[Turn over**

1. Which of the following equipment is used for measuring atmospheric humidity?
  - (A) Anemometer
  - (B) Hydrometer
  - (C) Lysimeter
  - (D) Psychrometer
2. Which is the largest delta of the World?
  - (A) Ganga delta
  - (B) Indus delta
  - (C) Mekong delta
  - (D) Sundarbans delta
3. A narrow strip of land with sea on either side, forming a link between two larger areas of land :
  - (A) Cape
  - (B) Isthmus
  - (C) Peninsula
  - (D) Strait
4. A high-level group 'Ambition on Melting Ice (AMI) on Sea-level Rise and Mountain Water Resources' was formed to ensure impacts of cryosphere loss is understood by political leaders and the public, and not only within mountain and polar regions, but throughout the planet. This broad coalition took place in
  - (A) Katowice Climate Change Conference (COP 24)
  - (B) Madrid Climate Change Conference (COP 25)
  - (C) Glasgow Climate Change Conference (COP 26)
  - (D) Sharm el-Sheikh Climate Change Conference (COP 27)
5. Which of the following statements would stand true across the ecosystems in an ideal situation?
  - (A) Primary consumers always outnumber primary producers
  - (B) Primary consumers are least dependent upon primary producers
  - (C) Primary producers always outnumber primary consumers
  - (D) Secondary consumers are the largest and the most powerful
6. The actual space that an organism inhabits and the resources it can access as a result of limiting pressures from other species is called
  - (A) Niche differentiation
  - (B) Niche density
  - (C) Niche segregation
  - (D) Niche width
7. In which of the following countries is the Pampas grasslands situated?
  - (A) Andes Ecuador
  - (B) Central Argentina
  - (C) South Brazil
  - (D) South Chile
8. Which of the following statements is NOT correct about the ecological pyramid?
  - (A) Pyramid of biomass is inverted in aquatic ecosystem
  - (B) Pyramid of biomass is upright in grassland ecosystem
  - (C) Pyramid of energy is inverted in ocean ecosystem
  - (D) Pyramid of numbers I upright in grassland ecosystem

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9. Regardless of the underlying mechanisms of species interaction, which of the following is one of the best described patterns in community ecology ?
- (A) Exponential distribution  
(B) Lognormal distribution  
(C) Normal distribution  
(D) University distribution
10. Which of the following factors does not affect the solubility of gases in water?
- (A) Nature of gas  
(B) Number of particles of gas  
(C) Pressure  
(D) Temperature
11. In thin layer chromatography, the stationary and the mobile phase is made up of
- (A) liquid, gas  
(B) liquid, liquid  
(C) solid, gas  
(D) solid, liquid
12. Oxygen content can be controlled by adding which of the following material with water?
- (A) Acidic solution  
(B) Basic solution  
(C) Hydroxyzine  
(D) Iodine
13. If Biochemical Oxygen Demand (BOD) is high, then which of the following conditions is true?
- (A) The air pollution is more  
(B) The bacteria is less in it  
(C) The water pollution is low  
(D) The water pollution is more
14. The branch of geology which deals with study of rocks is
- (A) Lithology  
(B) Mineralogy  
(C) Petrology  
(D) Rockology
15. Which of the following is generally found in sedimentary rocks?
- (A) Basalt  
(B) Magnesium  
(C) Shale  
(D) Silica
16. The process by which some elements enter in mineral structures with certain elements being incorporated preferentially is known as
- (A) Element partitioning  
(B) Melonisation  
(C) Podsolization  
(D) Transportations
17. Chemical weathering of rock material is most effective in which of the following regions?
- (A) Aravalli Hills  
(B) Ladhak Himalaya  
(C) Vindhyan Hills  
(D) Western Ghats
18. India's first national park, also known as Hailey National Park, established in 1936 is
- (A) Gangotri National Park  
(B) Jim Corbett National Park  
(C) Nanda Devi National Park  
(D) Rajaji National Park

19. Which of the following organizations published the 'Red Data Book'?
- (A) Global Biodiversity Information Facility  
(B) Green Peace  
(C) International Union for Conservation of Nature  
(D) World Wildlife Fund
20. Match List I with List II
- | List I (Movements)             | List II (Leaders)       |
|--------------------------------|-------------------------|
| 1. Appiko movement             | (i) Amrita Devi         |
| 2. Bishnoi movement            | (ii) Pandurang Hegde    |
| 3. Chipko movement             | (iii) Sughathakumari    |
| 4. Save Silent Valley movement | (iv) Sundarlal Bahuguna |
- Choose the correct answer from the options given below:
- (A) 1 (i), 2 (ii), 3 (iii), 4 (iv)  
(B) 1 (ii), 2 (i), 3 (iv), 4 (iii)  
(C) 1 (ii), 2 (iv), 3 (i), 4 (iii)  
(D) 1 (iv), 2 (i), 3 (iii), 4 (ii)
21. Which of the following is the major source of mercury pollution in India?
- (A) Dental amalgam fillings  
(B) Electrical and electronic gadgets  
(C) Pesticides  
(D) Small scale gold mining
22. The search for and the commercialisation of new products that have been sourced from nature :
- (A) Biomagnification  
(B) Biopiracy  
(C) Bioprospecting  
(D) Bioregulation
23. Which of the following is not an energy recovery method of soil waste management?
- (A) Biomethanation  
(B) Composting  
(C) Palletization  
(D) Pyrolysis
24. Chlorosis is
- (A) destruction of leaf tissues  
(B) severe drying  
(C) the killing of tissues  
(D) the reduction of chlorophyll from leaf
25. Which of the following is aerobic waste water treatment method?
- (A) Imhoff tank  
(B) Percolating filter  
(C) Septic tank  
(D) Sludge digester
26. The most common cause of blue baby syndrome is water contaminated with
- (A) Cobalt  
(B) Fluoride  
(C) Mercury  
(D) Nitrate
27. The word noise is derived from the Latin word 'nausea', meaning
- (A) Annoyance  
(B) Seasickness  
(C) Pleasure  
(D) Sleeplessness

28. Match List I with List II

| List I (River) | List II (Origin)                   |
|----------------|------------------------------------|
| 1. Brahmaputra | (i) Amarkantak,<br>Madhya Pradesh  |
| 2. Ganga       | (ii) Trimbakeshwar,<br>Maharashtra |
| 3. Godavari    | (iii) Kailash, China               |
| 4. Narmada     | (iv) Gaumukh, Uttarakhand          |

Choose the correct answer from the options given below:

- (A) 1 (i), 2 (iv), 3 (iii), 4 (ii)  
 (B) 1 (i), 2 (iv), 3 (ii), 4 (iii)  
 (C) 1 (iii), 2 (iv), 3 (ii), 4 (i)  
 (D) 1 (iii), 2 (iv), 3 (i), 4 (ii)

29. Which of the following factors govern the solubility and availability of nutrients in the soil?

- (A) Aeration  
 (B) pH  
 (C) Porosity  
 (D) Temperature

30. Match List I with List II

| List I<br>(Protected Area) | List II<br>(IUCN Category) |
|----------------------------|----------------------------|
| 1. Community Reserves      | (i) II                     |
| 2. Conservation Reserves   | (ii) IV                    |
| 3. National Park           | (iii) V                    |
| 4. Wildlife Sanctuary      | (iv) VI                    |

Choose the correct answer from the options given below:

- (A) 1 (iii), 2 (iv), 3 (ii), 4 (i)  
 (B) 1 (i), 2 (iv), 3 (iii), 4 (ii)  
 (C) 1 (iv), 2 (iii), 3 (i), 4 (ii)  
 (D) 1 (iv), 2 (i), 3 (iii), 4 (ii)

31. Which of the following pesticides persists for a long period in soil ?

- (A) Carbaryl  
 (B) Lindane  
 (C) Monocrotophos  
 (D) Parathion

32. Which of the following forest types is most extensively distributed across India?

- (A) Himalayan moist temperate forest  
 (B) Tropical dry deciduous forest  
 (C) Tropical dry evergreen forest  
 (D) Tropical moist deciduous forest

33. Which of the following is NOT the objective of the Convention on Biological Diversity (CDB)?

- (A) Conservation of biological diversity  
 (B) Fair and equitable sharing of the benefits arising out of the use of genetic resources  
 (C) Mainstreaming biological diversity across government and society  
 (D) Sustainable use of components of biological diversity

34. Who has written the book A Revised Survey of the Forest Types of India?

- (A) G.S. Puri and R.K Gupta  
 (B) H.G. Champion and S.K. Seth  
 (C) J.S. Singh and S.P. Singh  
 (D) V.M. Meher-Homji and Madhav Gadgil

35. Who coined the term 'biodiversity'?

- (A) Edward Osborne Wilson  
 (B) Norman Myers  
 (C) Sir David Attenborough  
 (D) Walter Rosen

36. While measuring the diversity between communities, the following diversity index is computed :  
(A) Alpha diversity  
(B) Beta diversity  
(C) Delta diversity  
(D) Gamma diversity
37. The International Union for Conservation of Nature lists one of the following as the most serious threat to endangered species worldwide :  
(A) Habitat destruction by fires  
(B) Habitat destruction by global climate change  
(C) Habitat destruction by human activities  
(D) Habitat destruction by meteorites and asteroids
38. Where is India's first green building located ?  
(A) CII - Sohrabji Green Business Centre, Hyderabad  
(B) ITC Green Centre, Gurgaon  
(C) Suzlon Earth, Pune  
(D) Wipro Technologies, Gurgaon
39. The most appropriate term used by the IUCN within Nature Based Solutions as a solution for urban and climate challenges is  
(A) Green Asset  
(B) Green ICT  
(C) Green Infrastructure  
(D) Green System
40. Which of the following has the least or no possibility of being found in the e-waste?  
(A) Cadmium  
(B) Lead  
(C) Mercury  
(D) Neon
41. LEED in the Green Technology refers to  
(A) Leadership in Energy and Efficiency Design  
(B) Leadership in Energy and Efficiency Document  
(C) Leadership in Energy and Environmental Design  
(D) Leadership in Energy and Environmental Document
42. Which of the following is not a main part of a Life Cycle Analysis (LCA)?  
(A) Comparative analysis  
(B) Impact analysis  
(C) Improvement analysis  
(D) Inventory analysis
43. Which of the following types of worms are used for vermicomposting?  
(A) Black Wiggler  
(B) Blue Wiggler  
(C) Green Wiggler  
(D) Red Wiggler
44. Net calorific value of a waste is measured using  
(A) Bomb Calorimeter  
(B) Galvanometer  
(C) Photometer  
(D) Tensiometer

45. Which of the following terms is best suited for Dioxin?
- Antibiotic
  - Fertilizer
  - Pesticide
  - Toxin
46. OTEC is related to a renewable energy technology that used potential of oceans to produce clean, reliable electricity, day and night, year-round. What is expansion of OTEC ?
- Ocean Thermal Energy Conversion
  - Ocean Thermal Energy Counter
  - Oceanic Thermal Energy Conservation
  - Oklahoma Thermal Energy Center
47. Match List I with List II

| List I<br>(Minerals) | List II<br>(Area of occurrence) |
|----------------------|---------------------------------|
| 1. Coal              | (i) Bhandara, Maharashtra       |
| 2. Gold              | (ii) Karanpura, Jharkhand       |
| 3. Mica              | (iii) Hatti, Karnataka          |
| 4. Manganese         | (iv) Nellore, Andhra Pradesh    |

Choose the correct answer from the options given below:

- 1 (ii), 2 (iv), 3 (iii), 4 (i)
- 1 (ii), 2 (iii), 3 (iv), 4 (i)
- 1 (iii), 2 (iv), 3 (ii), 4 (i)
- 1 (ii), 2 (iii), 3 (i), 4 (iv)

48. Which of the following is called as the 'country of winds'?
- Austria
  - Denmark
  - Europe
  - Italy
49. Sustainable Development Goals (SDGs), an urgent call for action by all countries - developed and developing - in a global partnership, come with
- 17 goals and 169 targets
  - 17 goals and 179 targets
  - 18 goals and 169 targets
  - 18 goals and 179 targets
50. What was the preindustrial (1750 AD) concentration of methane ( $\text{CH}_4$ ) in the atmosphere?
- 100 ppb
  - 400 ppb
  - 700 ppb
  - 1000 ppb

51. Given below are two statements :

Statement I: Deforestation and forest degradation are the biggest threats to forests worldwide.

Statement II: Nature-Based Solutions (NBSs) can reverse the effects of deforestation and degradation.

In the light of the above statements, choose the most appropriate answer from the options given below :

- Both Statement I and Statement II are true
- Both Statement I and Statement II are false
- Statement I is correct but Statement II is false
- Statement I is incorrect but Statement II is true

52. UNCCD, the sole legally binding international agreement linking environment and development to sustainable land management stands for
- United Nations Climate Change and Development
  - United Nations Convention for Climate, Degradation and Deforestation
  - United Nations Convention to Climate and Development
  - United Nations Convention to Combat Desertification
53. Environmental education must be made an integral part of all academic programs as students need to be mainly sensitized about
- growing environmental degradation and its consequence for life on earth
  - its emergence as a specialized field
  - its interdisciplinary and multidisciplinary nature
  - relationship between culture and environment
54. The most dominating oxides resulting acid rains are
- Carbon dioxide and Carbon monoxide
  - Carbon oxides and Nitrogen oxides
  - Carbon oxides and Sulphur oxides
  - Nitrogen oxides and Sulphur oxides
55. Who is popularly known as glacier man (or ice man) of India?
- Chewang Norphel
  - Rajendra Singh
  - Sonam Wangchuk
  - Sunderlal Bahuguna
56. Environmental education was mandated as a compulsory subject in all schools across the country following a Public Interest Litigation (PIL) in 1991 by
- Constitution of India
  - High Courts of India
  - Ministry of Environment, Forest and Climate Change
  - Supreme Court of India
57. Which of the following global agreements was instrumental to protect stratospheric ozone layer by phasing out the production and consumption of ozone-depleting substances (ODS)?
- Vienna Convention
  - Basel Convention
  - Montreal Protocol
  - Stockholm Convention

58. The first of the major Environmental Protection Act to be promulgated in India was
- (A) Air (Prevention and Control of Pollution) Act of 1981
  - (B) Forest (Conservation) Act, 1980
  - (C) Water (Prevention and Control) Act, 1974
  - (D) Wild Life (Protection) Act, 1972
59. Which of the following sections of the Wildlife Protection Act 1972 deals with the prohibition of hunting (i.e. no person shall hunt any wild animal specified in Schedules I, II, III and IV)?
- (A) Section 6
  - (B) Section 9
  - (C) Section 12
  - (D) Section 15
60. Right to live is a Fundamental Right under Article 21 of the Constitution of India and it includes the right of enjoyment of pollution free water and air for full enjoyment of life. In which Supreme Court has observed this?
- (A) Rajesh Kumar v. Union of India [(2012) SC]
  - (B) Subhash Kumar v. State of Bihar [(1991) SC]
  - (C) Subramaniam Swamy v. Union of India [(2012) SC]
  - (D) Vineet Narain v. Union of India [(1998) SC]

## ROUGH WORK

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