

Test Booklet Code &amp; No.

प्रश्नपत्रिका कोड व क्र.

A

## Paper-II

## ENVIRONMENTAL SCIENCE

Signature and Name of Invigilator

Seat No.

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(In figures as in Admit Card)

1. (Signature) .....

(Name) .....

Seat No. ....

(In words)

2. (Signature) .....

(Name) .....

OMR Sheet No.

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(To be filled by the Candidate)

MAY - 31216

Time Allowed : 1¼ Hours]

[Maximum Marks : 100

Number of Pages in this Booklet : 16

Number of Questions in this Booklet : 50

## Instructions for the Candidates

- Write your Seat No. and OMR Sheet No. in the space provided on the top of this page.
- This paper consists of 50 objective type questions. Each question will carry *two* marks. All questions of Paper-II will be compulsory, covering entire syllabus (including all electives, without options).
- At the commencement of examination, the question booklet will be given to the student. In the first 5 minutes, you are requested to open the booklet and compulsorily examine it as follows :
  - To have access to the Question Booklet, tear off the paper seal on the edge of this cover page. Do not accept a booklet without sticker-seal or open booklet.
  - Tally the number of pages and number of questions in the booklet with the information printed on the cover page. Faulty booklets due to missing pages/questions or questions repeated or not in serial order or any other discrepancy should not be accepted and correct booklet should be obtained from the invigilator within the period of 5 minutes. Afterwards, neither the Question Booklet will be replaced nor any extra time will be given. The same may please be noted.**
  - After this verification is over, the OMR Sheet Number should be entered on this Test Booklet.
- Each question has four alternative responses marked (A), (B), (C) and (D). You have to darken the circle as indicated below on the correct response against each item.  
**Example :** where (C) is the correct response.  

(A)	(B)	(C)	(D)
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- Your responses to the items are to be indicated in the **OMR Sheet given inside the Booklet only**. If you mark at any place other than in the circle in the OMR Sheet, it will not be evaluated.
- Read instructions given inside carefully.
- Rough Work is to be done at the end of this booklet.
- If you write your Name, Seat Number, Phone Number or put any mark on any part of the OMR Sheet, except for the space allotted for the relevant entries, which may disclose your identity, or use abusive language or employ any other unfair means, you will render yourself liable to disqualification.
- You have to return original OMR Sheet to the invigilator at the end of the examination compulsorily and must not carry it with you outside the Examination Hall. You are, however, allowed to carry the Test Booklet and duplicate copy of OMR Sheet on conclusion of examination.
- Use only Blue/Black Ball point pen.**
- Use of any calculator or log table, etc., is prohibited.**
- There is no negative marking for incorrect answers.**

## विद्यार्थ्यांसाठी महत्वाच्या सूचना

- परिक्षार्थीनी आपला आसन क्रमांक या पृष्ठावरील वरच्या कोपऱ्यात लिहावा. तसेच आपणांस दिलेल्या उत्तरपत्रिकेचा क्रमांक त्याखाली लिहावा.
- सदर प्रश्नपत्रिकेत 50 बहुपर्यायी प्रश्न आहेत. प्रत्येक प्रश्नास दोन गुण आहेत. या प्रश्नपत्रिकेतील सर्व प्रश्न सोडविणे अनिवार्य आहे. सदरचे प्रश्न हे या विषयाच्या संपूर्ण अभ्यासक्रमावर आधारित आहेत.
- परीक्षा सुरु झाल्यावर विद्यार्थ्यांला प्रश्नपत्रिका दिली जाईल. सुरुवातीच्या 5 मिनीटांमध्ये आपण सदर प्रश्नपत्रिका उघडून खालील बाबी अवश्य तपासून पहाव्यात.
  - प्रश्नपत्रिका उघडण्यासाठी प्रश्नपत्रिकेवर लावलेले सील उघडावे. सील नसलेली किंवा सील उघडलेली प्रश्नपत्रिका स्विकारू नये.
  - पहिल्या पृष्ठावर नमूद केल्याप्रमाणे प्रश्नपत्रिकेची एकूण पृष्ठे तसेच प्रश्नपत्रिकेतील एकूण प्रश्नांची संख्या पडताळून पहावी. पृष्ठे कमी असलेली/कमी प्रश्न असलेली/प्रश्नांचा चूकीचा क्रम असलेली किंवा इतर त्रुटी असलेली सदोष प्रश्नपत्रिका सुरुवातीच्या 5 मिनिटातच पर्यवेक्षकाला परत देऊन दुसरी प्रश्नपत्रिका मागवून घ्यावी. त्यानंतर प्रश्नपत्रिका बदलून मिळणार नाही तसेच वेळी वाढवून मिळणार नाही याची कृपया विद्यार्थ्यांनी नोंद घ्यावी.
  - वरीलप्रमाणे सर्व पडताळून पहिल्यानंतरच प्रश्नपत्रिकेवर ओ.एम.आर. उत्तरपत्रिकेचा नंबर लिहावा.
- प्रत्येक प्रश्नासाठी (A), (B), (C) आणि (D) अशी चार विकल्प उत्तरे दिली आहेत. त्यातील योग्य उत्तराचा रकाना खाली दर्शविल्याप्रमाणे ठळकपणे काळ/निळ्या करावा.  
**उदा. :** जर (C) हे योग्य उत्तर असेल तर.  

(A)	(B)	(C)	(D)
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- या प्रश्नपत्रिकेतील प्रश्नांची उत्तरे ओ.एम.आर. उत्तरपत्रिकेतच दर्शवावीत. इतर ठिकाणी लिहीलेली उत्तरे तपासली जाणार नाहीत.
- आत दिलेल्या सूचना काळजीपूर्वक वाचाव्यात.
- प्रश्नपत्रिकेच्या शेवटी जोडलेल्या कोऱ्या पानावरच कच्चे काम करावे.
- जर आपण ओ.एम.आर. वर नमूद केलेल्या ठिकाणा व्यतिरीक्त इतर कोठेही नाव, आसन क्रमांक, फोन नंबर किंवा ओळख पटले अशी कोणतीही खूप केलेली आढळून आल्यास अथवा असभ्य भाषेचा वापर किंवा इतर गैरमार्गाचा अवलंब केल्यास विद्यार्थ्यांला परीक्षेस अपात्र ठरविण्यात येईल.
- परीक्षा संपल्यानंतर विद्यार्थ्यांनि मूळ ओ.एम.आर. उत्तरपत्रिका पर्यवेक्षकांकडे परत करणे आवश्यक आहे. तथापी, प्रश्नपत्रिका व ओ.एम.आर. उत्तरपत्रिकेची द्वितीय प्रत आपल्याबरोबर नेण्यास विद्यार्थ्यांना परवानगी आहे.
- फक्त निळ्या किंवा काळ्या बॉल पेनचाच वापर करावा.**
- कॅलक्युलेटर किंवा लॉग टेबल वापरण्यास परवानगी नाही.**
- चुकीच्या उत्तरासाठी गुण कपात केली जाणार नाही.**

**MAY - 31216/II—A**

## Environmental Science

### Paper II

**Time Allowed : 75 Minutes]**

**[Maximum Marks : 100**

**Note :** This Paper contains **Fifty (50)** multiple choice questions. Each question carries **Two (2)** marks. Attempt *All* questions.

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|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1. A natural resource is to be conserved by :</p> <ul style="list-style-type: none"><li>(A) Moratorium on its use</li><li>(B) Its consumption as needed</li><li>(C) Storing it is a safe way</li><li>(D) Maintaining balance between its consumption and regeneration</li></ul> <p>2. The Ten Percent Law refers to :</p> <ul style="list-style-type: none"><li>(A) dynamics of minerals in an ecosystem</li><li>(B) dynamics of energy in an ecosystem</li><li>(C) number of individuals at each trophic level in an ecosystem</li><li>(D) biomass built up at each trophic level in an ecosystem</li></ul> | <p>3. Mineral ores, fossil fuel deposits and stones are the examples of :</p> <ul style="list-style-type: none"><li>(A) Energy Resources</li><li>(B) Non-renewable resources</li><li>(C) Renewable resources</li><li>(D) Perpetual resources</li></ul> <p>4. Species that occur in different geographical regions separated by special barrier are :</p> <ul style="list-style-type: none"><li>(A) Allopatric</li><li>(B) Sympatric</li><li>(C) Sibling</li><li>(D) Habitat</li></ul> |
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5. An ecosystem should have continuous external source of :
- (A) Energy
  - (B) Habitat
  - (C) Food
  - (D) Minerals
6. Which of the following radioisotope is present in human body ?
- (A) I-125
  - (B) P-32
  - (C) Na-24
  - (D) C-14
7. In order to prepare 100 mL solution of 10 ppm NaCl, how many grams of NaCl are needed ?
- (A) 1.0
  - (B) 58.5
  - (C) 0.001
  - (D) 0.585
8. Wavelength range for X-ray region is :
- (A) 0.0001—0.01 Å
  - (B) 150—400 Å
  - (C) 400—800 Å
  - (D) 0.1—100 Å
9. Disease caused by eating fish from mercury contaminated water is :
- (A) Fluoresis
  - (B) Minamata
  - (C) Osteoporesis
  - (D) Scurvy
10. Flame ionization detector is used in which of the following Instrument ?
- (A) Spectrophotometer
  - (B) Gas chromatograph
  - (C) Scintillation counter
  - (D) X-ray diffractometer

11. The study of individual organism's relationship with its environment is called as :

- (A) Monoecology
- (B) Autecology
- (C) Ecology
- (D) Synecology

12. Neutralism is a type of interspecific relationship where :

- (A) One or both species are benefitted
- (B) At least one of the species is harmed
- (C) None of the two species are affected
- (D) Both the species are affected

13. Which one of the following is *not* observed in biodiversity hotspots ?

- (A) Species richness
- (B) Endemism
- (C) No inter-specific competition
- (D) Greater inter-specific competition

14. Which of the following acid is produced by incomplete oxidation rather than a true fermentation ?

- (A) Gluconic acid
- (B) Acetic acid
- (C) Citric acid
- (D) Lactic acid

15. Savana climate favours :

- (A) Coniferous forest
- (B) Grasslands
- (C) Climbers
- (D) Evergreen forest

16. The change of state of ice into water vapor is known as :
- (A) Deposition
  - (B) Sublimation
  - (C) Melting
  - (D) Condensation
17. Which of the following microorganisms leach metals out of rock ores and can accumulate silver ?
- (A) *Pseudomonas aeruginosa*
  - (B) *Thiobacillus sp*
  - (C) *Pseudomonas putida*
  - (D) *Zooglota ramigera*
18. Newly 2% of the global fresh water is available in :
- (A) Lakes
  - (B) Rivers
  - (C) Underground aquifers
  - (D) Permanent snow caps/glaciers
19. Strom surges are devastating features associated with :
- (A) Western Disturbances
  - (B) Tropical cyclones
  - (C) Claud bursts
  - (D) Avalanches

20. Floods and landslides are common in the Western Ghats during the months of :

- (A) March-April
- (B) June-September
- (C) December-January
- (D) January to May

21. Which of the following is not a conventional source of energy ?

- (A) Fossil fuel
- (B) Wood and Charcoal
- (C) Photo-voltaic
- (D) Animal power

22. Active solar energy systems can capture :

- (A) Direct solar energy
- (B) Indirect solar energy
- (C) Direct thermal energy
- (D) Indirect thermal energy

23. In the current scenario, advanced anaerobic digestors can produce power generation capacities in the range :

- (A) 2 kW—10 kW
- (B) 2 MW—10 MW
- (C) 20 MW—100 MW
- (D) 1 kW—2 kW

24. Correct order of global warming potential of  $\text{CO}_2$ ,  $\text{N}_2\text{O}$  and  $\text{CH}_4$  is :
- (A)  $\text{CO}_2 > \text{N}_2\text{O} > \text{CH}_4$
- (B)  $\text{CO}_2 > \text{CH}_4 > \text{N}_2\text{O}$
- (C)  $\text{CH}_4 > \text{N}_2\text{O} > \text{CO}_2$
- (D)  $\text{N}_2\text{O} > \text{CH}_4 > \text{CO}_2$
25. The share of thermal power plants in the power production in India in percentage terms is :
- (A) 70%
- (B) 60%
- (C) 85%
- (D) 95%
26. An air parcel is displaced but after sometime it returns back to its original height. This happens when the atmosphere is :
- (A) Unstable
- (B) Stable
- (C) Neutral
- (D) Highly unstable
27. Metals for which National Ambient Air Quality Standards (NAAQS) have been defined by the CPCB are :
- (A) Pb, Cr, Ni
- (B) Pb, Ni, Zn
- (C) Pb, Zn, Cu
- (D) Pb, As, Ni



28. Thermal pollution in water bodies occurs due to :
- (A) Discharge of run-off water
  - (B) Discharge of heat from power plants
  - (C) Release of treated effluent
  - (D) Mixing of sewage
29. Which of the following series is *correct*, when types of soil particles are in the increasing order of their size ?
- (A) Clay → Sand → Silt
  - (B) Clay → Silt → Sand
  - (C) Sand → Silt → Clay
  - (D) Silt → Sand → Clay
30. Which of the following types of nuclear reactors uses graphite as a moderator ?
- (A) Pressurized water reactor
  - (B) Boiling water reactor
  - (C) Fast breeder reactor
  - (D) High temperature gas cooled reactor
31. The project characteristics and baseline information is brought together in EFA for :
- (A) Impact Identification
  - (B) Impact Assessment
  - (C) Impact Mitigation
  - (D) Impact Indication

32. What is the process for evaluation of need of EFA for developmental activities ?
- (A) Scoping
  - (B) Setting
  - (C) Screening
  - (D) Auditing
33. The exercise of Environmental Audit for the industries is conducted :
- (A) Monthly
  - (B) Annually
  - (C) Bimonthly
  - (D) Six monthly
34. Fly ash from a thermal power plant is useful for :
- (A) Brick-making, Agriculture, Road construction
  - (B) Road construction, Cement manufacture, Cellulose industry
  - (C) Brick-making, Road construction, Fiber industry
  - (D) Cement manufacture, Road construction, Cosmetic industry
35. A 500 MW thermal power plant consuming 8000 tons of Indian coal, would release approx how many metric tons of ash in a day ?
- (A) 500
  - (B) 1500
  - (C) 2500
  - (D) 3500

36. All the agricultural products are labelled with which of the following to indicate them as environment friendly product :
- (A) ISI mark
  - (B) ISO mark
  - (C) Eco mark
  - (D) Red mark
37. The workers, if injured during their work at workplace have right to claim for the compensation under the provision in :
- (A) Public Liability Insurance Act, 1991 and Rules 1991
  - (B) The Environmental (Protection) Act, 1986
  - (C) The Wildlife (Protection) Act, 1972
  - (D) EIA, 1994
38. Efforts for protecting the ozone layer at the international level fall under the domain of :
- (A) Montreal Protocol
  - (B) Cartagena Protocol
  - (C) Dunkel Draft
  - (D) CRZ
39. World's biggest industrial accident that took place in December, 1984 at Bhopal, resulted in release and spread of :
- (A) Bromine
  - (B) Fluorine
  - (C) Methyl iso-cyanate
  - (D) Benzene

40. Which of the following is *not* a physical treatment of hazardous waste :

- (A) Screening and Sedimentation
- (B) Neutralization and Precipitation
- (C) Flotation and Filtration
- (D) Centrifugation

41. If the sample size is small, which method of sampling is more appropriate ?

- (A) Random
- (B) Purposive
- (C) Stratified
- (D) Census

42. A crop insurance company uses the following table based on the claims data :

**Percent loss    Probability**

0	0.90
25	.05
50	.02
100	.03

If the company pays maximum Rs. 20,000/hectare, its expected loss in Rs./hectare is approximately :

- (A) 690
- (B) 1050
- (C) 600
- (D) 375

43. In case of Normal distribution, the probability that a value of the variable is in the range of  $\mu \pm \sigma$  is :
- (A)  $\sim 0.95$
- (B)  $\sim 0.67$
- (C)  $\sim 0.50$
- (D)  $\sim 0.33$
44. According to Box model for an airshed over a city, the concentration (C) of a pollutant varies with mixing height (H) of the atmosphere as :
- (A)  $C \propto H$
- (B)  $C \propto \frac{1}{H}$
- (C)  $C \propto H^{-1/2}$
- (D)  $C \propto H^{-3/2}$
45. The geometric mean of the numbers 4, 6 and 9 is :
- (A) 9.5
- (B) 6.0
- (C) 4.75
- (D) 1.95
46. Johannesburg Earth Summit on 'Sustainable Development' was held in the year :
- (A) 2002
- (B) 2001
- (C) 1972
- (D) 1982

47. In drinking water, the contamination by which of the following causes the mottling of teeth and skeletal deformities :

- (A) Fluoride
- (B) Chlorine
- (C) Zinc
- (D) Boron

48. Flyash disposal is carried out through :

- (A) Landfills
- (B) Ash ponds
- (C) Air furnace
- (D) Trash containers

49. Restoration of wasteland is effective in the long run by covering it with :

- (A) Gravel
- (B) Plastic sheets
- (C) Live greenery
- (D) Cement

50. A hole is deemed to have been created in ozone layer when its concentration in stratosphere falls below :

- (A) 300 Dobson
- (B) 200 Dobson
- (C) 400 Dobson
- (D) 500 Dobson

**MAY - 31216/II—A**

**ROUGH WORK**

**MAY - 31216/II—A**

**ROUGH WORK**