



Previous Year Question Paper
of

SET MH (MAHARASHTRA)
ENVIRONMENTAL SCIENCES
Question Paper – II

State Eligibility Test

2015, September

(Original Question Paper with Answer Key)

State Eligibility Test



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Test Booklet No.

प्रश्नपत्रिका क्र.

F

Paper-II

ENVIRONMENTAL SCIENCE

Signature and Name of Invigilator

Seat No.

(In figures as in Admit Card)

1. (Signature)

(Name)

Seat No.

(In words)

2. (Signature)

(Name)

OMR Sheet No.

(To be filled by the Candidate)

AUG - 31215

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 चुकीचा 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 लिहिलेली 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 पटल अशी कोणतीही खूप केलेली आढळून आल्यास अथवा असभ्य भाषेचा वापर किंवा इतर गैरमागाचा 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.**

AUG - 31215/II

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.

<p>1. The clouds and the weather systems are mostly observed in which part of the atmosphere ?</p> <p>(A) Troposphere</p> <p>(B) Ionosphere</p> <p>(C) Mesosphere</p> <p>(D) Exosphere</p> <p>2. The flux of radiation from black body is directly proportional to :</p> <p>(A) T</p> <p>(B) T^4</p> <p>(C) T^2</p> <p>(D) $1/T$</p>	<p>3. Production of wealth and providing jobs for human society without degrading the environment is termed as :</p> <p>(A) Sustainable economy</p> <p>(B) Green revolution</p> <p>(C) Environmental conservation</p> <p>(D) Community</p> <p>4. The mean annual temperature of two stations at different elevation, located at the same latitude, both away from the coast will be :</p> <p>(A) Higher for the station with higher elevation</p> <p>(B) Lower for the station with lower elevation</p> <p>(C) Same for the two stations</p> <p>(D) Lower for the station with higher elevation</p>
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5. The ionosphere which extends up to 500 km above the earth surface is characterised by :
- (A) Steady decreasing temperature with height from mesosphere
- (B) Steady temperature increase with height from mesopause
- (C) Constant temperature along with increasing height from stratosphere
- (D) Steady temperature increase with height from stratosphere
6. 25 mg of KCl is dissolved in 100 mL of water. What will be its concentration in PPM ?
- (A) 0.25
- (B) 2.5
- (C) 25
- (D) 250
7. Which of the following is *correct* form of Bragg's equation ?
- (A) $\frac{n}{\lambda} = 2d \sin \theta$
- (B) $n\lambda = \sin \theta$
- (C) $n - \lambda = 2d \sin \theta$
- (D) $n\lambda = \frac{\sin \theta}{2d}$
8. Which of the following is the *correct* equation for Gibbs' energy ?
- (A) $\Delta G = \Delta H - T\Delta S$
- (B) $\Delta G = \Delta H + T\Delta S$
- (C) $\Delta G = \frac{\Delta H}{T} - \Delta S$
- (D) $\Delta G = \Delta H - \frac{\Delta S}{T}$

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9. Fluoride pollution mainly affects which of the following ?
- (A) Kidney
 - (B) Teeth
 - (C) Brain
 - (D) Heart
10. Which of the following elements *cannot* be determined using Flame Atomic Absorption Spectrophotometer ?
- (A) Iodine
 - (B) Potassium
 - (C) Zinc
 - (D) Copper
11. Consumer organisms that feed on dead organic plant and animal matter are known as :
- (A) Detrivores
 - (B) Autotrophs
 - (C) Heterofeeders
 - (D) Chemotrophs
12. The Gaia hypothesis was proposed by :
- (A) Swaminathan
 - (B) Maurice Strong
 - (C) Brutland
 - (D) James Lovelock

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13. The highest level of species richness is observed in :

- (A) Temperate grasslands
- (B) Tropical rain forest
- (C) Coniferous forest
- (D) Alpine forest

14. How the biological oxygen demand gets affected with the increased presence of organic matter in water ?

- (A) It increases
- (B) It decreases
- (C) It remains unchanged
- (D) It first increases, then decreases

15. Ecological niche refers to :

- (A) Functional attribute of organism
- (B) Morphological attribute of organism
- (C) Biomass of organism
- (D) Biochemical properties of organism

16. Geopressurized have huge potential reserves of :

- (A) Petroleum
- (B) Oil shale
- (C) Natural gas
- (D) Kerosene

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| <p>17. Land Evaluation is the process of :</p> <p>(A) Valuation of mineral resources</p> <p>(B) Assessment of land for a specific purpose</p> <p>(C) Assessment of land market of an area</p> <p>(D) Evaluation of biodiversity</p> <p>18. Onset of South West Monsoon over the Indian subcontinent occurs generally during the month of :</p> <p>(A) July</p> <p>(B) May</p> <p>(C) June</p> <p>(D) April</p> | <p>19. Tropical cyclones are low pressure areas with winds exceeding at least :</p> <p>(A) 15 kts</p> <p>(B) 20 kts</p> <p>(C) 27 kts</p> <p>(D) 33 kts</p> <p>20. Nearly of the annual rainfall over Indian subcontinent occurs during S.W. Monsoon.</p> <p>(A) 50%</p> <p>(B) 70%</p> <p>(C) 80%</p> <p>(D) 95%</p> |
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21. is an example of Biomass Energy conversion system.

- (A) Pyrolytic (Thermal) gasifier
- (B) Heat extractor
- (C) Electrical cutter
- (D) Kerosene stove

22. Which of the following is an example of perpetual source of energy ?

- (A) Nuclear energy
- (B) Fossil fuel
- (C) Biomass energy
- (D) Wind energy

23. Wind mills are most suited to which of the following locations or regions :

- (A) Off-shore
- (B) Lands
- (C) High altitude
- (D) Deserts

24. Solar energy in the infrared range is about% of the total solar.

- (A) 50
- (B) 46
- (C) 60
- (D) 40

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25. Photosphere is situated at the
..... of the Sun.

- (A) Outer layer
- (B) Middle part
- (C) Central region
- (D) Outer Edge

26. Which one of the following is a
primary as well as secondary
pollutant ?

- (A) NO
- (B) CH₄
- (C) CO₂
- (D) H₂S

27. If exposure of 90 dB of noise for
8 hours means 100% noise dose, a
person being subjected to a noise of
96 dB for 4 hours is having an
exposure to noise dose of :

- (A) 50%
- (B) 100%
- (C) 200%
- (D) 150%

28. The soil erosion that occurs due to
overgrazing by cattle is :

- (A) Gully erosion
- (B) Rill erosion
- (C) Sheet erosion
- (D) Soil mulching

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29. To maintain constant inflow of effluent for treatment of wastewater there is a unit known as :
- (A) Sedimentation tank
 - (B) Preclarifier
 - (C) Equalization tank
 - (D) Anaerobic digester
30. Which of the following acids is associated with soil ?
- (A) Acetic acid
 - (B) Nitric acid
 - (C) Hydrochloric acid
 - (D) Humic acid
31. To start with the industry, project proponents are required to furnish NOC from for environmental appraisal.
- (A) Central Pollution Control Board
 - (B) Ministry of Environment and Forest
 - (C) State Pollution Control Board
 - (D) State Government
32. Which of the following is *not* an objective of EIA ?
- (A) Risk analysis and disaster management
 - (B) Recycling and reduction of waste
 - (C) Risk reduction
 - (D) Assessment of funds spent

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33. "Appiko Movement" from Karnataka State is related to :

- (A) Protection of trees
- (B) Protest against the use of plastics
- (C) Movement for water conservation
- (D) Protection of rivers and streams

34. Chairperson or the Vice-Chairperson of National Environment Tribunal shall be appointed after consultation with :

- (A) Prime Minister
- (B) Minister of Environment and Forests
- (C) Chief Justice of India
- (D) Governor of State

35. Network method of impact identification is based on the of relationships in Environmental systems.

- (A) Simple Web
- (B) Food Chain
- (C) Complex Web
- (D) Energy Web

36. The name of the World Commission on Environment and Development is :

- (A) Zakaria Commission
- (B) Brundtland Commission
- (C) Planning Commission
- (D) Mitchel Resource Commission

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37. Dumping of biomedical waste without any treatment into any water body may result into :
- (A) Destruction of toxicants
 - (B) Spread of drug resistant microbes
 - (C) Development of nitrogen fixtures
 - (D) Stabilization of phosphate
38. The three 'R' of waste management hierarchy are :
- (A) Regain, Recycle and Resend
 - (B) Reuse, Reimburse and Regain
 - (C) Reduce, Reuse and Recycle
 - (D) Reduce, Redox and Reoxidation
39. The provision for the establishment of State Advisory Board for the wildlife is provided in :
- (A) The Biodiversity (Conservation) Act, 2006
 - (B) The Forest (Conservation) Act, 1980
 - (C) The Wildlife (Protection) Act, 1972 (Amended in 91)
 - (D) The Indian Forest Act, 1927
40. Infectious wastes among hospital wastes are normally collected in the containers having colour.
- (A) Yellow
 - (B) Black
 - (C) White
 - (D) Blue

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41. An example of the non-probability sampling is :

- (A) Random sampling
- (B) Stratified sampling
- (C) Cluster sampling
- (D) Correlation

42. The average length of stay in a hospital is useful for planning. The following is the distribution of the length of stay in a hospital :

Days	Prob.
2	.05
3	.20
4	.40
5	.20
6	.15

The average length of stay is :

- (A) 3.3
- (B) 4.0
- (C) 4.2
- (D) 4.7

43. In regression analysis, for the null hypothesis to be rejected, the value of t -statistic for degrees of freedom > 30 and 95% confidence limit should be approximately :

- (A) > 2
- (B) < 2
- (C) < 1
- (D) > 1

44. According to Gaussian Plume model for a point source, the ground level concentration is :

- (A) Proportional to source strength
- (B) Inversely proportional to height of the stack
- (C) Proportional to wind speed
- (D) Inversely proportional to mixing height

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45. Mode of a distribution of a data is equal to :
- (A) arithmetic mean
 - (B) geometric mean
 - (C) $2(\text{median}) - \text{mean}$
 - (D) $3(\text{median}) - 2(\text{mean})$
46. Which of the following conventions is related to protection and conservation of Wetlands ?
- (A) Vienna Convention
 - (B) Basel Convention
 - (C) Ramsar Convention
 - (D) CITES
47. Ethics is a :
- (A) Developed tool to control human activities
 - (B) Adopted social legislation for controlling human environmental activities
 - (C) Term that guides one to moral behaviour, which is basic to distinguishing 'right from wrong'
 - (D) Adopted social regulation for controlling humans activities
48. Solar radiation is measured by :
- (A) Pyranometer
 - (B) Thermocouple
 - (C) Photocell
 - (D) Anemometer
49. Conservation of Western Ghats is imperative from the viewpoint of :
- (A) Historic importance
 - (B) Rich biodiversity
 - (C) Tourism potential
 - (D) Mineral deposits
50. Agenda 21 which is known as blueprint for sustainable development was the outcome of :
- (A) UN Conference on Human Environment
 - (B) UN Johannesburg Summit
 - (C) UN Conference on Environment and Development
 - (D) UNDP-Report on Environment

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