

Roll No. ....

Question Booklet Number

O. M. R. Serial No.

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**M. Sc. (Fourth Semester)**  
**(NEP) EXAMINATION, 2025-26**

**BOTANY**

**(Environmental Sciences)**

Paper Code							
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Questions Booklet  
Series

**A**

Time : 1:30 Hours ]

[ Maximum Marks : 75

**Instructions to the Examinee :**

1. Do not open the booklet unless you are asked to do so.
2. The booklet contains 100 questions. Examinee is required to answer 75 questions in the OMR Answer-Sheet provided and not in the question booklet. All questions carry equal marks.
3. Examine the Booklet and the OMR Answer-Sheet very carefully before you proceed. Faulty question booklet due to missing or duplicate pages/questions or having any other discrepancy should be got immediately replaced.

**परीक्षार्थियों के लिए निर्देश :**

1. प्रश्न-पुस्तिका को तब तक न खोलें जब तक आपसे कहा न जाए।
2. प्रश्न-पुस्तिका में 100 प्रश्न हैं। परीक्षार्थी को 75 प्रश्नों को केवल दी गई OMR आन्सर-शीट पर ही हल करना है, प्रश्न-पुस्तिका पर नहीं। सभी प्रश्नों के अंक समान हैं।
3. प्रश्नों के उत्तर अंकित करने से पूर्व प्रश्न-पुस्तिका तथा OMR आन्सर-शीट को सावधानीपूर्वक देख लें। दोषपूर्ण प्रश्न-पुस्तिका जिसमें कुछ भाग छपने से छूट गए हों या प्रश्न एक से अधिक बार छप गए हों या उसमें किसी अन्य प्रकार की कमी हो, तो उसे तुरन्त बदल लें।

(Remaining instructions on the last page)

(शेष निर्देश अन्तिम पृष्ठ पर)

***(Only for Rough Work)***

1. What is the meaning of environment ?
  - (A) Only living organisms
  - (B) Only non- living organisms
  - (C) Interaction between living and non-living components
  - (D) Only human beings
2. Which of the following is a biotic component ?
  - (A) Water
  - (B) Air
  - (C) Soil
  - (D) Plants
3. What is the main source of energy in an ecosystem ?
  - (A) Moon
  - (B) Sun
  - (C) Water
  - (D) Soil
4. Which of the following is a major cause of soil erosion ?
  - (A) Overgrazing
  - (B) Deforestation
  - (C) Climate change
  - (D) All of the above
5. Which of the following gases is a potent greenhouse gas ?
  - (A) Oxygen
  - (B) Nitrogen
  - (C) Carbon Dioxide
  - (D) Helium
6. Which gas is mainly responsible for the greenhouse effect ?
  - (A) Nitrogen
  - (B) Oxygen
  - (C) Carbon dioxide
  - (D) Hydrogen
7. The ozone layer is mainly found in which layer of the atmosphere ?
  - (A) Troposphere
  - (B) Stratosphere
  - (C) Mesosphere
  - (D) Thermosphere
8. Which of the following is a way to mitigate the effects of SO<sub>2</sub> and NO<sub>2</sub> emission on ecosystems ?
  - (A) Reforestation
  - (B) Wetland restoration
  - (C) Soil conservation
  - (D) All of the above

9. What is the primary effect of sulphur dioxide ( $\text{SO}_2$ ) on plant health ?
- (A) Increase growth rate
  - (B) Reduced photosynthesis
  - (C) Improved nutrient uptake
  - (D) Enhanced drought tolerance
10. Acid rain reacts with marble and limestone to form ?
- (A) Calcium carbonate
  - (B) Calcium hydroxide
  - (C) Calcium sulphate
  - (D) None of above
11. What is the main component of acid rain ?
- (A) Sulfuric acid
  - (B) Nitric acid
  - (C) Acetic acid
  - (D) Both (A) and (B)
12. How do  $\text{SO}_2$  and  $\text{NO}_2$  emissions affect aquatic ecosystem ?
- (A) By increasing water temperature
  - (B) By reducing water pH
  - (C) By increasing nutrient levels
  - (D) By reducing aquatic life
13. What is the term for the movement of water from the Earth's surface to the atmosphere through plants ?
- (A) Respiration
  - (B) Photosynthesis
  - (C) Transpiration
  - (D) Evaporation
14. What is the major effect of enhanced UV-B radiation on plants ?
- (A) Increased growth rate
  - (B) Improved nutrient uptake
  - (C) Reduced photosynthesis
  - (D) Increased water use
15. What is the consequence of soil nutrient depletion on soil fertility ?
- (A) Increased plant growth
  - (B) Improved soil structure
  - (C) Increased soil pH
  - (D) Reduced crop yields
16. What is the process by which the Earth's plates move and change ?
- (A) Continental drift
  - (B) Plate tectonics
  - (C) Weathering and erosion
  - (D) Glaciation

17. What is the major ecosystem effect of acid rain caused by  $\text{SO}_2$  and  $\text{NO}_2$  emissions ?
- (A) Increased biodiversity
  - (B) Improved water quality
  - (C) Damage to forests and aquatic ecosystem
  - (D) Reduced greenhouse gas emissions
18. What is the term for the study of the Earth's climate and its changes over time ?
- (A) Meteorology
  - (B) Climatology
  - (C) Oceanography
  - (D) Geology
19. What is the main classification of water bodies based on their salinity ?
- (A) Fresh water and salt water
  - (B) Alkaline and acidic
  - (C) Warm and cold
  - (D) Shallow and deep
20. What is the ozone layer's main function ?
- (A) To absorb UV-B radiation
  - (B) To reflect sunlight
  - (C) To regulate Earth's temperature
  - (D) To produce oxygen
21. Which of the following is a way to reduce ozone depletion ?
- (A) Reducing CFC emissions
  - (B) Increasing energy efficiency
  - (C) Using alternative refrigerants
  - (D) All of the above
22. What is the pH level of normal rain water ?
- (A) 5.6
  - (B) 6.5
  - (C) 7.0
  - (D) 8.5
23. Which of the following is a replacement for CFCs in refrigerators ?
- (A) Hydro chlorofluorocarbons (HCFCs)
  - (B) Hydro fluorocarbons (HFCs)
  - (C) Per fluorocarbons (PFCs)
  - (D) All of the above
24. Which of the following is an example of a lentic water body ?
- (A) River
  - (B) Lake
  - (C) Ocean
  - (D) Wetland

25. Which of the following is a major factor affecting the temperature of freshwater ?
- (A) Depth
  - (B) Latitude
  - (C) Altitude
  - (D) All of the above
26. What is the term for the process of using plants to remove pollutants from soil ?
- (A) Phytoremediation
  - (B) Bioremediation
  - (C) Chemical remediation
  - (D) Physical remediation
27. The main components of photochemical smog is ?
- (A) Water vapour
  - (B) Sulphur dioxide
  - (C) Oxides of nitrogen
  - (D) All of the above
28. Which of the following is a common use of rainwater harvesting ?
- (A) Drinking water
  - (B) Irrigation
  - (C) Toilet flushing
  - (D) All of the above
29. Which of the following is a common source of thermal pollution ?
- (A) Industrial processes
  - (B) Power plants
  - (C) Agricultural runoff
  - (D) Domestic sewage
30. Pollutants that are easily manageable and decomposable in nature are called ?
- (A) Biodegradable pollutants
  - (B) Non-biodegradable pollutants
  - (C) Renewable pollutants
  - (D) All of the above
31. What is the term for the process by which thermal pollution affects the quality of water for human consumption ?
- (A) Thermal degradation
  - (B) Thermal pollution
  - (C) Thermal contamination
  - (D) Thermal alteration
32. Which of the following is a type of soil pollutant ?
- (A) Heavy metals
  - (B) Pesticides
  - (C) Fertilizers
  - (D) All of the above

33. Which of the following is a method to remediate soil pollution ?
- (A) Phytoremediation
  - (B) Bioremediation
  - (C) Chemical remediation
  - (D) All of the above
34. What is the primary origin of soil pollutants ?
- (A) Natural sources
  - (B) Human activities
  - (C) Atmospheric deposition
  - (D) Water pollution
35. What is the effect of city sewage discharge on aquatic ecosystems ?
- (A) Eutrophication
  - (B) Acidification
  - (C) Salinization
  - (D) All of the above
36. All forms of water that comes down on Earth, including rain, snow, hail, etc., is known as ?
- (A) Calcification
  - (B) Fixation
  - (C) Precipitation
  - (D) Accumulation
37. Who is associated with 'Chipko Movement' ?
- (A) Salim Ali
  - (B) Sundarlal Bahuguna
  - (C) Rachel Carson
  - (D) None of the above
38. 'Minamata' disease is caused due to pollution by
- (A) Lead
  - (B) PAN
  - (C) Mercury
  - (D) SO<sub>2</sub>
39. The lowest layer of atmosphere is ?
- (A) Mesosphere
  - (B) Stratosphere
  - (C) Troposphere
  - (D) Ionosphere
40. The Indian Environment Protection Act. came into force in ?
- (A) 1976
  - (B) 1986
  - (C) 1988
  - (D) 1996
41. The process that causes wearing away and transportation of particles of rock or soil is called ?
- (A) Salinization
  - (B) Soil formation
  - (C) Erosion
  - (D) Landslide

42. Leader of 'Narmada Bachao Andolan' ?  
(A) Vandana Siva  
(B) Medha Patkar  
(C) Maneka Gandhi  
(D) None of the above
43. Forest helps in mitigating global warming through ?  
(A) Heat radiation  
(B) Heat absorption  
(C) Transpiration  
(D) Photosynthesis
44. Main source of noise pollution ?  
(A) Urbanization  
(B) Industrialization  
(C) Photochemical smog  
(D) Both (A) and (B)
45. The efficiency of energy flow in the ecosystem is about ?  
(A) 1 %  
(B) 10%  
(C) 50%  
(D) 100%
46. The most harmful environmental pollution from nuclear reactor is ?  
(A) Radioactivity  
(B) Particulate formation  
(C) Thermal pollution  
(D) Noise pollution
47. Which of the following enhances soil fertility ?  
(A) Crop rotation  
(B) Improved methods of agriculture  
(C) Using new seed varieties  
(D) Irrigation
48. Energy is returned to the atmosphere in the form of ?  
(A) Potential energy  
(B) Metabolic energy  
(C) Heat  
(D) Vapors
49. The presence of Ozone layer in the atmosphere was first observed by ?  
(A) W.G. Rosen  
(B) Ronald Coarse  
(C) Chapman  
(D) None of the above
50. Which of the following is not a water borne disease ?  
(A) Measles  
(B) Typhoid  
(C) Cholera  
(D) Hepatitis

51. Which of the following is called the secondary air pollutant ?
- (A) PANs
  - (B) Ozone
  - (C) Carbon monoxide
  - (D) Nitrogen dioxide
52. The Ozone layer is present in. ?
- (A) Mesosphere
  - (B) Thermosphere
  - (C) Stratosphere
  - (D) None of the above
53. Which of the following are the negative health effects of noise pollution ?
- (A) Hypertension
  - (B) Hearing loss
  - (C) Stress and headache
  - (D) All of the above
54. Which of the following device is used to measure the atmospheric humidity ?
- (A) Photometer
  - (B) Auxanometer
  - (C) Hygrometer
  - (D) None of the above
55. The year declared as the 'water year' by the Indian Government is ?
- (A) 2010
  - (B) 2005
  - (C) 2006
  - (D) 2007
56. What kind of Eco-system is known as sustainable ?
- (A) The one in which all species are in balance
  - (B) The one in which there are no animals
  - (C) The one in which animals feed on each other
  - (D) All of the above
57. Which of the following statement is TRUE ?
- (A) Eco-Systems may vary in size
  - (B) Eco-Systems are always very large
  - (C) Eco-Systems are always very small
  - (D) None of the above

58. The following is an example of Terrestrial Biome ?
- (A) Rivers
  - (B) Streams
  - (C) Tropical rain forest
  - (D) All of the above
59. Ecosystem is smallest unit of .....
- (A) Ionosphere
  - (B) Lithosphere
  - (C) Biosphere
  - (D) Mesosphere
60. What is the current trend of the Ozone hole ?
- (A) Increasing in size
  - (B) Decreasing in size
  - (C) Remaining stable
  - (D) Disappearing completely
61. India's most famous environmental Lawyer ?
- (A) M.C. Mehta
  - (B) S.P. Godrej
  - (C) M.S. Swaminathan
  - (D) Anil Agrawal
62. Which of the following is not an air pollutant ?
- (A) Smoke
  - (B) CO<sub>2</sub>
  - (C) Nitrogen
  - (D) Sulphur dioxide
63. Moisture in the air is known as
- (A) Water
  - (B) Fog
  - (C) Humidity
  - (D) Snow
64. The portion of the Earth and its environment which can support life is known as
- (A) Crust
  - (B) Biosphere
  - (C) Exosphere
  - (D) Atmosphere
65. Environment is the life support system that includes ?
- (A) Air
  - (B) Water
  - (C) Land
  - (D) All of the above

66. Phytoplankton are. ?
- (A) Producers of forest
  - (B) Producer of lake
  - (C) Consumers of Ocean
  - (D) Omnivores
67. Kaveri water dispute is in between ?
- (A) India and Pakistan
  - (B) Punjab and Haryana
  - (C) Uttar Pradesh and Madhya Pradesh
  - (D) Karnataka and Tamil Nadu
68. The ocean covers ..... percentage of Earth's surface :
- (A) 51.5%
  - (B) 61.0 %
  - (C) 71.0%
  - (D) 91.0%
69. What is the effect of noise pollution on human health ?
- (A) Hearing loss
  - (B) Sleep disturbance
  - (C) Increased stress
  - (D) All of the above
70. Ozone umbrella is located in which layer of atmosphere ?
- (A) Troposphere
  - (B) Stratosphere
  - (C) Mesosphere
  - (D) Ionosphere
71. World Forest day is celebrated on ?
- (A) 21st March
  - (B) 5th June
  - (C) 1st December
  - (D) 7th June
72. What is the permissible limit of noise pollution in residential areas ?
- (A) 40 dB
  - (B) 50 dB
  - (C) 60 dB
  - (D) 70 dB
73. Ozone day is observed on ?
- (A) 3rd January
  - (B) 16th September
  - (C) 10th November
  - (D) 26th March
74. Soil erosion removes surface soil which contains ?
- (A) Organic matter
  - (B) Plant nutrients
  - (C) Both (A) and (B)
  - (D) None of the above

75. One of India's serious environmental problems is forest degradation. What is the main cause of forest degradation ?
- (A) Timber extraction  
 (B) Honey extraction  
 (C) High Altitude  
 (D) Low Rainfall
76. Yellowing of Taj Mahal is an effect of ?
- (A) Global warming  
 (B) Ozone depletion  
 (C) Acid rain  
 (D) All of the above
77. 'Plumbism' is the disorder develops in man when exposed to ?
- (A) Lead  
 (B) Arsenic  
 (C) CO  
 (D) Mercury
78. The unit of total water content of the soil is known as ?
- (A) Holard  
 (B) Chraserd  
 (C) Echard  
 (D) All of the above
79. Pedology is a ..... .
- (A) Study of water  
 (B) Study of air  
 (C) Study of soil  
 (D) None of the above
80. Which among the following result in the formation of soil ?
- (A) Radiation  
 (B) Weathering  
 (C) Erosion  
 (D) Pollution
81. An example of nitrogen fixing bacteria in the soil ?
- (A) Rhizobium  
 (B) Nostoc  
 (C) Azotobacter  
 (D) Nitrobacter
82. Nitrogen fixing blue green alga ?
- (A) Clostridium  
 (B) Nostoc  
 (C) Rhizobium  
 (D) Nitrosomonas
83. Ramsar Convention refers to the conservation of ..... .
- (A) Deserts  
 (B) Agriculture lands  
 (C) Wetlands  
 (D) Forest land

84. What is the outcome of EIA ?
- (A) Environmental clearance
  - (B) Project approval
  - (C) Environmental impact statement
  - (D) All of the above
85. Which of the following is a type of impact assessed in EIA ?
- (A) Environmental impact
  - (B) Social impact
  - (C) Economic impact
  - (D) All of the above
86. Forests prevent soil erosion by binding soil particles in their ?
- (A) Leaves
  - (B) Roots
  - (C) Buds
  - (D) Stems
87. Which heavy metal is the cause for black foot disease ?
- (A) Arsenic
  - (B) Cadmium
  - (C) Mercury
  - (D) Lead
88. What is the approximate average global temperature increase over the 20th century ?
- (A) 0.5°C
  - (B) 0.6°C
  - (C) 0.7°C
  - (D) 0.8°C
89. Colorless odorless and non corrosive air pollutant is ?
- (A) Sulphur dioxide
  - (B) Carbon monoxide
  - (C) Carbon dioxide
  - (D) Ozone
90. Which of the following type of pollution can cause the outbreak of jaundice ?
- (A) Air
  - (B) Thermal
  - (C) Water
  - (D) Land
91. Green Revolution in India was initiated by ?
- (A) M.S. Swaminathan
  - (B) Sundarlal Bahuguna
  - (C) Medha Patkar
  - (D) None of the above

92. An example of non- biodegradable pollutant is ?  
(A) Sewage  
(B) Plastic  
(C) Litter  
(D) Vegetable waste
93. BOD is used for the measurement of ?  
(A) Atmospheric pollution  
(B) Soil pollution  
(C) Water pollution  
(D) Nuclear pollution
94. India Government passed Air Act in the year ?  
(A) 1991  
(B) 1981  
(C) 1982  
(D) 2001
95. Which of the following is a renewable resource ?  
(A) Coal  
(B) Petroleum  
(C) Natural gas  
(D) Solar energy
96. Ear muffs or Cotton plugs are used to reduce pollution of ?  
(A) Air  
(B) Noise  
(C) Thermal  
(D) Nuclear
97. Largest source of air pollution in cities are ?  
(A) Industries  
(B) Sewage  
(C) Automobiles  
(D) Tanneries
98. Green plants are absent in deep sea. Why ?  
(A) Light is absent  
(B) High pressure  
(C) Low temperature  
(D) Great depth
99. First Biosphere reserve in India. ?  
(A) Nilgiri  
(B) Agastyamala  
(C) Eravikulam  
(D) Chinnar
100. Which is the outmost layer of the atmosphere ?  
(A) Troposphere  
(B) Stratosphere  
(C) Ionosphere  
(D) Exosphere

***(Only for Rough Work)***

4. Four alternative answers are mentioned for each question as—A, B, C & D in the booklet. The candidate has to choose the correct answer and mark the same in the OMR Answer-Sheet as per the direction :

**Example :**

**Question :**

- Q. 1 (A) ● (C) (D)  
 Q. 2 (A) (B) ● (D)  
 Q. 3 (A) ● (C) (D)

Illegible answers with cutting and over-writing or half filled circle will be cancelled.

5. Each question carries equal marks. Marks will be awarded according to the number of correct answers you have.
6. All answers are to be given on OMR Answer Sheet only. Answers given anywhere other than the place specified in the answer sheet will not be considered valid.
7. Before writing anything on the OMR Answer Sheet, all the instructions given in it should be read carefully.
8. After the completion of the examination candidates should leave the examination hall only after providing their OMR Answer Sheet to the invigilator. Candidate can carry their Question Booklet.
9. There will be no negative marking.
10. Rough work, if any, should be done on the blank pages provided for the purpose in the booklet.
11. To bring and use of log-book, calculator, pager and cellular phone in examination hall is prohibited.
12. In case of any difference found in English and Hindi version of the question, the English version of the question will be held authentic.

**Impt. :** On opening the question booklet, first check that all the pages of the question booklet are printed properly. If there is any discrepancy in the question Booklet, then after showing it to the invigilator, get another question Booklet of the same series.

4. प्रश्न-पुस्तिका में प्रत्येक प्रश्न के चार सम्भावित उत्तर—A, B, C एवं D हैं। परीक्षार्थी को उन चारों विकल्पों में से सही उत्तर छाँटना है। उत्तर को OMR आन्सर-शीट में सम्बन्धित प्रश्न संख्या में निम्न प्रकार भरना है :

**उदाहरण :**

**प्रश्न :**

- प्रश्न 1 (A) ● (C) (D)  
 प्रश्न 2 (A) (B) ● (D)  
 प्रश्न 3 (A) ● (C) (D)

अपठनीय उत्तर या ऐसे उत्तर जिन्हें काटा या बदला गया है, या गोले में आधा भरकर दिया गया, उन्हें निरस्त कर दिया जाएगा।

5. प्रत्येक प्रश्न के अंक समान हैं। आपके जितने उत्तर सही होंगे, उन्हीं के अनुसार अंक प्रदान किये जायेंगे।
6. सभी उत्तर केवल ओ. एम. आर. उत्तर-पत्रक (OMR Answer Sheet) पर ही दिये जाने हैं। उत्तर-पत्रक में निर्धारित स्थान के अलावा अन्यत्र कहीं पर दिया गया उत्तर मान्य नहीं होगा।
7. ओ. एम. आर. उत्तर-पत्रक (OMR Answer Sheet) पर कुछ भी लिखने से पूर्व उसमें दिये गये सभी अनुदेशों को सावधानीपूर्वक पढ़ लिया जाये।
8. परीक्षा समाप्ति के उपरान्त परीक्षार्थी कक्ष निरीक्षक को अपनी OMR Answer Sheet उपलब्ध कराने के बाद ही परीक्षा कक्ष से प्रस्थान करें। परीक्षार्थी अपने साथ प्रश्न-पुस्तिका ले जा सकते हैं।
9. निगेटिव मार्किंग नहीं है।
10. कोई भी रफ कार्य, प्रश्न-पुस्तिका के अन्त में, रफ-कार्य के लिए दिए खाली पेज पर ही किया जाना चाहिए।
11. परीक्षा-कक्ष में लॉग-बुक, कैलकुलेटर, पेजर तथा सेल्युलर फोन ले जाना तथा उसका उपयोग करना वर्जित है।
12. प्रश्न के हिन्दी एवं अंग्रेजी रूपान्तरण में भिन्नता होने की दशा में प्रश्न का अंग्रेजी रूपान्तरण ही मान्य होगा।

**महत्वपूर्ण :** प्रश्नपुस्तिका खोलने पर प्रथमतः जाँच कर देख लें कि प्रश्न-पुस्तिका के सभी पृष्ठ भलीभाँति छपे हुए हैं। यदि प्रश्नपुस्तिका में कोई कमी हो, तो कक्षनिरीक्षक को दिखाकर उसी सिरीज की दूसरी प्रश्न-पुस्तिका प्राप्त कर लें।