

56

Env.-Set A Tech

15P/293/16

244

480

Question Booklet No.

(To be filled up by the candidate by **blue/black ball-point pen**)

Roll No.

Roll No.

(Write the digits in words)

Serial No. of OMR Answer Sheet

Day and Date

(Signature of Invigilator)

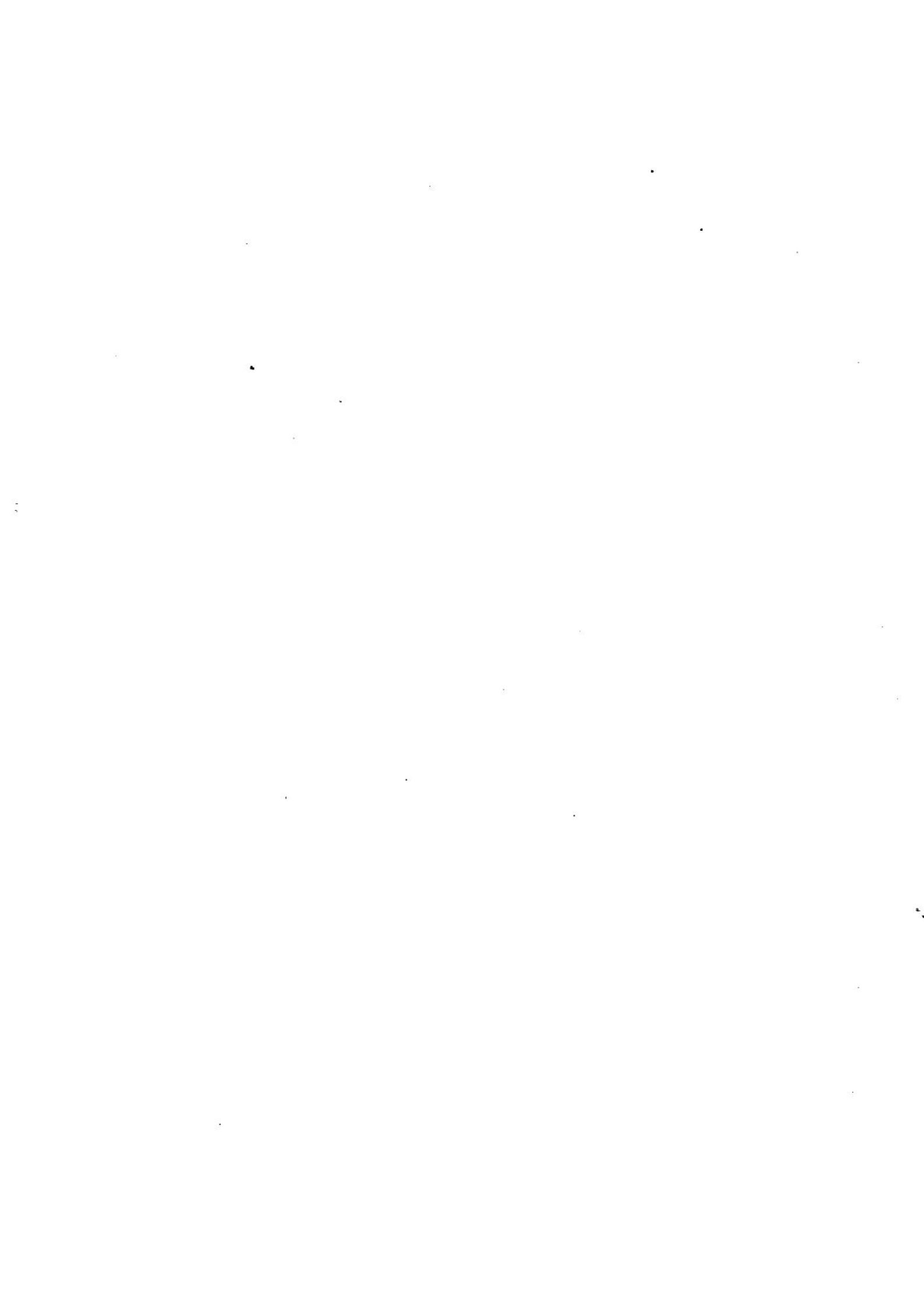
INSTRUCTIONS TO CANDIDATES

(Use only **blue/black ball-point pen** in the space above and on both sides of the Answer Sheet)

1. Within 10 minutes of the issue of the Question Booklet, check the Question Booklet to ensure that it contains all the pages in correct sequence and that no page/question is missing. In case of faulty Question Booklet bring it to the notice of the Superintendent/Invigilators immediately to obtain a fresh Question Booklet.
2. Do not bring any loose paper, written or blank, inside the Examination Hall *except the Admit Card without its envelope.*
3. A separate Answer Sheet is given. *It should not be folded or mutilated. A second Answer Sheet shall not be provided. Only the Answer Sheet will be evaluated.*
4. Write your *Roll Number and Serial Number of the Answer Sheet by pen* in the space provided above.
5. *On the front page of the Answer Sheet, write by pen your Roll Number in the space provided at the top, and by darkening the circles at the bottom. Also, wherever applicable, write the Question Booklet Number and the Set Number in appropriate places.*
6. No overwriting is allowed in the entries of Roll No., Question Booklet No. and Set No. (if any) on OMR sheet and also Roll No. and OMR sheet No. on the Question Booklet.
7. Any changes in the aforesaid entries is to be verified by the invigilator, otherwise it will be taken as unfair means.
8. Each question in this Booklet is followed by four alternative answers. *For each question, you are to record the correct option on the Answer Sheet by darkening the appropriate circle in the corresponding row of the Answer Sheet, by ball-point pen as mentioned in the guidelines given on the first page of the Answer Sheet.*
9. For each question, darken only one circle on the Answer Sheet. If you darken more than one circle or darken a circle partially, the answer will be treated as incorrect.
10. *Note that the answer once filled in ink cannot be changed.* If you *do not wish to attempt a question, leave all the circles in the corresponding row blank* (such question will be awarded zero marks).
11. For rough work, use the inner back page of the title cover and the blank page at the end of this Booklet.
12. Deposit *only the OMR Answer Sheet* at the end of the Test.
13. You are not permitted to leave the Examination Hall until the end of the Test.
14. If a candidate attempts to use any form of unfair means, he/she shall be liable to such punishment as the University may determine and impose on him/her.

[उपर्युक्त निर्देश हिन्दी में अन्तिम आवरण-पृष्ठ पर दिये गये हैं।]

Total No. of Printed Pages : 22



15P/293/16

No. of Questions : 150

प्रश्नों की संख्या : 150

Time : 2½ Hours]

[Full Marks : 450

समय : 2½ घण्टे]

[पूर्णांक : 450

Note : (1) Attempt as many questions as you can. Each question carries 3 (three) marks. One mark will be deducted for each incorrect answer. Zero mark will be awarded for each unattempted question.

अधिकाधिक प्रश्नों को हल करने का प्रयत्न करें। प्रत्येक प्रश्न 3 (तीन) अंक का है। प्रत्येक गलत उत्तर के लिए एक अंक काटा जायेगा। प्रत्येक अनुत्तरित प्रश्न का प्राप्तांक शून्य होगा।

(2) If more than one alternative answers seem to be approximate to the correct answer, choose the closest one.

यदि एकाधिक वैकल्पिक उत्तर सही उत्तर के निकट प्रतीत हों, तो निकटतम सही उत्तर दें।

1. Due to Coriolis effect, wind in the :
 - (1) Northern Hemisphere moves to the left with respect to the rotating earth
 - (2) Northern Hemisphere moves to the right
 - (3) Southern Hemisphere move northward
 - (4) Both Hemisphere move independent of each other
2. Precipitation of CaCO_3 may occur when :
 - (1) Sea water is shallow and CO_2 is lost.
 - (2) Sea water is warm and CO_2 is being lost.
 - (3) Sea water is cold and CO_2 is being lost.
 - (4) Sea water is deep and CO_2 is being added.
3. Critical point for water in a P - T diagram Suggests :
 - (1) Water is unstable
 - (2) Steam is the only stable phase
 - (3) Both ice and steam are stable phases
 - (4) Steam, liquid water and ice are stable phases
4. The range of pH for river water in India is :
 - (1) 1 - 14
 - (2) 4 - 5
 - (3) 6.5 - 8.0
 - (4) 7 - 12

(1)

P. T. O.

5. Ozone toxicity to plants is generally due to the involvement of which unsaturated hydrocarbons :
- (1) Unsaturated fatty acid (2) Methylene
(3) Ethylene (4) Olefins
6. Vermiculture technology is used in :
- (1) Production of Fish (2) Animal Husbandary
(3) Poultry Farming (4) Organic Farming
7. Which Indian state is most affected by Arsenic contamination ?
- (1) Uttar Pradesh (2) Odisha (3) West Bengal (4) Tripura
8. Energy flow in an ecosystem is :
- (1) Cyclic (2) Multidirectional
(3) Sequential (4) Unidirectional
9. Match List-I and List-II and select *correct* answer :
- | List - I | | List - II | |
|-----------------|--------------------|-----------|--|
| (a) Mesozoic | (i) Tertiary | | |
| (b) Proterozoic | (ii) Triassic | | |
| (c) Cenozoic | (iii) Pre Cambrian | | |
| (d) Paleozoic | (iv) Permian | | |
- (a) (b) (c) (d)
- (1) iii ii i iv
(2) ii iii i iv
(3) ii iii iv i
(4) iii ii iv i
10. The most abundant alkaline component of the atmosphere is :
- (1) Ammonia (2) Nitrogen
(3) Sulphur dioxide (4) Carbon Dioxide
11. The faecal indicator bacteria are :
- (1) Staphylococcus aureus (2) Streptococcus faecalis
(3) Escherichia coli (4) Salmonella typhi
12. The maximum permissible level of BOD (mg/l) in wastewater that is let into river is :
- (1) 20 (2) 30 (3) 40 (4) 10
13. Coral reefs are vulnerable to :
- (1) Siltation (2) Flood water (3) Nutrients (4) Salt flow

14. **Assertion (A) :** Wetlands are often described as ecotones.
Reason (R) : Wetlands are biologically rich dynamic zones of transition between two different ecosystems.
- (1) Both (A) and (R) are true and (R) is the correct explanation of (A)
 - (2) Both (A) and (R) are true but (R) is not the correct explanation of (A)
 - (3) (A) is true but (R) is false
 - (4) (A) is false but (R) is true
15. The first National Park established in India is :
- (1) Indira Gandhi National Park
 - (2) Indravati National Park
 - (3) Corbett National Park
 - (4) Kaziranga National Park
16. Which one of the following group of plants is most resistant to ionizing radiations ?
- (1) Coniferous Forest
 - (2) Grass Land
 - (3) Lichen and Mosses
 - (4) Mixed Forest
17. The recent Asbestos controversy about the French ship going to Alang was primarily due to :
- (1) Violation of Indian Coastal Zone Laws.
 - (2) Violation of Transnational Movement of Hazardous Waste.
 - (3) Gujarat State Pollution Control Laws
 - (4) Indian Air Pollution Laws.
18. The first Environmental Law in India was enacted in :
- (1) 1947
 - (2) 1950
 - (3) 1972
 - (4) 1982
19. The mean annual rainfall in India is :
- (1) 110 mm
 - (2) 110 cm
 - (3) 85 cm
 - (4) 110 m
20. Hyperplasia means :
- (1) Excessive motility of a muscle
 - (2) Voracious eating
 - (3) Abnormal increase in number of cells
 - (4) An increase in size of a cell
21. Sodium is usually estimated by which of the following analytical technique :
- (1) Flame Photometry
 - (2) Coulometry
 - (3) High pressure liquid chromatography
 - (4) Visible spectrophotometry

20. सप्तमभावस्थितो ग्रहो भवति

- (1) मारकः (2) पालकः (3) हारकः (4) कारकः

21. कुजस्य उच्चराशिरस्ति

- (1) वृषः (2) मकरः (3) वृश्चिकः (4) सिंहः

22. सूर्यस्य भाग्योदवर्षम्

- (1) 11 वर्षम् (2) 21 वर्षम् (3) 22 वर्षम् (4) 36 वर्षम्

23. नपुंसकग्रहोऽस्ति

- (1) चन्द्रः (2) सूर्यः (3) शनिः (4) गुरुः

24. जयासंज्ञकतिथिरस्ति

- (1) पूर्णिमा (2) अमावस्या (3) सप्तमी (4) तृतीया

25. सूर्याष्टकवर्गाङ्काः सन्ति

- (1) 48 (2) 51 (3) 67 (4) 93

26. त्रिपताकीचक्रेण ज्ञायते

- (1) गृहारिष्टम् (2) बालरिष्टम् (3) धनारिष्टम् (4) विद्यारिष्टम्

27. शुक्रस्य मित्रमस्ति

- (1) शनिः (2) सूर्यः (3) कुजः (4) गुरुः

30. Match the items in List - I with List - II and select the *correct* answer using codes given below :

List - I	List - II
(a) CFC	(i) Bhopal Gas Tragedy
(b) CO ₂	(ii) Global Warming
(c) BOD	(iii) Ozone depletion
(d) MIC	(iv) Water Pollution

Code :

	(a)	(b)	(c)	(d)
(1)	iii	ii	iv	i
(2)	iv	iii	i	ii
(3)	i	ii	iii	iv
(4)	iv	iii	ii	i

31. The global warming efficiency of a CFC molecule in relation to a CO₂ molecule is higher by a factor of :

(1) 125 (2) 25 (3) 20,000 (4) 1500

32. Arsenic problem in India is primarily due to :

(1) Overexploitation of arsenopyrite in the hinterland
 (2) Overexploitation of coal in Bihar and Bengal
 (3) Overexploitation of ground water in the affected areas
 (4) Overexploitation of surface water in the affected areas

33. Acid rain is caused by :

(1) CO and CO₂ (2) SO₂ and O₂
 (3) SO₂ and NO₂ (4) NO₂ and O₂

34. What will be the outcome of Eutrophication of surface waters ?

(1) Overproduction of biomass
 (2) Decrease in nitrogen concentration
 (3) Decrease in phosphorus concentration
 (4) Decrease in both nitrogen and phosphorus concentrations

35. Ecologically sensitive and important areas, breeding and spawning grounds of marine life etc., are categorized in coastal Regulation Zone as :

(1) CRZ -IV (2) CRZ - II (3) CRZ - III (4) CRZ - I

36. Match the items in List - I with List - II and select the *correct* answer using codes given below :

List - I		List - II	
(a)	Montreal Convention	(i)	Ozone depletion
(b)	Rio-Summit	(ii)	Greenhouse gas
(c)	Ramsah Convention	(iii)	Convention on Biological diversity
(d)	Kyoto Protocol	(iv)	Wetlands convention

Code :

- | (a) | (b) | (c) | (d) |
|---------|-----|-----|-----|
| (1) iii | ii | i | iv |
| (2) iv | iii | i | ii |
| (3) i | iii | iv | ii |
| (4) i | ii | iv | iii |
37. In the analysis of 15 water samples, Ca and Mg gave a correlation of + 0.95. It means :
- (1) Ca came from soil and Mg came from biota
 - (2) Ca and Mg both came from the same type of water
 - (3) Ca and Mg are both cogenetic
 - (4) Ca and Mg came from different sources
38. Climatic stress is caused by insufficient and/or excessive regime of :
- (1) Temperature
 - (2) Humidity
 - (3) Solar radiation
 - (4) All of the above
39. The chemical that is used to ripen mangoes is :
- (1) Calcium sulphide
 - (2) Calcium carbide
 - (3) Calcium carbonate
 - (4) Calcium chloride
40. Organisms that generate energy using light are :
- (1) Oligotrophs
 - (2) Chaemorganotrophs
 - (3) Chaemolithotrophs
 - (4) Photoautotrophs
41. Land use pattern is usually studied by the following technique :
- (1) Aerial photography
 - (2) Satellite imaging
 - (3) Satellite imaging and G.I.S.
 - (4) Satellite imaging, G.I.S. and G.P.S.
42. To conserve coral reefs the Govt. of India declared one of the following as Marine Park :
- (1) Gulf of Kutch
 - (2) Lakshadweep islands
 - (3) Gulf of Mannar
 - (4) Andaman Islands

43. The use of microorganism metabolism to remove pollutants such as oil spills in the water bodies is known as :
- (1) Biomagnification (2) Bioremediation
(3) Biomethanation (4) Bioreduction
44. The largest number of Tiger Reserves are located in :
- (1) Karnataka (2) Andhra Pradesh
(3) Madhya Pradesh (4) West Bengal
45. The Siberian Crane, an endangered migratory bird is a regular visitor of which of the following national park/bird sanctuaries ?
- (1) Ranganathittu bird sanctuary (2) Keoladeo national park
(3) Vedanthangal bird sanctuary (4) Sultanpur bird sanctuary
46. In an ecotone, the species which become abundant are called :
- (1) Edge species (2) Keystone species
(3) Endemic species (4) Foster species
47. The word 'ecology' (Ökologie) was coined in 1866 by :
- (1) Charles Darwin (2) Robert Whittaker
(3) Arthur Tansley (4) Ernst Haeckel
48. Which one of the following is a useful biological indicator of Sulphur-dioxide pollution ?
- (1) Bryophytes (2) Algal blooms
(3) Pseudomonas (4) Lichens
49. In Nitrogen Cycle, soil nitrates are transformed into free nitrogen by :
- (1) Nitrifying bacteria (2) Denitrifying bacteria
(3) Ammonifying bacteria (4) Both (1) and (3)
50. The earth's magnetic field is thought to be produced by :
- (1) Mantle plumes (2) Volcanism
(3) Radioactive decay (4) Convecting metal in the core
51. The ultimate disposition of mountain ranges is to become :
- (1) Ocean floor
(2) Stable continental interior
(3) Subducted into the asthenosphere
(4) Precambrian shields
52. In an overturned fold, the limbs dip :
- (1) in the opposite direction (2) in the same direction
(3) perpendicular to each other (4) at an obtuse angle to each other

53. Why are deep focus earthquakes concentrated in subduction zones ?
- (1) This is where descending plates sink into the mantle.
 - (2) Because subduction zones redirect earthquakes into the earth.
 - (3) All faults originate in subduction zones.
 - (4) The softer rocks in subduction zones cause faults to sink to deep depths.
54. What glassy volcanic rock has so many air pockets that it can float ?
- (1) Obsidian
 - (2) Sponge rock
 - (3) Pumice
 - (4) Lava
55. Partial melting of the is thought to be the primary source of the Hawaiian basaltic magmas.
- (1) Upper mantle
 - (2) Continental crust
 - (3) Oceanic crust
 - (4) Lower mantle
56. Several factors tend to quicken soil formation, but the two most important are :
- (1) Carbonate bedrock and acidic water
 - (2) Heat and abundant water
 - (3) Water and quartz-rich soils
 - (4) Heat and pressure
57. In general, cementation affects clastic sediment by :
- (1) Gluing the particles together and increasing pore space
 - (2) Causing it to become brittle and crack
 - (3) Turning it into a crystalline rock
 - (4) Gluing the particles together and decreasing pore space
58. Rocks metamorphosed within a volcanic/plutonic complex are subjected to relatively, when compared to normal conditions in a plate interior.
- (1) high pressure and low temperature
 - (2) high pressure and high temperature
 - (3) low pressure and low temperature
 - (4) low pressure and high temperature
59. A stream's discharge is the volume of :
- (1) water passing through a specific point along the stream in a unit of time
 - (2) solid sediment carried by the stream in a unit of time
 - (3) dissolved mineral matter carried by the stream in a unit of time
 - (4) excess water during flood stage
60. The area across which precipitation and surface water is able to percolate downward to replenish an aquifer is called the :
- (1) replenishment zone
 - (2) refreshment zone
 - (3) recharge area
 - (4) discharge area

61. Mud cracked surfaces are most likely to be associated with :
- (1) bajadas (2) alluvial fans
(3) playas (4) pediments
62. Within continental ice sheets, the ice generally flows toward the edge or terminus of the glacier.
- (1) from the thickest ice outward (2) downslope
(3) from the highest elevation (4) upslope
63. Coastal straightening is caused by :
- (1) longshore drift (2) rip currents
(3) barrier island deposition (4) wave refraction
64. Gold is almost always found naturally as a :
- (1) sulfide mineral (2) native element
(3) oxide mineral (4) embedded element
65. The brain of any computer system is :
- (1) ALU (2) Memory
(3) CPU (4) Control unit
66. What difference does the 5th generation computer have from other generation computers ?
- (1) Technological advancement (2) Scientific code
(3) Object Oriented Programming (4) All of the above
67. The binary system uses powers of :
- (1) 2 (2) 10 (3) 8 (4) 16
68. A computer program that converts assembly language to machine language is :
- (1) Compiler (2) Interpreter
(3) Assembler (4) Comparator
69. The radian of a number system :
- (1) Is variable
(2) Has nothing to do with digit position value
(3) Equals the number of its distinct counting digits
(4) Is always an even number
70. The section of the CPU that selects, interprets and sees to the execution of program instructions :
- (1) Memory (2) Register unit
(3) Control unit (4) ALU

71. A camera uses a to form an image on a piece of film at the back.
 (1) convex lens (2) concave lens
 (3) diverging lens (4) none of these
72. Short-sight defect could be corrected by a
 (1) convex lens (2) concave lens
 (3) converging lens (4) none of these
73. Which one of the following units is a fundamental unit ?
 (1) watt (2) joule/sec (3) ampere (4) newton
74. 10^5 Fermi is equal to :
 (1) 1 meter (2) 100 micron (3) 1 angstrom unit (4) 1 mm
75. The number values 6.022×10^{23} is also called :
 (1) Dalton Number (2) Avogadro's Number
 (3) Atomic Number (4) Mass Number
76. The Stockholm Convention is a global treaty to protect humans from :
 (1) toxic gases (2) hospital acquired infections
 (3) persistent organic pollutants (4) carbon monoxide
77. Point out the right match concerning the toxic metal and associated adverse impact :
 (1) Zn-Brain tissue damage (2) Ni-Keratosis
 (3) Ar-Renal poisoning (4) Hg-Pulmonary disease
78. What is OH-ion concentration of HCl whose pH is 3 ?
 (1) -3 (2) 3 (3) 10^{-3} (4) 10^{-11}
79. The chemical formula for CFC-11 is :
 (1) CF_2Cl_2 (2) $CFCl_3$ (3) $CHFCl_2$ (4) $CHCl_3$
80. Which of the following parameters is *not* an indicator of water vapour present in a certain quantity of air ?
 (1) Virtual temperature (2) Potential temperature
 (3) Wet bulb temperature (4) Dew point
81. The relationship between two organisms in which one receives benefit at the cost of other is known as :
 (1) Predation (2) Parasitism
 (3) Scavenging (4) Symbiosis

82. Compared to CO_2 , methane has global warming potential of :
 (1) 5 - 10 times more (2) 20 - 25 times more
 (3) 40 - 45 times more (4) 60 - 65 times more
83. Laterite soil contains more of :
 (1) Iron and Aluminium (2) Magnesium and Boron
 (3) Manganese and Silicate (4) Potassium and Lead
84. Which of the following is *not* an IUCN-designated threatened species found in India ?
 (1) Asiatic Lion (2) Bengal Tiger
 (3) Indian White rumped vulture (4) Mountain gorilla
85. Algal biofertilizer consists of :
 (1) Blue green algae and earthworm (2) Algal biomass and Mycorrhiza
 (3) Blue green algae and Azolla (4) Green algae and Rhizobia
86. A volcanic eruption will be violent if there is :
 (1) High silica and low volatiles (2) High silica and high volatiles
 (3) Low silica and low volatiles (4) Low silica and high volatiles
87. Brown forest soil is also known as :
 (1) Entisols (2) Altisols (3) Spodosols (4) Mollisols
88. Clay minerals are :
 (1) Tectosilicates (2) Sorosilicates
 (3) Inosilicates (4) Phyllosilicates
89. Environmental Protection Act was enacted in India during :
 (1) 1986 (2) 1984 (3) 1994 (4) 1987
90. The soil type which is good for agriculture is :
 (1) Podozols (2) Latosols (3) Serpent soil (4) Solonachak
91. As per Indian Standards (BIS) for drinking water desirable limit for total hardness as CaCO_3 is :
 (1) 100 mg/l (2) 200 mg/l (3) 300 mg/l (4) 400 mg/l
92. Among total dissolved matter in marine water, chlorine accounts for :
 (1) 30% (2) 55% (3) 12% (4) 6%
93. Removal of top fertile soil by water is called :
 (1) Leaching (2) Siltation
 (3) Weathering of soil (4) Soil erosion

94. Which one of the following makes blood toxic, after combining with haemoglobin ?
(1) CO_2 (2) CO (3) SO_2 (4) ClI_4
95. What is the half life of ^{131}I ?
(1) 60 days (2) 8 days (3) 12 years (4) 30 days
96. Which of the following food chain is correct ?
(1) Phytoplankton → Zooplankton → Turtle → Crabs
(2) Phytoplankton → Zooplankton → Crab → Turtle
(3) Turtle → Crab → Zooplankton → Phytoplankton
(4) Zooplankton → Turtle → Crab → Phytoplankton
97. Which of the following is *not* categorized as an internal factor of an ecosystem ?
(1) Decomposition (2) Succession (3) Root competition (4) Bedrock
98. Pleistocene represents period of :
(1) Cold climate
(2) Warm climate
(3) Alteration of cold and warm climate with high proportion of cold period
(4) Alteration of cold and warm climate with very high proportion of warm period
99. The mineral, most resistant to chemical weathering is :
(1) Olivine (2) Quartz (3) K-feldspar (4) Biotite
100. Characteristic difference between two polar Ice Caps is :
(1) Arctic Ice Cap is on land
(2) Antarctic Ice Cap is on land
(3) Both are on land but Antarctic Ice Cap is thicker
(4) Both are on sea but Arctic Ice Cap is thicker
101. The El Nino disappears in March and re-appears in :
(1) May (2) August
(3) October (4) December
102. Laterite represents :
(1) Regolith soil (2) Glacial soil
(3) Black cotton soil (4) Red soil
103. Public Liability Insurance Act came into existence in the year :
(1) 1986 (2) 1989 (3) 1991 (4) 1995

104. Which of the following statements is/are *correct* ?
- A. Ozone Depletion causes reduction in stratospheric and upper tropospheric temperatures.
 - B. Increase in Green House Gases causes reduction in stratospheric and upper tropospheric temperatures.
- (1) A only (2) B only (3) Both (4) None
105. If the Arctic Ice was somehow replaced with dense forest, which of the following situation may arise :
- (1) It will accelerate Global Warming
 - (2) It will decelerate Global Warming
 - (3) It may or may not affect Global warming
 - (4) It will have no affect on Global Warming
106. What do you understand by the term 'Dark Fermentation' ?
- (1) It is a method to reduce CO_2 in the atmosphere.
 - (2) It is a method to produce Hydrogen as fuel from wastewater.
 - (3) It is a method to dispose nuclear wastes.
 - (4) It is a method to produce methane from organic waste.
107. Which of the following are the potential benefits of Nuclear fusion reactors?
- A. Enough readily available fuel to last more than millions of years.
 - B. No Green House gas emissions.
 - C. Plants will produce more readily controllable nuclear wastes.
 - D. Deuterium and Lithium can be used as potential fuels.
- (1) A, B & C only
(2) B, C & D only
(3) A & D only
(4) A, B, C & D only
108. Which of the following statements is/are *correct* about syngas ?
- A. It is a mixture of carbon monoxide and hydrogen.
 - B. It can easily be converted into gasoline through a process called steam reforming.
 - C. It is easily storable.
 - D. It is combustible and can be used as fuel in Internal combustion engines.
 - E. Syngas has almost double the energy density of natural gas.
- (1) All except D
(2) All except E
(3) All except A & E
(4) None of the above options are correct

109. Which of the following are the objectives of Mars Orbiter Mission launched by India in mid November 2014 ?
- A. Detect Methane in the atmosphere of Mars.
 - B. Map the surface composition of Mars.
 - C. Measure atomic hydrogen in the atmosphere of Mars.
 - D. Understand Martian dust storms.
- (1) A, B & C only (2) B, C & D only
(3) A & D only (4) A, B, C & D only
110. According to Western Ghats Ecological Expert Panel report – Ecologically Sensitive Areas are :
- A. Ecologically important.
 - B. Economically important.
 - C. Vulnerable to even mild disturbances.
- (1) A only (2) A & C only
(3) C only (4) A, B & C
111. Which of the following types of Coral Reefs are found in India ?
- A. Atoll.
 - B. Fringing.
 - C. Barrier.
- (1) A & B only (2) A & C only
(3) B & C only (4) A, B & C
112. Desertification can lead to :
- A. Decrease in food supplies.
 - B. Decrease in water supplies.
 - C. Migration.
 - D. Loss of jobs.
 - E. Global warming.
- (1) All except D & E
(2) All except E
(3) All except D
(4) All of the above options are wrong

113. Which of the following is *true* with regard to regulation of GM crops in India ?
- A. At present GM crops are regulated under purview of the Union Ministry of Agriculture.
- B. Ministry of Environment and forest has introduced a new bill to set up a new regulatory system for GM crops by the name Biotechnology Regulatory Authority of India (BRAI).
- C. The Bill proposes setting up BRAI under the Ministry of Science and Technology.
- D. BRAI will act as a single window clearance system for products of modern biotechnology, including GM crops.
- (1) A, B & D only (2) A, B & C only
(3) A, C & D only (4) C & D only
114. Hydrogen is being projected as the fuel for future. Which of the following processes are used to produce Hydrogen ?
- A. Steam Methane Reformation.
- B. Gasification of Coal.
- C. Gasification of biomass.
- D. Electrolytic process - using electricity to produce hydrogen.
- E. Photolytic process - using sunlight to produce hydrogen.
- (1) All except A
(2) All except B
(3) All except A & B
(4) All of the above options are wrong
115. Which of the following Ozone depleting substances have been completely phased out (Both production and consumption) from India ?
- A. CFCs. B. CTC.
C. Halons. D. Methyl Bromides.
E. HCFCs.
- (1) All except D & E
(2) All except E
(3) All except B, C, D & E
(4) None of the above options are correct
116. The targets for the first commitment period of the Kyoto Protocol cover emissions of the six main green house gases, which of the following gas is *not* one of these ?
- (1) Carbontetrachloride (CTC) (2) Hydrofluorocarbons (HFCs)
(3) Perfluorocarbons (PFCs) (4) Sulphur hexafluoride (SF₆)

117. Boron is an essential micronutrient for crops. Which of the followings are the functions of Boron in crops ?
 A. Facilitates pollination.
 B. Aids in translocation of sugar and carbohydrates.
 C. It plays an important role in the proper function of cell membranes.
 D. Helps in Nitrogen fixation.
 E. Aids in photosynthesis.
 (1) All except D & E
 (2) All except E
 (3) All except C, D & E
 (4) None of the above options are correct
118. Which of the following can accelerate global warming ?
 A. Rice cultivation.
 B. Cattle breeding.
 C. Melting of permafrost in the Arctic region.
 (1) A & C only
 (2) A & B only
 (3) B & C only
 (4) A, B & C
119. Which of the following crops are used for producing Bio-fuels ?
 A. Sugarcane
 B. Corn
 C. Potato
 (1) A & B only
 (2) A & C only
 (3) B & C only
 (4) A, B & C
120. Horticulture is the science of cultivation of :
 A. Fruit.
 B. Vegetables
 C. Flowers
 (1) A & B only
 (2) C only
 (3) A, B & C
 (4) A & C only
121. An oligotrophic lake has :
 (a) High levels of nutrients in water;
 (b) High aquatic productivity;
 (c) Algal blooms;
 (d) Low nutrients and low productivity; and
 (e) Azaridine, Ethylene dibromide, Bis(chloromethyl) ether are
 (1) Alkylating agents
 (2) Hydrocarbons
 (3) Hydrazines
 (4) Aromatic amines

122. Match List - I with List - II and choose the correct answer from the codes given below :

List - I (Air Pollutants)	List - II (Sources/Activities)
(a) Carbon monoxide	(i) Coal burning
(b) Nitrogen oxide	(ii) Cigarette Smoking
(c) Sulphur dioxide	(iii) Chemical reaction with VOCs
(d) Ozone	(iv) Power and Industrial Plant

Codes :

	(a)	(b)	(c)	(d)
(1)	ii	iv	i	iii
(2)	i	ii	iii	iv
(3)	iii	i	iv	ii
(4)	iv	iii	ii	i

123. The chemical used in a fermenter with molasses as a substrate is :

- (1) Diammonium sulphate
- (2) Diammonium phosphate
- (3) Diammonium nitrate
- (4) Diammonium chloride

124. Which pyramid is always straight ?

- | | |
|------------------------|-----------------------------------|
| (1) Pyramid of biomass | (2) Pyramid of number |
| (3) Pyramid of energy | (4) Pyramid of number and biomass |

125. Which of the following type of materials present in a landslide suggest that the movement was rotational ?

- (1) Rockflow, Debris flow, Earthflow
- (2) Rock slump, Debris slump, Earth slump
- (3) Rockfall, Debris fall, Earth fall
- (4) Rock topple, Debris topple, Earth topple

126. Which of the following parameters is *not* a good indicator of contamination in ground water ?

- | | |
|------------|---------------|
| (1) BOD | (2) Nitrates |
| (3) Silica | (4) Chlorides |

127. Which of the following is a type of biodiversity extinction caused primarily due to anthropogenic activities ?
- (1) Carboniferous rain forest collapse
 - (2) Permian - Triassic extinction
 - (3) Cretaceous paleogene extinction
 - (4) Holocene extinction
128. An equatorial west to east remote sensing satellite orbiting the earth at an altitude of 36,000 km is called :
- (1) Sun - synchronous satellite
 - (2) Geostationary satellite
 - (3) Space shuttle
 - (4) Stereo imager
129. Azollapinnata is a :
- (1) Blue green algae
 - (2) Green algae
 - (3) Red algae
 - (4) Fern
130. In EIA the baseline data describes :
- (1) The environmental consequences by mapping
 - (2) Existing environmental status of the identified study area
 - (3) Assessment of risk on the basis of proposal
 - (4) Demographic and socioeconomic Data
131. What is Ecomark ?
- (1) Label given to recycled products
 - (2) Label given to environment friendly products
 - (3) Land mark indicating the boundaries of bioparks
 - (4) Label given to non-recyclable products
132. REDD stands for :
- (1) Recurring Emission from Deforestation and Forest Degradation
 - (2) Reducing Environmental Degradation and Forest Degradation
 - (3) Reducing Emissions from Deforestation and Forest Degradation
 - (4) Reducing Emissions from Degradeable Deposits of Wastes
133. The environmental lapse rate during day time is governed by :
- | | |
|------------------------------|------------------|
| (i) Wind speed | (ii) Sunlight |
| (iii) Topographical features | (iv) Cloud cover |
- The correct answer is :
- (1) (i) and (ii) only
 - (2) (ii) and (iii) only
 - (3) (i), (ii) and (iii) only
 - (4) (i) and (iv) only

134. The wavelength range of UV – C radiations is :
- (1) 200 - 280 nm (2) 180 - 240 nm
(3) 320 - 400 nm (4) 240 - 300 nm
135. "Double digging" is a method of :
- (1) Bio-intensive agriculture (2) Deforestation
(3) Aforestation (4) Water conservation
136. The rate of replacement of species along a gradient of habitats pertains to :
- (1) Alpha diversity (2) Beta diversity
(3) Gamma diversity (4) Species diversity
137. If individuals of a species remain alive only in captivity or other human controlled conditions, the species is said to be :
- (1) Ecologically extinct (2) Mass extinct
(3) Wild extinct (4) Anthropogenic extinct
138. Vegetation cover shows maximum reflectance in which of the following regions of the electromagnetic radiation spectrum ?
- (1) Ultraviolet (2) Near infrared
(3) Middle infrared (4) Visible
139. Permafrost represents :
- (1) permanently frozen subsurface soil
(2) frozen leaves of Oak trees
(3) frozen needles of pine trees
(4) temporarily frozen subsurface soil
140. Which of the following material has the highest hydraulic conductivity ?
- (1) Clay (2) Sandstone
(3) Limestone (4) Quartzite
141. Which of the following energy sources is *not* renewable on human time scale ?
- (1) Solar (2) Hydrothermal
(3) Geothermal (4) Biomass
142. In nuclear thermal reactors, which of the following is *not* used as moderator ?
- (1) Normal water (2) Heavy water
(3) Graphite (4) Liquid Helium
143. Asphyxiation is caused by :
- (1) HCN, COCl₂ (2) NO_x
(3) CHCl₃ (4) AsH₃

144. The major source of BaP (Benzo-a-pyrene) in atmospheric environment is :
(1) residential wood burning (2) gasoline
(3) coal tar (4) cooked meat
145. Dinosaur become extinct in :
(1) Jurassic (2) Cretaceous
(3) Permian (4) Carboniferous
146. The Paithan (Jayakwadi) Hydro-electric project, completed with the help of Japan, is on the river :
(1) Ganga (2) Cauvery
(3) Narmada (4) Godavari
147. The percentage of irrigated land in India is about :
(1) 45 (2) 65 (3) 35 (4) 25
148. The southernmost point of peninsular India (Kanyakumari) is :
(1) south of the Equator (2) north of Tropic of Cancer
(3) south of the Capricorn (4) north of the Equator
149. Which of the following are *true* regarding Jhum cultivation in India ?
I. It is largely practiced in Assam
II. It is referred to as 'slash and burn' technique
III. In it, the fertility is exhausted in a few years
(1) I, II and III (2) II and III
(3) I and II (4) I and III
150. Which of the following groups of rivers originate from the Himachal mountains ?
(1) Beas, Ravi and Chenab (2) Sutlej, Beas and Ravi
(3) Ravi, Chenab and Jhelum (4) Sutlej, Ravi and Jhelum

अभ्यर्थियों के लिए निर्देश

(इस पुस्तिका के प्रथम आवरण-पृष्ठ पर तथा उत्तर-पत्र के दोनों पृष्ठों पर केवल नीली/काली बाल-प्वाइंट पेन से ही लिखें।)

1. प्रश्न पुस्तिका मिलने के 10 मिनट के अन्दर ही देख लें कि प्रश्नपत्र में सभी पृष्ठ मौजूद हैं और कोई प्रश्न छूटा नहीं है। पुस्तिका दोषयुक्त पाये जाने पर इसकी सूचना तत्काल कक्ष निरीक्षक को देकर सम्पूर्ण प्रश्नपत्र की दूसरी पुस्तिका प्राप्त कर लें।
2. परीक्षा भवन में लिफाफा रहित प्रवेश-पत्र के अतिरिक्त, लिखा या सादा कोई भी खुला कागज साथ में न लायें।
3. उत्तर-पत्र अलग से दिया गया है। इसे न तो मोड़ें और न ही विकृत करें। दूसरा उत्तर-पत्र नहीं दिया जायेगा। केवल उत्तर-पत्र का ही मूल्यांकन किया जायेगा।
4. अपना अनुक्रमांक तथा उत्तर-पत्र का क्रमांक प्रथम आवरण-पृष्ठ पर पेन से निर्धारित स्थान पर लिखें।
5. उत्तर-पत्र के प्रथम पृष्ठ पर पेन से अपना अनुक्रमांक निर्धारित स्थान पर लिखें तथा नीचे दिये वृत्तों को गाढ़ा कर दें। जहाँ-जहाँ आवश्यक हो वहाँ प्रश्न-पुस्तिका का क्रमांक तथा सेट का नम्बर उचित स्थानों पर लिखें।
6. ओ० एम० आर० पत्र पर अनुक्रमांक संख्या, प्रश्न-पुस्तिका संख्या व सेट संख्या (यदि कोई हो) तथा प्रश्न-पुस्तिका पर अनुक्रमांक संख्या और ओ० एम० आर० पत्र संख्या की प्रविष्टियों में उपरिलेखन की अनुमति नहीं है।
7. उपर्युक्त प्रविष्टियों में कोई भी परिवर्तन कक्ष निरीक्षक द्वारा प्रमाणित होना चाहिये अन्यथा यह एक अनुचित साधन का प्रयोग माना जायेगा।
8. प्रश्न-पुस्तिका में प्रत्येक प्रश्न के चार वैकल्पिक उत्तर दिये गये हैं। प्रत्येक प्रश्न के वैकल्पिक उत्तर के लिये आपको उत्तर-पत्र की सम्बन्धित पंक्ति के सामने दिये गये वृत्त को उत्तर-पत्र के प्रथम पृष्ठ पर दिये गये निर्देशों के अनुसार बाल प्वाइंट पेन से गाढ़ा करना है।
9. प्रत्येक प्रश्न के उत्तर के लिये केवल एक ही वृत्त को गाढ़ा करें। एक से अधिक वृत्तों को गाढ़ा करने पर अथवा एक वृत्त को अपूर्ण भरने पर वह उत्तर गलत माना जायेगा।
10. ध्यान दें कि एक बार स्याही द्वारा अंकित उत्तर बदला नहीं जा सकता है। यदि आप किसी प्रश्न का उत्तर नहीं देना चाहते हैं, तो सम्बन्धित पंक्ति के सामने दिये गये सभी वृत्तों को खाली छोड़ दें। ऐसे प्रश्नों पर शून्य अंक दिये जायेंगे।
11. रफ कार्य के लिये इस पुस्तिका के मुखपृष्ठ के अंदर वाला पृष्ठ तथा अंतिम खाली पृष्ठ का प्रयोग करें।
12. परीक्षा के उपरान्त केवल ओ० एम० आर० उत्तर-पत्र ही परीक्षा भवन में जमा करें।
13. परीक्षा समाप्त होने से पहले परीक्षा भवन से बाहर जाने की अनुमति नहीं होगी।
14. यदि कोई अभ्यर्थी परीक्षा में अनुचित साधनों का प्रयोग करता है, तो वह विश्वविद्यालय द्वारा निर्धारित दंड का/की भागी होगा/होगी।