

(DO NOT OPEN THIS QUESTION BOOKLET BEFORE TIME OR UNTIL YOU ARE ASKED TO DO SO)

A

M.Phil./Ph.D./URS-EE-2019
SUBJECT : Environmental Studies

SET-Y

Sr. No. 10025

Time : 1¼ Hours

Max. Marks : 100

Total Questions : 100

Roll No. (in figures) _____ (in words) _____

Name _____ Father's Name _____

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(Signature of the Candidate)

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MPH/PHD/URS-EE-2019/(Environmental Studies)(SET-Y)/(A)

SEAL

1. Which of the following is the first National Park of India ?
(1) Periyar (2) Raja ji
(3) Jim Corbett (4) Bandipur
2. Which of the following countries has the highest biodiversity ?
(1) India (2) Brazil
(3) Russia (4) South Africa
3. Which of the following features is not related to the Biodiversity hot spots ?
(1) Large number of species (2) Abundance of endemic species
(3) Large number of exotic species (4) Destruction of habitat
4. Which of the company companies started drive to convert plastic into bitumen ?
(1) Indian oil (2) Bharat Petroleum
(3) Assam oils (4) Hindustan Petroleum
5. The concept of Biodiversity 'hotspots' was given by which one of the following Environmentalists ?
(1) Gaylord Nelson (2) Norman Myers
(3) John Muir (4) Julia "Butterfly" Hill
6. The term 'Albedo' implies to which of the following ?
(1) Capacity to absorb heat
(2) Capacity to modify the path of polar-beam
(3) Proportion of light reflected by surface
(4) Amount of heat transferred to air by Earth's surface
7. Normal lapse rate in the atmosphere is ?
(1) 4°C/Km (2) 2°C/Km
(3) 6.5°C/Km (4) 7°C/Km
8. 2 ppm of CO at 25°C and 760 mm of Hg pressure is equivalent to :
(1) 1250 $\mu\text{g}/\text{m}^3$ (2) 1145 $\mu\text{g}/\text{m}^3$
(3) 2500 $\mu\text{g}/\text{m}^3$ (4) 2290 $\mu\text{g}/\text{m}^3$
9. How many types of forests are found in India according to the Central Forestry Commission (CFC), ?
(1) 15 (2) 20
(3) 28 (4) 16

10. Which or the following pairs is correctly matched ?
- | | |
|------------------------|------------------|
| (1) Korba coal mine | – Odisha |
| (2) Khetri copper mine | – Rajasthan |
| (3) Kodarma mica mine | – Madhya Pradesh |
| (4) Kollur mine | – Tamil Nadu |
11. What is maximum limit of BOD of the effluent allowed for discharge for irrigation ?
- | | |
|--------------|--------------|
| (1) 30 mg/L | (2) 100 mg/L |
| (3) 300 mg/L | (4) 60 mg/L |
12. Under Montreal Protocol, developing countries are required to phase out the HCFCs by which of the following year ?
- | | |
|----------|----------|
| (1) 2025 | (2) 2010 |
| (3) 2020 | (4) 2015 |
13. NO_x consists of :
- | | |
|---|---|
| (1) NO + NO ₂ | (2) NO + NO ₂ + N ₂ O ₅ |
| (3) NO + NO ₂ + N ₂ O | (4) NO + NO ₂ + N ₂ O + N ₂ O ₅ |
14. Match the following :
- | List-I | List-II |
|--------------|---------------------|
| i. PAN | 1. Minamata |
| ii. Arsenic | 2. Renal disorder |
| iii. Mercury | 3. Hypoxemia |
| iv. Lead | 4. Digestive system |
- Codes :**
- | | i | ii | iii | iv |
|-----|---|----|-----|----|
| (1) | 1 | 2 | 4 | 3 |
| (2) | 1 | 4 | 3 | 2 |
| (3) | 3 | 4 | 1 | 2 |
| (4) | 3 | 1 | 2 | 4 |
15. Three constituents that contribute towards ozone depletion in stratosphere are ?
- | | |
|--------------------------------------|-------------------------------------|
| (1) CFC-12, CFC-11, N ₂ O | (2) CFC-16, CFC-11, NO ₂ |
| (3) CFC-12, CFC-11, O ₂ | (4) CFC-13, CFC-11, H ₂ |

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16. Which of the following is responsible for 'Knock knee syndrome' ?
 (1) Fluoride (2) Arsenic
 (3) Lead (4) Selenium
17. The least degradable pesticide are :
 (1) Organo chloro compounds (2) Organo phosphorus compounds
 (3) Organo carbamates (4) All of the above
18. The frequencies of Mobile phone are in the range of :
 (1) 1 kHz-100 kHz (2) 1 kHz-100 MHz
 (3) 100 MHz-700 MHz (4) 800 MHz-2200 MHz
19. Carbonate alkalinity is also known as :
 (1) Pure alkalinity
 (2) Natural alkalinity
 (3) Phenolphthalein alkalinity
 (4) None of the above

20. Match the following :

List-I	List-II
i. Litmus	1. 4.4-6.3
ii. Phenolphthalein	2. 5.0-8.0
iii. Methyl red	3. 8.3-10.0
iv. Methyl orange	4. 2.5-4.4

Codes :

	i	ii	iii	iv
(1)	4	1	3	2
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21. Trace metals are determined by :
 (1) Flame photometry
 (2) HPLC
 (3) Atomic absorption spectrophotometry
 (4) None of the above

22. Physiogamy is the study of :
- (1) Seasonal change in the vegetation
 - (2) General appearance of vegetation
 - (3) Effect of light on flowering of plants
 - (4) Distribution of plants in relation to climate
23. The abrupt speciation sometimes after long period of stability is also called as ?
- (1) Macroevolution
 - (2) Founder effect
 - (3) Crossing over
 - (4) Punctuated equilibrium
24. Which of the following statements is correct ?
- (1) There is very high mixing of gases between troposphere and stratosphere
 - (2) In thermosphere there is steady decrease in temperature with the increase in height
 - (3) Temperature decrease with increasing height in thermosphere
 - (4) The first layer of air mass above troposphere in stratosphere
25. In which year Project 'Tiger', a wildlife conservation project was initiated in India ?
- (1) 1942
 - (2) 1974
 - (3) 1972
 - (4) 1971
26. Red Data Book is published by :
- (1) IUCN
 - (2) BNHS
 - (3) WWF
 - (4) Green pea
27. Environmental assessment of development projects follow the following sequence :
- (1) EA-EMP-EIA
 - (2) EIA-EA-EMP
 - (3) EMP-EA-EIA
 - (4) EIA-EMP-EA
28. The antibacterial component present in wood smoke is :
- (1) Formaldehyde
 - (2) Cellulose
 - (3) Acetone
 - (4) Methane
29. Which of the following is non-symbiotic Biofertilizer ?
- (1) VAM
 - (2) Azotobacter
 - (3) Rhizobium
 - (4) Anabaena
30. From which part of plant 'Asafoetida or Heeng' is obtained ?
- (1) Dried fruits
 - (2) Root exudes
 - (3) Stem exude
 - (4) Dried seeds

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31. A 'Blind Valley' is associated with :
- | | |
|----------------------|------------------------|
| (1) Perennial stream | (2) No stream |
| (3) Graded stream | (4) Rejuvenated stream |
32. Eco-labelling is governed by :
- | | |
|---------------|---------------|
| (1) ISO-14001 | (2) ISO-14020 |
| (3) ISO-14010 | (4) ISO-14040 |
33. Which of the following is not correctly matched ?
- | | |
|---------------------------|-------------------|
| (1) Hurricanes | - Strong cyclones |
| (2) Typhoons | - Weak cyclones |
| (3) Tropical disturbances | - Weak cyclones |
| (4) Tropical depression | - Weak cyclones |
34. Copenhagen conference on climate changes was held as a sequel to :
- | | |
|-----------------------|-----------------------|
| (1) Montreal Protocol | (2) Ramsar Convention |
| (3) Basel Convention | (4) Kyoto Protocol |
35. Which one of the following is not GIS software ?
- | | |
|--------------|-------------------|
| (1) AIRCVIEW | (2) ORISIS |
| (3) ILWIS | (4) IMAGE ANALYST |
36. Which one of the following orbits is not used for launching a remote sensing satellite ?
- (1) Low Earth Orbit (LEO)
 - (2) Medium Earth Orbit (MEO)
 - (3) Supra Earth Orbit (SEO)
 - (4) High Earth Orbit (HEO)
37. Photovoltaic cell (Solar cell) works on the principle of :
- | | |
|--------------------------|--------------------|
| (1) Rama effect | (2) Zeeman effect |
| (3) Photoelectric effect | (4) Faraday effect |
38. Microbial fuel cells are considered a source of sustainable energy because :
- (1) They use living organisms as catalysts to generate electricity
 - (2) They use variety of inorganic materials as substrate
 - (3) Both (1) and (2)
 - (4) None of the above

39. Assertion (A) Ultraviolet-B range is absorbed by the atmosphere along with UV -C
Reason (R) It is responsible for photochemical reaction leading to production of ozone layer :
- (1) A and R are true, and R is correct explanation of A
(2) A and R are true, and R is not correct explanation of A
(3) A is false, but R is true
(4) A is true, but R is false
40. What percentage of energy coming from sun is re-radiated back towards space ?
- (1) 15% (2) 30%
(3) 25% (4) 50%
41. Which of the following is NOT an indoor fungus ?
- (1) Penicillium (2) Aspergillus
(3) Cladosporium (4) Stachybotrys
42. The correct size of bio-aerosol particles released during talking is :
- (1) 1 micron (2) 10 micron
(3) 100 micron (4) 1000 micron
43. Which method is used for the measurement of NO_2 in environment ?
- (1) Fluorescence (2) Chemiluminescence
(3) Photometry (4) All of the above
44. The Air Quality Index (AQI) of unhealthy air is :
- (1) 51-100 (2) 101-150
(3) 151-200 (4) 201-250
45. Habitat of microorganism on floating material in water is called as :
- (1) Epibiotic (2) Sestonic
(3) Neustonic (4) None of the above
46. Which of the following is NOT a conventional method of water treatment ?
- (1) Coagulation (2) Disinfection
(3) Chlorination (4) Flocculation
47. The method used for detection of microorganisms in polluted water is :
- (1) FISH (2) RT-PCR
(3) Both (1) & (2) (4) None of these

48. Which of the following bacteria converts nitrates into nitrogen ?
(1) *Desulfovibrio* (2) *Pseudomonas*
(3) *Nitrosomonas* (4) *Nitrobacter*
49. The organisms responsible for "Brain eating disease" are ?
(1) Protozoa (2) Bacteria
(3) Viruses (4) Fungi
50. The term SCP was given by which of the following ?
(1) Gregor Mendel (2) Louis Pasteur
(3) Professor Scrimshaw (4) Ian Wilmot
51. White coloured bags in the hospitals are used for which of the following ?
(1) Paper (2) Waste tubing
(3) Spoiled bandages (4) Sharp objects
52. Which of the following permits solid matter to pass out with the liquid sewage ?
(1) Reciprocating pump (2) Pneumatic pump
(3) Centrifugal pump (4) None of these
53. What will you recommend for treating the sewage of a large city ?
(1) A sedimentation tank and an activated sludge treatment plant.
(2) A plant consisting of Imhoff tanks with low rate trickling filters
(3) Sedimentation tanks with high rate trickling filters
(4) None of these
54. What is the permissible sound level in commercial areas ?
(1) 75 dB (2) 70 dB
(3) 40 dB (4) 45 dB
55. Identify the correct order of gases in decreasing order of their contribution to global warming :
(1) $\text{CO}_2 > \text{CFCs} > \text{CH}_4 > \text{N}_2\text{O}$ (2) $\text{CO}_2 > \text{CH}_4 > \text{N}_2\text{O} > \text{CFCs}$
(3) $\text{CO}_2 > \text{CH}_4 > \text{CFCs} > \text{N}_2\text{O}$ (4) $\text{CO}_2 > \text{N}_2\text{O} > \text{CH}_4 > \text{CFCs}$
56. Temporary hardness is caused due to :
(1) Magnesium sulphate (2) Calcium sulphate
(3) Magnesium carbonate (4) Magnesium chloride

57. PSI standards for :
 (1) Pollution Survey of India
 (2) Pollutants Standard Information
 (3) Pollution Standard Index
 (4) All of above
58. The major contributor of carbon monoxide in air is :
 (1) Motor vehicle
 (2) Industrial processes
 (3) Stationary fuel combustion
 (4) None of the above
59. Fugitive emissions are the result of ?
 (1) Street dust
 (2) Construction activities
 (3) Agriculture activities
 (4) All of the above
60. The automobile catalytic converters control emission of :
 (1) Carbon dioxide and hydrogen
 (2) Carbon monoxide and hydrogen
 (3) Carbon monoxide and carbon dioxide
 (4) Carbon monoxide and nitrogen dioxide
61. Which of the following is used as antiknock compound in gasoline ?
 (1) Tetramethyl lead
 (2) Tetraethyl lead
 (3) Trimethyl lead
 (4) Triethyl lead
62. Genetically modified bacteria have been used for the following purpose EXCEPT :
 (1) To produce bacteria that can clean up toxic wastes such as oil spills
 (2) To produce enzymes used for industrial purpose
 (3) To produce human hormones including insulin and erythroprotein
 (4) To produce antibiotics that can be used to treat bacterial infections
63. The bacterium called superbug which is used to clean up the oil spill is :
 (1) Clostridium perfringens
 (2) Bacillus subtilis
 (3) Pseudomonas putida
 (4) None of these
64. Microorganisms remove metals by which of the following methods ?
 (1) Adsorption and complexation
 (2) Adsorption and precipitation
 (3) Adsorption and volatilization
 (4) All of these
65. What is the full form of OEPM ?
 (1) Operation Environmental Management plan
 (2) Operation Environment Member Policy
 (3) Operative Environment Management Plan
 (4) None of the above

66. Identify the correct sequence of stages of obtaining environment clearance for new projects :
- (1) Appraisal, Screening, Scoping, Public Consultation
 - (2) Screening, Public Consultation, Scoping, Appraisal
 - (3) Screening, Appraisal, Scoping, Public Consultation
 - (4) Screening, Scoping, Public Consultation, Appraisal
67. Which of the following is not a result of industrialization ?
- (1) Lead
 - (2) Arsenic
 - (3) Sodium
 - (4) Cadmium
68. The major cause of yellowing of Taj Mahal is ?
- (1) SO_3
 - (2) SO_2
 - (3) H_2SO_4
 - (4) All of the above
69. What causes Anti-Green House Effect and maintenance of heat balance ?
- (1) Fog
 - (2) Suspended particulate matter
 - (3) Heavy rainfall
 - (4) Clouds
70. How is photochemical smog formed in the atmosphere ?
- (1) when UV from sun reacts with nitrogen oxides
 - (2) when UV from sun reacts with carbon oxides
 - (3) when UV from sun reacts with sulphur oxides
 - (4) All of the above
71. What are the effects of El-nino phenomenon ?
- (1) Global warming
 - (2) Floods
 - (3) Droughts
 - (4) All of the above
72. When was National Council of Environmental Planning and Co-ordination set up ?
- (1) 1972
 - (2) 1975
 - (3) 1976
 - (4) 1978
73. Dunkel Draft was rejected since it was related to
- (1) Right to patent plant varieties
 - (2) Right to patent new drugs
 - (3) Right to patent herbal drugs
 - (4) None of the above
74. What is Pyrophyllite clay ?
- (1) Single layered clay
 - (2) Double layered clay
 - (3) Triple layered clay
 - (4) None of the above

75. Blue baby syndrome like diseases in children is caused by
- (1) Excess of Potassium (2) Excess of Nitrogen
(3) Excess of Phosphorus (4) None of the above
76. Which organism helps in symbiotic nitrogen fixation ?
- (1) Azotobacter (2) Clostridium
(3) Rhizobium (4) All of the above
77. When did Motor Vehicles Act come into force ?
- (1) 1987 (2) 1988
(3) 1989 (4) 1986
78. Eutrophication causes ?
- (1) Production of excessive organic matter
(2) Killing of fish
(3) Killing of plants
(4) None of the above
79. Global Agreement in specific control strategies to reduce the release of Ozone depleting substances, was adopted by :
- (1) Rio de Janeiro Conference (2) The Vienna Convention
(3) The Montreal Protocol (4) The Koyoto Protocol
80. Increase in the concentration of pollutants in higher trophic levels is known as ?
- (1) Biomagnification (2) Biodegradation
(3) Recycling (4) Eutrophication
81. Method employed to reduce total dissolved solids (TDS) of water :
- (1) Reverse osmosis (2) Ion exchange
(3) Distillation (4) All of the above
82. Long term exposure to lower doses of chemicals is also known as ?
- (1) High toxicity (2) Acute toxicity
(3) Chronic Toxicity (4) Moderate toxicity
83. Which one of the following is the local name of shifting cultivation in Assam in India ?
- (1) Lading (2) Jhum
(3) Chena (4) Podu

84. What is Ramsar Convention about ?
(1) Conservation of forests (2) Conservation of Wetlands
(3) Conservation of grasslands (4) Conservation of animals
85. Who used the term acid rain for the first time ?
(1) Schneider (2) Robert A Smith
(3) Sydney Chapman (4) Sherwood Rowland
86. Where is Silent Valley National Park located ?
(1) Orissa (2) Kerala
(3) Haryana (4) Bihar
87. Radioactive waste can be managed in which of the following ways ?
(1) Open dumping (2) Composting
(3) Incineration (4) Dumping in sealed container
88. Amongst the animal groups given below, which has highest (%) of endangered species ?
(1) Insects (2) Mammals
(3) Amphibians (4) Reptiles
89. Which of the following forests is known as the "lungs of the planet earth" ?
(1) Taiga forest (2) Tundra forest
(3) Amazon Rain forest (4) Rain forests of North East India
90. Biodiversity act of India was passed in ?
(1) 1992 (2) 1995
(3) 2000 (4) 2002
91. The Chipko movement started from :
(1) Reni in Garhwal (2) Arborio forest
(3) Khejrli village (4) None of these
92. Which of the following ecosystems is most productive in terms of net primary production ?
(1) Deserts (2) Oceans
(3) Tropical rain forests (4) Estuaries

93. Which of the following is an ecosystem service provided by a natural ecosystem ?
(1) Cycling of nutrients (2) Prevention of soil erosion
(3) Pollutant absorption (4) All of the above
94. Who among the following is known as 'Green Judge' of India ?
(1) Justice J.S. Sharma (2) Justice Anil R. Dave
(3) Justice Kuldeep Singh (4) Justice S.H. Kapadia
95. When is World Ecology Day celebrated ?
(1) 1 November (2) 2 November
(3) 3 November (4) 4 November
96. In which of the following stages maximum bacterial growth is attained ?
(1) Lag phase (2) Stationary phase
(3) Decline phase (4) Log phase
97. What is the chemical formula for Freon-12 ?
(1) CF_2Cl_2 (2) CF_2Cl
(3) $CFCI$ (4) CCl_2
98. Dobson Unit (DU) is used to measure the Ozone column thickness. 1 DU at standard Temperature and Pressure is equal to Ozone column thickness of :
(1) 0.1 mm (2) 0.001 mm
(3) 1.0 mm (4) 0.01 mm
99. Which of the renewable sources of energy have been identified as a priority for exploitation, under climate change action plan of Government of India ?
(1) Wind energy (2) Geothermal energy
(3) Solar energy (4) Tidal energy
100. When did National Green Tribunal come into existence ?
(1) 2000 (2) 2006
(3) 2009 (4) 2010

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 (1) NO + NO₂ (2) NO + NO₂ + N₂O₅
 (3) NO + NO₂ + N₂O (4) NO + NO₂ + N₂O + N₂O₅
4. Match the following :

List-I**List-II**

- | | |
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18. Dobson Unit (DU) is used to measure the Ozone column thickness. 1 DU at standard Temperature and Pressure is equal to Ozone column thickness of :
(1) 0.1 mm (2) 0.001 mm
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(1) Wind energy (2) Geothermal energy
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20. When did National Green Tribunal come into existence ?
(1) 2000 (2) 2006
(3) 2009 (4) 2010
21. What are the effects of El-nino phenomenon ?
(1) Global warming (2) Floods
(3) Droughts (4) All of the above
22. When was National Council of Environmental Planning and Co-ordination set up ?
(1) 1972 (2) 1975
(3) 1976 (4) 1978
23. Dunkel Draft was rejected since it was related to
(1) Right to patent plant varieties (2) Right to patent new drugs
(3) Right to patent herbal drugs (4) None of the above
24. What is Pyrophyllite clay ?
(1) Single layered clay (2) Double layered clay
(3) Triple layered clay (4) None of the above

25. Blue baby syndrome like diseases in children is caused by
- (1) Excess of Potassium (2) Excess of Nitrogen
(3) Excess of Phosphorus (4) None of the above
26. Which organism helps in symbiotic nitrogen fixation ?
- (1) Azotobacter (2) Clostridium
(3) Rhizobium (4) All of the above
27. When did Motor Vehicles Act come into force ?
- (1) 1987 (2) 1988
(3) 1989 (4) 1986
28. Eutrophication causes ?
- (1) Production of excessive organic matter
(2) Killing of fish
(3) Killing of plants
(4) None of the above
29. Global Agreement in specific control strategies to reduce the release of Ozone depleting substances, was adopted by :
- (1) Rio de Janeiro Conference (2) The Vienna Convention
(3) The Montreal Protocol (4) The Koyoto Protocol
30. Increase in the concentration of pollutants in higher trophic levels is known as ?
- (1) Biomagnification (2) Biodegradation
(3) Recycling (4) Eutrophication
31. White coloured bags in the hospitals are used for which of the following ?
- (1) Paper (2) Waste tubing
(3) Spoiled bandages (4) Sharp objects
32. Which of the following permits solid matter to pass out with the liquid sewage ?
- (1) Reciprocating pump (2) Pneumatic pump
(3) Centrifugal pump (4) None of these

33. What will you recommend for treating the sewage of a large city ?
(1) A sedimentation tank and an activated sludge treatment plant.
(2) A plant consisting of Imhoff tanks with low rate trickling filters
(3) Sedimentation tanks with high rate trickling filters
(4) None of these
34. What is the permissible sound level in commercial areas ?
(1) 75 dB (2) 70 dB
(3) 40 dB (4) 45 dB
35. Identify the correct order of gases in decreasing order of their contribution to global warming :
(1) $\text{CO}_2 > \text{CFCs} > \text{CH}_4 > \text{N}_2\text{O}$ (2) $\text{CO}_2 > \text{CH}_4 > \text{N}_2\text{O} > \text{CFCs}$
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36. Temporary hardness is caused due to :
(1) Magnesium sulphate (2) Calcium sulphate
(3) Magnesium carbonate (4) Magnesium chloride
37. PSI standards for :
(1) Pollution Survey of India (2) Pollutants Standard Information
(3) Pollution Standard Index (4) All of above
38. The major contributor of carbon monoxide in air is :
(1) Motor vehicle (2) Industrial processes
(3) Stationary fuel combustion (4) None of the above
39. Fugitive emissions are the result of ?
(1) Street dust (2) Construction activities
(3) Agriculture activities (4) All of the above
40. The automobile catalytic converters control emission of :
(1) Carbon dioxide and hydrogen
(2) Carbon monoxide and hydrogen
(3) Carbon monoxide and carbon dioxide
(4) Carbon monoxide and nitrogen dioxide

41. A 'Blind Valley' is associated with :
- | | |
|----------------------|------------------------|
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- | | |
|--------------|-------------------|
| (1) AIRCVIEW | (2) ORISIS |
| (3) ILWIS | (4) IMAGE ANALYST |
46. Which one of the following orbits is not used for launching a remote sensing satellite ?
- (1) Low Earth Orbit (LEO)
 - (2) Medium Earth Orbit (MEO)
 - (3) Supra Earth Orbit (SEO)
 - (4) High Earth Orbit (HEO)
47. Photovoltaic cell (Solar cell) works on the principle of :
- | | |
|--------------------------|--------------------|
| (1) Rama effect | (2) Zeeman effect |
| (3) Photoelectric effect | (4) Faraday effect |
48. Microbial fuel cells are considered a source of sustainable energy because :
- (1) They use living organisms as catalysts to generate electricity
 - (2) They use variety of inorganic materials as substrate
 - (3) Both (1) and (2)
 - (4) None of the above

49. Assertion (A) Ultraviolet-B range is absorbed by the atmosphere along with UV -C
Reason (R) It is responsible for photochemical reaction leading to production of ozone layer :
- (1) A and R are true, and R is correct explanation of A
 - (2) A and R are true, and R is not correct explanation of A
 - (3) A is false, but R is true
 - (4) A is true, but R is false
50. What percentage of energy coming from sun is re-radiated back towards space ?
- (1) 15%
 - (2) 30%
 - (3) 25%
 - (4) 50%
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 - (4) None of the above
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 - (2) Brazil
 - (3) Russia
 - (4) South Africa

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(3) Large number of exotic species (4) Destruction of habitat
84. Which of the company companies started drive to convert plastic into bitumen ?
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88. 2 ppm of CO at 25°C and 760 mm of Hg pressure is equivalent to :
(1) $1250 \mu\text{g}/\text{m}^3$ (2) $1145 \mu\text{g}/\text{m}^3$
(3) $2500 \mu\text{g}/\text{m}^3$ (4) $2290 \mu\text{g}/\text{m}^3$
89. How many types of forests are found in India according to the Central Forestry Commission (CFC), ?
(1) 15 (2) 20
(3) 28 (4) 16
90. Which or the following pairs is correctly matched ?
(1) Korba coal mine - Odisha
(2) Khetri copper mine - Rajasthan
(3) Kodarma mica mine - Madhya Pradesh
(4) Kollur mine - Tamil Nadu

91. Method employed to reduce total dissolved solids (TDS) of water :
- (1) Reverse osmosis (2) Ion exchange
(3) Distillation (4) All of the above
92. Long term exposure to lower doses of chemicals is also known as ?
- (1) High toxicity (2) Acute toxicity
(3) Chronic Toxicity (4) Moderate toxicity
93. Which one of the following is the local name of shifting cultivation in Assam in India ?
- (1) Lading (2) Jhum
(3) Chena (4) Podu
94. What is Ramsar Convention about ?
- (1) Conservation of forests (2) Conservation of Wetlands
(3) Conservation of grasslands (4) Conservation of animals
95. Who used the term acid rain for the first time ?
- (1) Schneider (2) Robert A Smith
(3) Sydney Chapman (4) Sherwood Rowland
96. Where is Silent Valley National Park located ?
- (1) Orissa (2) Kerala
(3) Haryana (4) Bihar
97. Radioactive waste can be managed in which of the following ways ?
- (1) Open dumping (2) Composting
(3) Incineration (4) Dumping in sealed container
98. Amongst the animal groups given below, which has highest (%) of endangered species ?
- (1) Insects (2) Mammals
(3) Amphibians (4) Reptiles
99. Which of the following forests is known as the "lungs of the planet earth" ?
- (1) Taiga forest (2) Tundra forest
(3) Amazon Rain forest (4) Rain forests of North East India
100. Biodiversity act of India was passed in ?
- (1) 1992 (2) 1995
(3) 2000 (4) 2002

(DO NOT OPEN THIS QUESTION BOOKLET BEFORE TIME OR UNTIL YOU ARE ASKED TO DO SO)

C

SET-Y

M.Phil./Ph.D./URS-EE-2019

SUBJECT : Environmental Studies

Sr. No.10027.....

Time : 1¼ Hours

Max. Marks : 100

Total Questions : 100

Roll No. (in figures) _____ (in words) _____

Name _____ Father's Name _____

Mother's Name _____ Date of Examination _____

(Signature of the Candidate)

(Signature of the Invigilator)

CANDIDATES MUST READ THE FOLLOWING INFORMATION/INSTRUCTIONS BEFORE STARTING THE QUESTION PAPER.

1. **All questions are compulsory.**
2. The candidates **must return** the question booklet as well as OMR Answer-Sheet to the Invigilator concerned before leaving the Examination Hall, failing which a case of use of unfair-means / mis-behaviour will be registered against him / her, in addition to lodging of an FIR with the police. Further the answer-sheet of such a candidate will not be evaluated.
3. Keeping in view the transparency of the examination system, carbonless OMR Sheet is provided to the candidate so that a copy of OMR Sheet may be kept by the candidate.
4. Question Booklet along with answer key of all the A, B, C & D code will be got uploaded on the University website after the conduct of Entrance Examination. In case there is any discrepancy in the Question Booklet/Answer Key, the same may be brought to the notice of the Controller of Examination in writing/through E.Mail within 24 hours of uploading the same on the University Website. Thereafter, no complaint in any case, will be considered.
5. The candidate **must not** do any rough work or writing in the OMR Answer-Sheet. Rough work, if any, may be done in the question booklet itself. Answers **must not** be ticked in the question booklet.
6. **There will be no negative marking. Each correct answer will be awarded one full mark. Cutting, erasing, overwriting and more than one answer in OMR Answer-Sheet will be treated as incorrect answer.**
7. Use only **Black** or **Blue Ball Point Pen** of good quality in the OMR Answer-Sheet.
8. **Before answering the questions, the candidates should ensure that they have been supplied correct and complete booklet. Complaints, if any, regarding misprinting etc. will not be entertained 30 minutes after starting of the examination.**

MPH/PHD/URS-EE-2019/(Environmental Studies)(SET-Y)/(C)

SEAL

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(3) Khejrli village (4) None of these
32. Which of the following ecosystems is most productive in terms of net primary production ?
- (1) Deserts (2) Oceans
(3) Tropical rain forests (4) Estuaries
33. Which of the following is an ecosystem service provided by a natural ecosystem ?
- (1) Cycling of nutrients (2) Prevention of soil erosion
(3) Pollutant absorption (4) All of the above
34. Who among the following is known as 'Green Judge' of India ?
- (1) Justice J.S. Sharma (2) Justice Anil R. Dave
(3) Justice Kuldeep Singh (4) Justice S.H. Kapadia
35. When is World Ecology Day celebrated ?
- (1) 1 November (2) 2 November
(3) 3 November (4) 4 November
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(3) 25% (4) 50%
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(3) Droughts (4) All of the above

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84. Match the following :
- | List-I | | List-II | |
|--------------|--|---------------------|--|
| i. PAN | | 1. Minamata | |
| ii. Arsenic | | 2. Renal disorder | |
| iii. Mercury | | 3. Hypoxemia | |
| iv. Lead | | 4. Digestive system | |
- Codes :**
- | | i | ii | iii | iv |
|-----|---|----|-----|----|
| (1) | 1 | 2 | 4 | 3 |
| (2) | 1 | 4 | 3 | 2 |
| (3) | 3 | 4 | 1 | 2 |
| (4) | 3 | 1 | 2 | 4 |
85. Three constituents that contribute towards ozone depletion in stratosphere are ?
 (1) CFC-12, CFC-11, N₂O (2) CFC-16, CFC-11, NO₂
 (3) CFC-12, CFC-11, O₂ (4) CFC-13, CFC-11, H₂
86. Which of the following is responsible for 'Knock knee syndrome' ?
 (1) Fluoride (2) Arsenic
 (3) Lead (4) Selenium
87. The least degradable pesticide are :
 (1) Organo chloro compounds (2) Organo phosphorus compounds
 (3) Organo carbamates (4) All of the above

88. The frequencies of Mobile phone are in the range of :

- (1) 1 kHz-100 kHz (2) 1 kHz-100 MHz
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89. Carbonate alkalinity is also known as :

- (1) Pure alkalinity
(2) Natural alkalinity
(3) Phenolphthalein alkalinity
(4) None of the above

90. Match the following :

List-I

- i. Litmus
ii. Phenolphthalein
iii. Methyl red
iv. Methyl orange

List-II

1. 4.4-6.3
2. 5.0-8.0
3. 8.3-10.0
4. 2.5-4.4

Codes :

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91. White coloured bags in the hospitals are used for which of the following ?

- (1) Paper (2) Waste tubing
(3) Spoiled bandages (4) Sharp objects

92. Which of the following permits solid matter to pass out with the liquid sewage ?

- (1) Reciprocating pump (2) Pneumatic pump
(3) Centrifugal pump (4) None of these

93. What will you recommend for treating the sewage of a large city ?
 (1) A sedimentation tank and an activated sludge treatment plant.
 (2) A plant consisting of Imhoff tanks with low rate trickling filters
 (3) Sedimentation tanks with high rate trickling filters
 (4) None of these
94. What is the permissible sound level in commercial areas ?
 (1) 75 dB (2) 70 dB
 (3) 40 dB (4) 45 dB
95. Identify the correct order of gases in decreasing order of their contribution to global warming :
 (1) $\text{CO}_2 > \text{CFCs} > \text{CH}_4 > \text{N}_2\text{O}$
 (2) $\text{CO}_2 > \text{CH}_4 > \text{N}_2\text{O} > \text{CFCs}$
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96. Temporary hardness is caused due to :
 (1) Magnesium sulphate (2) Calcium sulphate
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97. PSI standards for :
 (1) Pollution Survey of India (2) Pollutants Standard Information
 (3) Pollution Standard Index (4) All of above
98. The major contributor of carbon monoxide in air is :
 (1) Motor vehicle (2) Industrial processes
 (3) Stationary fuel combustion (4) None of the above
99. Fugitive emissions are the result of ?
 (1) Street dust (2) Construction activities
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100. The automobile catalytic converters control emission of :
 (1) Carbon dioxide and hydrogen
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(DO NOT OPEN THIS QUESTION BOOKLET BEFORE TIME OR UNTIL YOU ARE ASKED TO DO SO)

D

M.Phil./Ph.D./URS-EE-2019

SET-Y

SUBJECT : Environmental Studies

10004

Sr. No.

Time : 1¼ Hours

Max. Marks : 100

Total Questions : 100

Roll No. (in figures) _____ (in words) _____

Name _____ Father's Name _____

Mother's Name _____ Date of Examination _____

(Signature of the Candidate)

(Signature of the Invigilator)

CANDIDATES MUST READ THE FOLLOWING INFORMATION/INSTRUCTIONS BEFORE STARTING THE QUESTION PAPER.

1. **All questions are compulsory.**
2. The candidates **must return** the question booklet as well as OMR Answer-Sheet to the Invigilator concerned before leaving the Examination Hall, failing which a case of use of unfair-means / mis-behaviour will be registered against him / her, in addition to lodging of an FIR with the police. Further the answer-sheet of such a candidate will not be evaluated.
3. Keeping in view the transparency of the examination system, carbonless OMR Sheet is provided to the candidate so that a copy of OMR Sheet may be kept by the candidate.
4. Question Booklet along with answer key of all the A, B, C & D code will be got uploaded on the University website after the conduct of Entrance Examination. In case there is any discrepancy in the Question Booklet/Answer Key, the same may be brought to the notice of the Controller of Examination in writing/through E.Mail within 24 hours of uploading the same on the University Website. Thereafter, no complaint in any case, will be considered.
5. The candidate **must not** do any rough work or writing in the OMR Answer-Sheet. Rough work, if any, may be done in the question booklet itself. Answers **must not** be ticked in the question booklet.
6. **There will be no negative marking. Each correct answer will be awarded one full mark. Cutting, erasing, overwriting and more than one answer in OMR Answer-Sheet will be treated as incorrect answer.**
7. Use only **Black or Blue Ball Point Pen** of good quality in the OMR Answer-Sheet.
8. **Before answering the questions, the candidates should ensure that they have been supplied correct and complete booklet. Complaints, if any, regarding misprinting etc. will not be entertained 30 minutes after starting of the examination.**

MPH/PHD/URS-EE-2019/(Environmental Studies)(SET-Y)/(D)

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D

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(1) Perennial stream (2) No stream
(3) Graded stream (4) Rejuvenated stream
22. Eco-labelling is governed by :
(1) ISO-14001 (2) ISO-14020
(3) ISO-14010 (4) ISO-14040
23. Which of the following is not correctly matched ?
(1) Hurricanes - Strong cyclones
(2) Typhoons - Weak cyclones
(3) Tropical disturbances - Weak cyclones
(4) Tropical depression - Weak cyclones
24. Copenhagen conference on climate changes was held as a sequel to :
(1) Montreal Protocol (2) Ramsar Convention
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41. The Chipko movement started from :

- (1) Reni in Garhwal
- (2) Arborio forest
- (3) Khejrli village
- (4) None of these

42. Which of the following ecosystems is most productive in terms of net primary production ?

- (1) Deserts
- (2) Oceans
- (3) Tropical rain forests
- (4) Estuaries

43. Which of the following is an ecosystem service provided by a natural ecosystem ?

- (1) Cycling of nutrients
- (2) Prevention of soil erosion
- (3) Pollutant absorption
- (4) All of the above

44. Who among the following is known as 'Green Judge' of India ?

- (1) Justice J.S. Sharma
- (2) Justice Anil R. Dave
- (3) Justice Kuldeep Singh
- (4) Justice S.H. Kapadia

45. When is World Ecology Day celebrated ?

- (1) 1 November
- (2) 2 November
- (3) 3 November
- (4) 4 November

46. In which of the following stages maximum bacterial growth is attained ?

- (1) Lag phase
- (2) Stationary phase
- (3) Decline phase
- (4) Log phase

47. What is the chemical formula for Freon-12 ?
(1) CF_2Cl_2 (2) CF_2Cl
(3) CFCl (4) CCl_2
48. Dobson Unit (DU) is used to measure the Ozone column thickness. 1 DU at standard Temperature and Pressure is equal to Ozone column thickness of :
(1) 0.1 mm (2) 0.001 mm
(3) 1.0 mm (4) 0.01 mm
49. Which of the renewable sources of energy have been identified as a priority for exploitation, under climate change action plan of Government of India ?
(1) Wind energy (2) Geothermal energy
(3) Solar energy (4) Tidal energy
50. When did National Green Tribunal come into existence ?
(1) 2000 (2) 2006
(3) 2009 (4) 2010
51. Which of the following is used as antiknock compound in gasoline ?
(1) Tetramethyl lead (2) Tetraethyl lead
(3) Trimethyl lead (4) Triethyl lead
52. Genetically modified bacteria have been used for the following purpose EXCEPT :
(1) To produce bacteria that can clean up toxic wastes such as oil spills
(2) To produce enzymes used for industrial purpose
(3) To produce human hormones including insulin and erythropoietin
(4) To produce antibiotics that can be used to treat bacterial infections
53. The bacterium called superbug which is used to clean up the oil spill is :
(1) *Clostridium perfringens* (2) *Bacillus subtilis*
(3) *Pseudomonas putida* (4) None of these
54. Microorganisms remove metals by which of the following methods ?
(1) Adsorption and complexation (2) Adsorption and precipitation
(3) Adsorption and volatilization (4) All of these
55. What is the full form of OEPM ?
(1) Operation Environmental Management plan
(2) Operation Environment Member Policy
(3) Operative Environment Management Plan
(4) None of the above

56. Identify the correct sequence of stages of obtaining environment clearance for new projects :
- (1) Appraisal, Screening, Scoping, Public Consultation
 - (2) Screening, Public Consultation, Scoping, Appraisal
 - (3) Screening, Appraisal, Scoping, Public Consultation
 - (4) Screening, Scoping, Public Consultation, Appraisal
57. Which of the following is not a result of industrialization ?
- (1) Lead
 - (2) Arsenic
 - (3) Sodium
 - (4) Cadmium
58. The major cause of yellowing of Taj Mahal is ?
- (1) SO_3
 - (2) SO_2
 - (3) H_2SO_4
 - (4) All of the above
59. What causes Anti-Green House Effect and maintenance of heat balance ?
- (1) Fog
 - (2) Suspended particulate matter
 - (3) Heavy rainfall
 - (4) Clouds
60. How is photochemical smog formed in the atmosphere ?
- (1) when UV from sun reacts with nitrogen oxides
 - (2) when UV from sun reacts with carbon oxides
 - (3) when UV from sun reacts with sulphur oxides
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(3) 2000 (4) 2002
71. Which of the following is NOT an indoor fungus ?
(1) Penicillium (2) Aspergillus
(3) Cladosporium (4) Stachybotrys
72. The correct size of bio-aerosol particles released during talking is :
(1) 1 micron (2) 10 micron
(3) 100 micron (4) 1000 micron
73. Which method is used for the measurement of NO_2 in environment ?
(1) Fluorescence (2) Chemiluminescence
(3) Photometry (4) All of the above
74. The Air Quality Index (AQI) of unhealthy air is :
(1) 51-100 (2) 101-150
(3) 151-200 (4) 201-250

75. Habitat of microorganism on floating material in water is called as :
(1) Epibiotic (2) Sestonic
(3) Neustonic (4) None of the above
76. Which of the following is NOT a conventional method of water treatment ?
(1) Coagulation (2) Disinfection
(3) Chlorination (4) Flocculation
77. The method used for detection of microorganisms in polluted water is :
(1) FISH (2) RT-PCR
(3) Both (1) & (2) (4) None of these
78. Which of the following bacteria converts nitrates into nitrogen ?
(1) *Desulfovibrio* (2) *Pseudomonas*
(3) *Nitrosomonas* (4) *Nitrobactor*
79. The organisms responsible for "Brain eating disease" are ?
(1) Protozoa (2) Bacteria
(3) Viruses (4) Fungi
80. The term SCP was given by which of the following ?
(1) Gregor Mendel (2) Louis Pasteur
(3) Professor Scrimshaw (4) Ian Wilmot
81. Trace metals are determined by :
(1) Flame photometry
(2) HPLC
(3) Atomic absorption spectrophotometry
(4) None of the above
82. Physiogamy is the study of :
(1) Seasonal change in the vegetation
(2) General appearance of vegetation
(3) Effect of light on flowering of plants
(4) Distribution of plants in relation to climate
83. The abrupt speciation sometimes after long period of stability is also called as ?
(1) Macroevolution (2) Founder effect
(3) Crossing over (4) Punctuated equilibrium

84. Which of the following statements is correct ?
(1) There is very high mixing of gases between troposphere and stratosphere
(2) In thermosphere there is steady decrease in temperature with the increase in height
(3) Temperature decrease with increasing height in thermosphere
(4) The first layer of air mass above troposphere is stratosphere
85. In which year Project 'Tiger', a wildlife conservation project was initiated in India ?
(1) 1942 (2) 1974
(3) 1972 (4) 1971
86. Red Data Book is published by :
(1) IUCN (2) BNHS
(3) WWF (4) Green pea
87. Environmental assessment of development projects follow the following sequence :
(1) EA-EMP-EIA (2) EIA-EA-EMP
(3) EMP-EA-EIA (4) EIA-EMP-EA
88. The antibacterial component present in wood smoke is :
(1) Formaldehyde (2) Cellulose
(3) Acetone (4) Methane
89. Which of the following is non-symbiotic Biofertilizer ?
(1) VAM (2) Azotobacter
(3) Rhizobium (4) Anabaena
90. From which part of plant 'Asafoetida or Heeng' is obtained ?
(1) Dried fruits' (2) Root exudes
(3) Stem exude (4) Dried seeds
91. Which of the following is the first National Park of India ?
(1) Periyar (2) Raja ji
(3) Jim Corbett (4) Bandipur
92. Which of the following countries has the highest biodiversity ?
(1) India (2) Brazil
(3) Russia (4) South Africa

93. Which of the following features is not related to the Biodiversity hot spots ?
(1) Large number of species (2) Abundance of endemic species
(3) Large number of exotic species (4) Destruction of habitat
94. Which of the company companies started drive to convert plastic into bitumen ?
(1) Indian oil (2) Bharat Petroleum
(3) Assam oils (4) Hindustan Petroleum
95. The concept of Biodiversity 'hotspots' was given by which one of the following Environmentalists ?
(1) Gaylord Nelson (2) Norman Myers
(3) John Muir (4) Julia "Butterfly" Hill
96. The term 'Albedo' implies to which of the following ?
(1) Capacity to absorb heat
(2) Capacity to modify the path of polar-beam
(3) Proportion of light reflected by surface
(4) Amount of heat transferred to air by Earth's surface
97. Normal lapse rate in the atmosphere is ?
(1) 4°C/Km (2) 2°C/Km
(3) 6.5°C/Km (4) 7°C/Km
98. 2 ppm of CO at 25°C and 760 mm of Hg pressure is equivalent to :
(1) 1250 $\mu\text{g}/\text{m}^3$ (2) 1145 $\mu\text{g}/\text{m}^3$
(3) 2500 $\mu\text{g}/\text{m}^3$ (4) 2290 $\mu\text{g}/\text{m}^3$
99. How many types of forests are found in India according to the Central Forestry Commission (CFC), ?
(1) 15 (2) 20
(3) 28 (4) 16
100. Which or the following pairs is correctly matched ?
(1) Korba coal mine - Odisha
(2) Khetri copper mine - Rajasthan
(3) Kodarma mica mine - Madhya Pradesh
(4) Kollur mine - Tamil Nadu

SET-A

1	11	21	31	41	51	61	71	81	91
C	B	C	B	D	B	B	D	D	A
B	C	B	B	C	C	D	A	C	C
D	A	D	B	B	A	C	A	B	B
B	C	C	D	C	C	A	C	B	C
B	A	C	B	B	C	C	B	B	A
C	A	A	C	B	C	A	C	B	D
C	B	B	C	C	C	C	B	D	A
D	B	A	A	B	A	B	B	C	D
D	C	B	B	A	D	B	C	C	C
B	B	B	B	D	B	C	A	D	D

SET-B

B	A	D	B	B	C	D	B	C	D
C	C	A	C	B	B	C	D	B	C
A	B	A	A	B	D	B	C	D	B
C	C	C	C	D	C	C	A	B	B
A	A	B	C	B	C	B	C	B	B
A	D	C	C	C	A	B	A	C	B
B	A	B	C	C	B	C	C	C	D
B	D	B	A	A	A	B	B	D	C
C	C	C	D	B	B	A	B	D	C
B	D	A	B	B	B	D	C	B	D

SET-C

D	C	C	A	B	B	D	D	B	B
C	B	B	C	D	B	A	C	C	C
B	D	D	B	C	B	A	B	A	A
C	C	B	C	A	D	C	B	C	C
B	C	B	A	C	B	B	B	A	C
B	A	C	D	A	C	C	B	A	C
C	B	C	A	C	C	B	D	B	C
B	A	D	D	B	A	B	C	B	A
A	B	D	C	B	B	C	C	C	D
D	B	B	D	C	B	A	D	B	B

SET-D

D	B	B	B	A	B	D	D	C	C
A	C	B	C	C	D	C	C	B	B
A	A	B	A	B	C	B	B	D	D
C	C	D	C	C	A	B	C	C	B
B	C	B	A	A	C	B	B	C	B
C	C	C	A	D	A	B	B	A	C
B	C	C	B	A	C	D	C	B	C
B	A	A	B	D	B	C	B	A	D
C	D	B	C	C	B	C	A	B	D
A	B	B	B	D	C	D	D	B	B

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