Test Booklet Code & Serial No.
प्रश्नपत्रिका कोड व क्रमांक

B

Paper-II
ENVIRONMENTAL SCIENCE

Signature and Name of Invigilator

1. (Signature) .....

   (Name) .....

2. (Signature) .....

   (Name) .....

Seat No. | | | | | | | |

(In figures as in Admit Card)

Seat No. .....

(In words)

OMR Sheet No. | | | | | | | |

(To be filled by the Candidate)

MAR - 31223

Time Allowed : 2 Hours] **[Maximum Marks : 200**

Number of Pages in this Booklet : **20** Number of Questions in this Booklet : **100**

Instructions for the Candidates

1. Write your Seat No. and OMR Sheet No. in the space provided on the top of this page.
2. This paper consists of **100** objective type questions. Each question will carry *two* marks. *All* questions of Paper II will be compulsory.
3. At the commencement of examination, the question booklet will be given to the student. In the first 5 minutes, you are requested to open the booklet and compulsorily examine it as follows :
   (*i*) To have access to the Question Booklet, tear off the paper seal on the edge of this cover page. Do not accept a booklet without sticker-seal or open booklet.
   (*ii*) Tally the number of pages and number of questions in the booklet with the information printed on the cover page. Faulty booklets due to missing pages/questions or questions repeated or not in serial order or any other discrepancy should not be accepted and correct booklet should be obtained from the invigilator within the period of 5 minutes. Afterwards, neither the Question Booklet will be replaced nor any extra time will be given. The same may please be noted.
   (*iii*) After this verification is over, the OMR Sheet Number should be entered on this Test Booklet.
4. Each question has four alternative responses marked (A), (B), (C) and (D). You have to darken the circle as indicated below on the correct response against each item.
   Example : where (C) is the correct response.

   (A) (B) ● (D)

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

विद्यार्थ्यांसाठी महत्त्वाच्या सूचना

1. परीक्षार्थींनी आपला आसन क्रमांक या पृष्ठावरील वरच्या कोपऱ्यात लिहावा. तसेच आपणांस दिलेल्या उत्तरपत्रिकेचा क्रमांक त्याखाली लिहावा.
2. सदर प्रश्नपत्रिकेत 100 बहुपर्यायी प्रश्न आहेत. प्रत्येक प्रश्नास **दोन** गुण आहेत. या प्रश्नपत्रिकेतील **सर्व** प्रश्न सोडविणे अनिवार्य आहे.
3. परीक्षा सुरू झाल्यावर विद्यार्थ्याला प्रश्नपत्रिका दिली जाईल. सुरुवातीच्या 5 मिनिटांमध्ये आपण सदर प्रश्नपत्रिका उघडून खालील बाबी अवश्य तपासून पहाव्यात.
   (*i*) प्रश्नपत्रिका उघडण्यासाठी प्रश्नपत्रिकेवर लावलेले सील उघडावे. सील नसलेली किंवा सील उघडलेली प्रश्नपत्रिका स्वीकारू नये.
   (*ii*) पहिल्या पृष्ठावर नमूद केल्याप्रमाणे प्रश्नपत्रिकेची एकूण पृष्ठे तसेच प्रश्नपत्रिकेतील एकूण प्रश्नांची संख्या पडताळून पहावी. पृष्ठे कमी असलेली/कमी प्रश्न असलेली/प्रश्नांचा चुकीचा क्रम असलेली किंवा इतर त्रुटी असलेली सदोष प्रश्नपत्रिका सुरुवातीच्या 5 मिनिटातच पर्यवेक्षकाला परत देऊन दुसरी प्रश्नपत्रिका मागवून घ्यावी. त्यानंतर प्रश्नपत्रिका बदलून मिळणार नाही तसेच वेळही वाढवून मिळणार नाही याची कृपया विद्यार्थ्यांनी नोंद घ्यावी.
   (*iii*) वरीलप्रमाणे सर्व पडताळून पाहिल्यानंतरच प्रश्नपत्रिकेवर ओ.एम.आर. उत्तरपत्रिकेचा नंबर लिहावा.
4. प्रत्येक प्रश्नासाठी (A), (B), (C) आणि (D) अशी चार विकल्प उत्तरे दिली आहेत. त्यातील योग्य उत्तराचा रकाना खाली दर्शविल्याप्रमाणे ठळकपणे काळा/निळा करावा.
   उदा. : जर (C) हे योग्य उत्तर असेल तर.

   (A) (B) ● (D)

5. या प्रश्नपत्रिकेतील प्रश्नांची उत्तरे **ओ.एम.आर. उत्तरपत्रिकेतच दर्शवावीत.** इतर ठिकाणी लिहिलेली उत्तरे तपासली जाणार नाहीत.
6. आत दिलेल्या सूचना काळजीपूर्वक वाचाव्यात.
7. प्रश्नपत्रिकेच्या शेवटी जोडलेल्या कोऱ्या पानावरच कच्चे काम करावे.
8. जर आपण ओ.एम.आर. वर नमूद केलेल्या ठिकाणाव्यतिरिक्त इतर कोठेही नाव, आसन क्रमांक, फोन नंबर किंवा ओळख पटेल अशी कोणतीही खूण केलेली आढळून आल्यास अथवा असभ्य भाषेचा वापर किंवा इतर गैरमार्गाचा अवलंब केल्यास विद्यार्थ्याला परीक्षेस अपात्र ठरविण्यात येईल.
9. परीक्षा संपल्यानंतर विद्यार्थ्याने मूळ ओ.एम.आर. उत्तरपत्रिका पर्यवेक्षकांकडे परत करणे आवश्यक आहे. तथापि, प्रश्नपत्रिका व ओ.एम.आर. उत्तरपत्रिकेची द्वितीय प्रत आपल्याबरोबर नेण्यास विद्यार्थ्यांना परवानगी आहे.
10. फक्त निळ्या किंवा काळ्या बॉल पेनचाच वापर करावा.
11. कॅलक्युलेटर किंवा लॉग टेबल वापरण्यास परवानगी नाही.
12. चुकीच्या उत्तरासाठी गुण कपात केली जाणार नाही.

Environmental Science

Paper II

Time Allowed : 120 Minutes] **[Maximum Marks : 200**

Note : This Paper contains **Hundred (100)** multiple choice questions. Each question carrying **Two (2)** marks. Attempt *All* questions.

1. An aerosol having dry aerodynamic diameter of 3.8 µm falls in the :

   (A) Aitken mode

   (B) Nucleation mode

   (C) Coarse mode

   (D) All of the above

2. What is expanded form of CPCB ?

   (A) Central Pollution Control Board

   (B) Central Public Control Board

   (C) Central Pollution Control Bureau

   (D) Commission for Pollution Control Board

3. How many bromine atoms are there in 2.44 mol Br :

   (A) 14.69×10^{22} atoms

   (B) 146.9×10^{24} atoms

   (C) 14.69×10^{23} atoms

   (D) 1.46×10^{23} atoms

4. Which of the following is *not* a nuclear disaster ?

   (A) Chernobyl

   (B) Love Canal

   (C) Three Mile Island

   (D) Fukushima

5. The mass of 10 litres of oxygen which has density of 1.43 g/L, will be :

   (A) 10 g

   (B) 1.43 g

   (C) 14.3 g

   (D) 1 g

6. Number of unpaired electrons in Fe^{++} is :

   (A) 2

   (B) 3

   (C) 4

   (D) 5

7. The correct order of increasing half-life of radioactive isotopes of $_{93}Np^{239}$, $_{90}Th^{232}$, $_{88}Ra^{226}$ and $_{6}C^{14}$ is :

(A) $_{6}C^{14} < _{93}Np^{239} < _{88}Ra^{226} < _{90}Th^{232}$

(B) $_{90}Th^{232} < _{88}Ra^{226} < _{93}Np^{239} < _{6}C^{14}$

(C) $_{93}Np^{239} < _{88}Ra^{226} < _{6}C^{14} < _{90}Th^{232}$

(D) $_{88}Ra^{226} < _{90}Th^{232} < _{6}C^{14} < _{93}Np^{239}$

8. Feldspar is :

(A) $Al_2SiO_4(OH)_2$

(B) SiO_2

(C) $KAlSi_3O_8$

(D) Al_2O_3

9. Quarry is an :

(A) Open coal mine

(B) Underground coal mine

(C) Open pit for rock mining

(D) Explosive mine

10. Change of haematite to limonite $Fe_2O_3 \rightleftharpoons Fe_2O_3 . 3H_2O$ is an example of :

(A) Hydrolysis

(B) Hydration

(C) Carbonation

(D) Chelation

11. One ppm is equal to :

(A) 0.01%

(B) 0.1%

(C) 0.0001%

(D) 0.001%

12. One Tg is equal to :

(A) 10^6 g

(B) 10^9 g

(C) 10^{12} g

(D) 10^{15} g

13. Unit of turbidity of water is :

(A) NTU

(B) FTU

(C) JTU

(D) All of the above

14. Which is the most common in the sea water ?

(A) Calcium chloride

(B) Magnesium chloride

(C) Ammonium chloride

(D) Sodium chloride

15. If the wet weight of the waste was 102.2 kg and the dry weight is 81.4 kg, calculate the percent of moisture content of the waste :

(A) 5.1%

(B) 10.15%

(C) 20.35%

(D) 25.22%

16. What is the temperature required to have fusion reaction in the Sun ?

(A) 10^{10} °K

(B) 10^{8} °K

(C) 10^{6} °K

(D) 10^{4} °K

17. The solar radiation incident on a surface per unit time is termed as :

(A) Insolation

(B) Irradiance

(C) Radiation

(D) Conduction

18. Which one of the following is a lotic ecosystem ?

(A) Lake

(B) Pond

(C) Pool

(D) River

19. Excess level of nitrate in the drinking water causes ..... to human infants.

(A) Itai-Itai

(B) Blue baby syndrome

(C) Fluorosis

(D) Nerve damage

20. Which one of the following is observed when analysed organically polluted water ?

(A) low D.O. and low BOD

(B) high D.O. and high BOD

(C) low D.O. and high BOD

(D) both D.O. and BOD equal

21. Sludge from sewage treated plant is used to get methane using :

(A) Sludge digester

(B) Sludge vacuum filtration

(C) Sludge drying beds

(D) Sludge as compost

22. Intertidal zone is :

(A) A zone of deep water

(B) A zone of sediment

(C) A zone of open sea

(D) A zone between low and high tides

23. Role of detritus food chain in an ecosystem is :

(A) Grazing

(B) Transfer of food

(C) Recycling of resources

(D) Assimilation

24. Which air pollution control equipment works on the principle of centrifugal separation ?

(A) Electrostatic precipitation

(B) Cyclone

(C) Wet scrubber

(D) Bag filter

25. On 1 : 50,000 scale survey of India, toposheet, 2 cm corresponds to .....

(A) 1 km

(B) 10 km

(C) 20 km

(D) 5 km

26. An impermeable geologic formation that neither contains nor transmits water is called :

(A) Aquifer

(B) Aquiclude

(C) Aquifuge

(D) Aquitard

27. A water body with low concentration (1 to 30%) saturation of dissolved oxygen is called .....

(A) hypoxic

(B) hyper anoxic

(C) anoxic

(D) hyperoxic

28. ..... is one of the natural hazards that involves mass movement of soil and/or rock down the slope.

(A) Lanslide

(B) Subduction

(C) Obduction

(D) Snowfall

29. What is the standard limit of pH of treated effluent ?

(A) between 6.5 – 7.5

(B) between 5.5 – 9.0

(C) between 6.0 – 8.0

(D) between 6.5 – 8.5

30. Living vegetation appears ..... on false colour Infrared images.

(A) red

(B) black

(C) white

(D) blue

31. ..... streams are the streams that are neither controlled by dip nor by strike of rock formation but flows haphazardly.

(A) Insequent

(B) Resequent

(C) Obsequent

(D) Consequent

32. The spectral region of electromagnetic radiation that passes through the atmosphere without much attenuation is known as :

(A) ozone hole

(B) atmospheric window

(C) ozone window

(D) black hole

33. The first EIA notification was promulgated in India during :

(A) 1986

(B) 1994

(C) 2006

(D) 1973

34. Which committee reviews EIA & EMP reports in Ministry of Environment Forests and Climate Change ?

(A) Expert Appraisal Committee

(B) Expert Assessment Committee

(C) Project Evaluation Committee

(D) Peer and Core Committee

35. Which method for impact identification in EIA uses GIS ?

(A) Checklists

(B) Matrices

(C) Overlays

(D) Network

36. Which one of the following is *not* a part of the EIA scoping process ?

(A) Describe the project area and area of project influence

(B) Description of environmental impacts and creation of contingency plans

(C) Defining a set of criteria to assess the project

(D) Create a set of environmental and socio-economic areas that will be used in assessment

37. The provision to establish or recognize laboratories for analysis is mentioned in :

(A) The Water (Prevention and Control of Pollution) Act, 1974

(B) The Air (Prevention and Control of Pollution) Act, 1981

(C) The Environment (Protection) Act, 1986

(D) All of the above

38. Public Liability Insurance Act, 1991 provides relief for :

(A) Victims of natural disasters

(B) Victims of terrorist attacks

(C) Victims of accidents occurring from handling of hazardous substances

(D) Victims of accidents occurring from nuclear reactor failures

39. Basel convention is related to :

(A) Transboundary movement of hazardous waste

(B) Safe disposal of nuclear waste

(C) Animal trafficking

(D) Marine pollution control

40. What does (P & CP) stand for in Air (P & CP) Act and Water (P & CP) Act ?

(A) Protection and control of pollution

(B) Prevention and conservation practices

(C) Prevention and control of pollution

(D) Protection and conservation program

41. What is the first stage in EMS process ?

(A) Assign environmental responsibility

(B) Establish environmental policy

(C) Set environmental objectives and targets

(D) Review the implementation

42. Part B of Environment Statement Report in Form V consists of :

(A) Water and raw material consumption

(B) Pollution discharged to environment

(C) Hazardous waste

(D) Solid waste

43. Grit removal in a waste water treatment plant :

(A) Prevents wear and tear of pumps

(B) Reduces potential for pip plugging

(C) Settles heavy inert material in waste water

(D) All of the above

44. What type of micro-organisms are found useful in activated sludge process ?

(A) Chemoautotrophs

(B) Photoautotrophs

(C) Chemoheterotrophs

(D) Photoheterotrophs

45. The typical characteristics of tropical evergreen rainforest is .....

(A) Grasses with few hardwood trees

(B) Short, softwood trees

(C) Tall, hardwood evergreen trees

(D) Short, hardwood trees

46. The logo for 'Eco-mark' scheme in India is :

(A) Plastic Jar

(B) Rubber Pot

(C) Earthen Pot

(D) Earthen Jar

47. Foliated and non-foliated categories are given for :

(A) Sedimentary rock classification

(B) Igneous rock classification

(C) Metamorphic rock classification

(D) Schist rock classification

48. GRIHA stands for :

(A) Green Rating for International Housing Assessment

(B) General Rating for Integrated Housing Assessment

(C) Green Rating for Integrated Habitat Assessment

(D) General Rating for Integrated Habitat Assessment

49. Which layer of the soil horizon is rich in inorganic nutrients as well as humus ?

(A) D

(B) C

(C) B

(D) A

50. The most abundant element on the Earth's crust is .....

(A) Aluminium

(B) Silicon

(C) Oxygen

(D) Iron

51. The range of the diameter of sand particles is :

(A) 2.00 – 0.06 mm

(B) 0.05 – 0.002 mm

(C) < 0.002 mm

(D) > 2.0 mm

52. The equilibrium model of an ecosystem states that :

(A) An ecosystem does not tend towards stability

(B) An ecosystem does not return to its original state

(C) An ecosystem will perish due to external environmental change

(D) An ecosystem always tends towards stability

53. Species that occur in different geographical regions or separated by a spatial barrier are called as :

(A) Sympatric

(B) Allopatric

(C) Ecological equivalents

(D) Ecotypes

54. "White Alkali" soils are :

(A) Saline soil

(B) Acid soil

(C) Sodic soil

(D) Saline sodic soil

55. Organisms predominantly found on, in or near bed sediment of freshwater resources are known as :

(A) Neuston

(B) Plankton

(C) Benthic

(D) Nekton

56. The term ISWM refers to :

(A) International Solid Waste Management

(B) Integrated Solid Waste Management

(C) Integrated Solid Waste Mechanism

(D) Integrated Solid Waste Machine

57. Match the following :

Composition of Garbage	**% by weight**
(*a*) Vegetables & leaves	(*i*) 3.8
(*b*) Paper	(*ii*) 0.62
(*c*) Glass	(*iii*) 40.2
(*d*) Plastics	(*iv*) 0.81

Codes :

	(*a*)	(*b*)	(*c*)	(*d*)
(A)	(*i*)	(*ii*)	(*iii*)	(*iv*)
(B)	(*iii*)	(*iv*)	(*i*)	(*ii*)
(C)	(*iv*)	(*iii*)	(*ii*)	(*i*)
(D)	(*iii*)	(*ii*)	(*iv*)	(*i*)

58. The sound waves collected by inner ear are transmitted to the middle ear by .....

(A) Semicircular canals

(B) Sensory cells

(C) Tympanic membrane

(D) Tiny bones

59. Match the following :

	Area		**Day Time Limits dBC(A)**
(*a*)	Industrial	(*i*)	55
(*b*)	Commercial	(*ii*)	75
(*c*)	Residential	(*iii*)	65
(*d*)	Silent	(*iv*)	50

	(*a*)	(*b*)	(*c*)	(*d*)
(A)	(*i*)	(*ii*)	(*iii*)	(*iv*)
(B)	(*ii*)	(*iii*)	(*i*)	(*iv*)
(C)	(*iii*)	(*ii*)	(*iv*)	(*i*)
(D)	(*iv*)	(*iii*)	(*i*)	(*ii*)

60. Which of the following energy transmitted through vacuum ?

(A) Sound

(B) Light

(C) Electric

(D) Heat

61. Which of the following situations represent the discharge of surplus water as surface runoff ?

(A) Precipitation > Evapotranspiration (PT > ET)

(B) Precipitation < Evapotranspiration (PT < ET)

(C) Precipitation = Evapotranspiration (PT = ET)

(D) Effective precipitation = Evapotranspiration (EPT = ET)

62. Which component of EIA is significant throughout life-cycle of a project ?

(A) Impact identification

(B) Baseline studies

(C) Impact prediction

(D) Impact evaluation

63. Which one of the following components of solid waste has the highest heating value ?

(A) Food

(B) Plastics

(C) Paper

(D) Wood

64. Coliform bacteria in water are the indicators of the presence of :

(A) Radioactive wastes

(B) Excess fertiliser

(C) Decaying organic matter

(D) Human faeces

65. Low BOD and high COD value for a waste-water sample is the indication of :

(A) higher content of biodegradable matter in waste-water

(B) higher content of non-biodegradable matter in waste-water

(C) higher content of chemical matter in waste-water

(D) higher content of matter of biological origin

66. The following are the plant nutrients :

P, B, Cu, Mg, Mn, N

Select the micronutrients out of the list given below :

(A) P, B, Cu, N

(B) B, Cu, Mn

(C) B, Cu, Mg

(D) Cu and Mn only

67. Analysis to assess burden created by a product or process on the environment is :

(A) Life-cycle assessment

(B) Toxicity studies

(C) Chronic toxicity

(D) Acute toxicity

68. A committee of 4 people is to be appointed from 3 officers of the production department, 4 officers of the purchase department, 2 officers of the sales department and one chartered accountant. What is the probability of forming the committee that there must be one from each category ?

(A) $\frac{2}{70}$

(B) $\frac{4}{70}$

(C) $\frac{6}{70}$

(D) $\frac{8}{70}$

69. If a certain species, say fish, reproduces only during the third year and then dies. Let an initial population of $n° = n = (1000, 0, 0)$ that is of 1000 newborns, and no other fishes. Now during the first year, 25% of fish survived and then 50% of those make it to reproduction age. Then the Leslie's matrix of this situation is :

(A) $\begin{bmatrix} f_1 & f_2 & f_3 \\ 0.25 & 0 & 0 \\ 0 & 0.5 & 0 \end{bmatrix}$

(B) $\begin{bmatrix} 0 & f_1 & f_3 \\ 0.25 & 0 & 0 \\ 0 & 0.5 & 0 \end{bmatrix}$

(C) $\begin{bmatrix} 0 & 0 & f_3 \\ 0.25 & 0 & 0 \\ 0 & 0.5 & 0 \end{bmatrix}$

(D) $\begin{bmatrix} 0 & 0 & f_3 \\ 0 & 0.25 & 0 \\ 0 & 0 & 0.5 \end{bmatrix}$

70. The forecasts on the basis of a time series are :

(A) 100% true

(B) True to some extent

(C) Never true

(D) All of the above

71. Asbestos refers to a family of naturally occurring :

(A) Fibrous selenium

(B) Silicon-based minerals

(C) Carbon-based minerals

(D) Telerium-based minerals

72. Which of the following is *not* an example of non-sampling risk ?

(A) Failing to evaluate results properly

(B) Use of an audit procedure inappropriate to achieve to a given audit objective

(C) Obtaining an unrepresentative sample

(D) Failure to recognize an error

73. Which species of mosquito is responsible for the spread of dengue ?

(A) Aedes

(B) Anopheles

(C) Culex

(D) Plasmodium

74. The variance of a Chi-square distribution with n degrees of freedom is :

(A) $2n$

(B) n

(C) n^2

(D) $\sqrt{n}$

75. If two dice are thrown, what is the probability that the sum is greater than 10 ?

(A) $\frac{1}{6}$

(B) $\frac{1}{36}$

(C) $\frac{2}{12}$

(D) $\frac{1}{24}$

76. A continuous random variable X follows the probability law :

$$f(x) = E.x^2;\ 0 \leq x \leq 1$$

What is the value of E ?

(A) 1

(B) 6

(C) 2

(D) 3

77. Let the value of correlation coefficient is greater than zero, the arithmetic mean of the regression coefficient is :

(A) Greater than the correlation coefficient

(B) Less than the correlation coefficient

(C) Equal to the correlation coefficient

(D) All of the above

78. Wetlands occurring between terrestrial (land) on one side and deep water on another side is an example of :

(A) Ecotone

(B) Ecological pyramid

(C) Ecological race

(D) Ecological niche

79. Kaziranga National Park is in the state of :

(A) Assam

(B) Meghalaya

(C) Arunachal Pradesh

(D) Uttarakhand

80. How much will be the increase in noise when two equal intensity sound mix together ?

(A) 2 dB(A)

(B) 5 dB(A)

(C) 3 dB(A)

(D) 6 dB(A)

81. Arrange these precipitation types in increasing order of their drop size :

(A) Rain drizzle shower

(B) Drizzle rain shower

(C) Shower rain drizzle

(D) Drizzle shower rain

82. Aeroallergens result in manifestation of allergic reactions ..... group of antibodies attach to these allergens and release inflammable chemicals such as histamine from mast cells.

(A) IgM

(B) IgG

(C) IgE

(D) IgA

83. Arrange the following gases in decreasing order of their concentration in atmosphere :

(A) CH_4 CO_2 O_3

(B) CO_2 CH_4 O_3

(C) O_3 CO_2 CH_4

(D) CH_4 O_3 CO_2

84. 'Superbug' was a term coined for micro-organism engineered for :

(A) Antibiotic production

(B) Probiotic production

(C) Hydrocarbon degradation

(D) Insulin production

85. The tropopause is located at the lowest level over (height) :

(A) Equator

(B) Subtropics

(C) High latitude and polar region

(D) Mid-latitude

86. Equation of state for dry atmosphere is given by :

(A) $p = \frac{\rho R}{m} T$

(B) $p = \frac{\alpha R}{m} T$

(C) $p\alpha = \frac{R}{m}$

(D) $p = \alpha RT$

87. During winter season (Jan.-Feb.) the rainfall due to NE monsoon is confined to ..... of India.

(A) SE Peninsula and Kerala

(B) Konkan

(C) Gujarat and Rajasthan

(D) Bihar and U.P.

88. Western disturbances which move in west to east direction affect the temperature, rainfall and weather of India in the following areas :

(A) J & K and Himachal Pradesh

(B) Konkan

(C) Karnataka

(D) Kerala

89. Monsoon depression travelling in a N Wly direction from the Bay of Bengal produce high rainfall ?

(A) In NW sector of the track

(B) In SW sector of the track

(C) West of the track

(D) East of the track

90. The gases responsible for green-house effect resulting in global warming are :

(A) Nitrogen and Ozone

(B) Oxygen and Ammonia

(C) Methane and Carbon dioxide

(D) Carbon monoxide

91. Tropical Easterly Jet stream is :

(A) Present throughout the year in tropics

(B) Present only during Northern Summer season over subtropics

(C) Present during Northern winter season over subtropics

(D) Present during summer monsoon season over SE Asia and India

92. Why does one need protection of ozone layer in the Stratosphere ?

(A) To reduce UV radiation reaching earth

(B) To enhance UV radiation reaching ground

(C) To reduce visible radiation received

(D) To enhance visible radiation received

93. Reaction $O_3 + h\nu \rightarrow O_2 + O('D)$ is called as :

(A) First order reaction

(B) Second order reaction

(C) Third order reaction

(D) All of the above

94. Psychrometer is an instrument used to measure :

(A) Relative humidity

(B) Atmospheric pressure

(C) Relative density of liquid

(D) Amount of actual evapo-transpiration

95. What is the *correct* order of the Earth's atmospheric layers from bottom to top ?

(A) Troposphere → Stratosphere → Mesosphere → Thermosphere → Exosphere

(B) Exosphere → Thermosphere → Mesosphere → Stratosphere → Troposphere

(C) Troposphere → Stratosphere → Thermosphere → Mesosphere → Exosphere

(D) Stratosphere → Troposphere → Mesosphere → Thermosphere → Exosphere

96. Which one of the following is the *correct* chemical formula for PAN (Peroxyacetyl nitrates)

(A) $C_2H_6O_5N$

(B) $CO_2H_5NO_2$

(C) CH_4O_5N

(D) $C_2H_3O_5N$

97. Stratospheric ozone is known to protect the life on the earth from ..... radiation.

(A) Visible

(B) Ultraviolet

(C) Infrared

(D) Microwave

98. Arrange the following gases in the increasing order of their life-time in the atmosphere :

(A) $CO_2 < CH_4 < CO$

(B) $CO_2 < CO < CH_4$

(C) $CH_4 < CO_2 < CO$

(D) $CO < CH_4 < CO_2$

99. Photovoltaic cells are used to convert ..... energy into electrical energy.

(A) Tidal

(B) Hydro

(C) Solar

(D) Wind

100. Tropical cyclones occur on :

(A) Meso-scale

(B) Micro-scale

(C) Planetary-scale

(D) Synoptic-scale

ROUGH WORK