

Test Paper : II

Test Subject : ENVIRONMENTAL SCIENCE

Test Subject Code : K-2918

Roll No.

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(Figures as per admission card)

OMR Sheet No. : _____

TEST BOOKLET SERIAL NO.

Name & Signature of Invigilator/s

Signature : _____

Name : _____

Time : 2 Hours

Maximum Marks : 200

Number of Pages in this Booklet : 16

Number of Questions in this Booklet : 100

ಅಭ್ಯರ್ಥಿಗಳಿಗೆ ಸೂಚನೆಗಳು

- ಈ ಪುಟದ ಮೇಲ್ಭಾಗದಲ್ಲಿ ಒದಗಿಸಿದ ಸ್ಥಳದಲ್ಲಿ ನಿಮ್ಮ ರೋಲ್ ನಂಬರನ್ನು ಬರೆಯಿರಿ.
- ಈ ಪತ್ರಿಕೆಯು ಬಹು ಆಯ್ಕೆ ವಿಧದ ನೂರು (100) ಪ್ರಶ್ನೆಗಳನ್ನು ಒಳಗೊಂಡಿದೆ.
- ಪರೀಕ್ಷೆಯ ಪ್ರಾರಂಭದಲ್ಲಿ ಪ್ರಶ್ನೆ ಪುಸ್ತಿಕೆಯನ್ನು ನಿಮಗೆ ನೀಡಲಾಗುವುದು. ಮೊದಲ 5 ನಿಮಿಷಗಳಲ್ಲಿ ನೀವು ಪುಸ್ತಿಕೆಯನ್ನು ತೆರೆಯಲು ಮತ್ತು ಕೆಳಗಿನಂತೆ ಕಡ್ಡಾಯವಾಗಿ ಪರೀಕ್ಷಿಸಲು ಕೋರಲಾಗಿದೆ.
 - ಪ್ರಶ್ನೆಪುಸ್ತಿಕೆಗೆ ಪ್ರವೇಶಾವಕಾಶ ಪಡೆಯಲು, ಈ ಹೊದಿಕೆ ಪುಟದ ಅಂಚಿನ ಮೇಲಿರುವ ಪೇಪರ್ ಸೀಲನ್ನು ಹರಿಯಿರಿ. ಸ್ವಿಕ್ಟರ್ ಸೀಲ್ ಇಲ್ಲದ ಅಥವಾ ತೆರೆದ ಪುಸ್ತಿಕೆಯನ್ನು ಸ್ವೀಕರಿಸಬೇಡಿ.
 - ಪುಸ್ತಿಕೆಯಲ್ಲಿನ ಪ್ರಶ್ನೆಗಳ ಸಂಖ್ಯೆ ಮತ್ತು ಪುಟಗಳ ಸಂಖ್ಯೆಯನ್ನು ಮುಖಪುಟದ ಮೇಲೆ ಮುದ್ರಿಸಿದ ಮಾಹಿತಿಯೊಂದಿಗೆ ತಾಳಿ ನೋಡಿರಿ. ಪುಟಗಳು/ಪ್ರಶ್ನೆಗಳು ಕಾಣೆಯಾದ ಅಥವಾ ದ್ವಿಪ್ರತಿ ಅಥವಾ ಅನುಕ್ರಮವಾಗಿಲ್ಲದ ಅಥವಾ ಇತರ ಯಾವುದೇ ವ್ಯತ್ಯಾಸದ ದೋಷಪೂರಿತ ಪುಸ್ತಿಕೆಯನ್ನು ಕೂಡಲೆ 5 ನಿಮಿಷದ ಅವಧಿ ಒಳಗೆ, ಸಂವಿಧಾನದಿಂದ ಸರಿ ಇರುವ ಪುಸ್ತಿಕೆಗೆ ಬದಲಾಯಿಸಿಕೊಳ್ಳಬೇಕು. ಆ ಬಳಿಕ ಪ್ರಶ್ನೆಪತ್ರಿಕೆಯನ್ನು ಬದಲಾಯಿಸಲಾಗುವುದಿಲ್ಲ, ಯಾವುದೇ ಹೆಚ್ಚು ಸಮಯವನ್ನೂ ಕೊಡಲಾಗುವುದಿಲ್ಲ.
- ಪ್ರತಿಯೊಂದು ಪ್ರಶ್ನೆಗೂ (A), (B), (C) ಮತ್ತು (D) ಎಂದು ಗುರುತಿಸಿದ ನಾಲ್ಕು ಪರ್ಯಾಯ ಉತ್ತರಗಳಿವೆ. ನೀವು ಪ್ರಶ್ನೆಯ ಎದುರು ಸರಿಯಾದ ಉತ್ತರದ ಮೇಲೆ, ಕೆಳಗೆ ಕಾಣಿಸಿದಂತೆ ಅಂಡಾಕೃತಿಯನ್ನು ಕಪ್ಪಾಗಿಸಬೇಕು.

ಉದಾಹರಣೆ : (A) (B) (C) (D)

(C) ಸರಿಯಾದ ಉತ್ತರವಾಗಿದ್ದಾಗ.
- ಈ ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆಯು ಜೊತೆಯಲ್ಲಿ ಕೊಟ್ಟಿರುವ OMR ಉತ್ತರ ಹಾಳೆಯಲ್ಲಿ ನಿಮ್ಮ ಉತ್ತರಗಳನ್ನು ಸೂಚಿಸತಕ್ಕದ್ದು. OMR ಹಾಳೆಯಲ್ಲಿ ಅಂಡಾಕೃತಿಯಿಲ್ಲದ ಬೇರೆ ಯಾವುದೇ ಸ್ಥಳದಲ್ಲಿ ಉತ್ತರವನ್ನು ಗುರುತಿಸಿದರೆ, ಅದರ ಮಾಲ್ಯಮಾಪನ ಮಾಡಲಾಗುವುದಿಲ್ಲ.
- OMR ಉತ್ತರ ಹಾಳೆಯಲ್ಲಿ ಕೊಟ್ಟ ಸೂಚನೆಗಳನ್ನು ಜಾಗರೂಕತೆಯಿಂದ ಓದಿರಿ.
- ಎಲ್ಲಾ ಕರಡು ಕೆಲಸವನ್ನು ಪುಸ್ತಿಕೆಯ ಕೊನೆಯಲ್ಲಿ ಮಾಡತಕ್ಕದ್ದು.
- ನಿಮ್ಮ ಗುರುತನ್ನು ಬಹಿರಂಗಪಡಿಸಬಹುದಾದ ನಿಮ್ಮ ಹೆಸರು ಅಥವಾ ಯಾವುದೇ ಚಿಹ್ನೆಯನ್ನು, ಸಂಗತವಾದ ಸ್ಥಳ ಹೊರತು ಪಡಿಸಿ, OMR ಉತ್ತರ ಹಾಳೆಯ ಯಾವುದೇ ಭಾಗದಲ್ಲಿ ಬರೆದರೆ, ನೀವು ಅನರ್ಹತೆಗೆ ಬಾಧ್ಯರಾಗುತ್ತೀರಿ.
- ಪರೀಕ್ಷೆಯು ಮುಗಿದನಂತರ, ಕಡ್ಡಾಯವಾಗಿ OMR ಉತ್ತರ ಹಾಳೆಯನ್ನು ಸಂವಿಧಾನದಿಂದ ನೀವು ಹಿಂತಿರುಗಿಸಬೇಕು ಮತ್ತು ಪರೀಕ್ಷಾ ಕೊಠಡಿಯ ಹೊರಗೆ OMRನ್ನು ನಿಮ್ಮೊಂದಿಗೆ ಕೊಂಡೊಯ್ಯಕೂಡದು.
- ಪರೀಕ್ಷೆಯ ನಂತರ, ಪರೀಕ್ಷಾ ಪ್ರಶ್ನೆಪತ್ರಿಕೆಯನ್ನು ಮತ್ತು ನಕಲು OMR ಉತ್ತರ ಹಾಳೆಯನ್ನು ನಿಮ್ಮೊಂದಿಗೆ ತೆಗೆದುಕೊಂಡು ಹೋಗಬಹುದು.
- ನೀಲಿ/ಕಪ್ಪು ಬಾಲ್ ಪಾಯಿಂಟ್ ಪೆನ್ ಮಾತ್ರವೇ ಉಪಯೋಗಿಸಿರಿ.
- ಕ್ಯಾಲ್ಕುಲೇಟರ್, ವಿದ್ಯುನ್ಮಾನ ಉಪಕರಣ ಅಥವಾ ಲಾಗ್ ಟೇಬಲ್ ಇತ್ಯಾದಿಯ ಉಪಯೋಗವನ್ನು ನಿಷೇಧಿಸಲಾಗಿದೆ.
- ಸರಿ ಅಲ್ಲದ ಉತ್ತರಗಳಿಗೆ ಋಣ ಅಂಕ ಇರುವುದಿಲ್ಲ.
- ಕನ್ನಡ ಮತ್ತು ಇಂಗ್ಲೀಷ್ ಆವೃತ್ತಿಗಳ ಪ್ರಶ್ನೆಪತ್ರಿಕೆಗಳಲ್ಲಿ ಯಾವುದೇ ರೀತಿಯ ವ್ಯತ್ಯಾಸಗಳು ಕಂಡುಬಂದಲ್ಲಿ, ಇಂಗ್ಲೀಷ್ ಆವೃತ್ತಿಗಳಲ್ಲಿರುವುದೇ ಅಂತಿಮವೆಂದು ಪರಿಗಣಿಸಬೇಕು.

Instructions for the Candidates

- Write your roll number in the space provided on the top of this page.
- This paper consists of Hundred multiple-choice type of questions.
- At the commencement of examination, the question booklet will be given to you. In the first 5 minutes, you are requested to open the booklet and compulsorily examine it as below :
 - To have access to the Question Booklet, tear off the paper seal on the edge of the cover page. Do not accept a booklet without sticker seal or open booklet.
 - Tally the number of pages and number of questions in the booklet with the information printed on the cover page. Faulty booklets due to pages/questions missing or duplicate or not in serial order or any other discrepancy should be got replaced immediately by a correct booklet from the invigilator within the period of 5 minutes. Afterwards, neither the Question Booklet will be replaced nor any extra time will be given.
- Each item 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 : (A) (B) (C) (D)

where (C) is the correct response.
- Your responses to the questions are to be indicated in the OMR Sheet kept inside this Booklet. If you mark at any place other than in the circles in the OMR Sheet, it will not be evaluated.
- Read the instructions given in OMR carefully.
- Rough Work is to be done in the end of this booklet.
- If you write your name or put any mark on any part of the OMR Answer Sheet, except for the space allotted for the relevant entries, which may disclose your identity, you will render yourself liable to disqualification.
- You have to return the test OMR Answer Sheet to the invigilators at the end of the examination compulsorily and must NOT carry it with you outside the Examination Hall.
- You can take away question booklet and carbon copy of OMR Answer Sheet after the examination.
- Use only Blue/Black Ball point pen.
- Use of any calculator, electronic gadgets or log table etc., is prohibited.
- There is no negative marks for incorrect answers.
- In case of any discrepancy found in the Kannada translation of a question booklet the question in English version shall be taken as final.

**ENVIRONMENTAL SCIENCE****Paper – II**

Note : This paper contains **hundred (100)** objective type questions. **Each** question carries **two (2)** marks. **All** questions are **compulsory**.

- On an average, salinity of sea water (ppt) is
(A) 6 (B) 3.6
(C) 36 (D) 360
- Assertion (A) :** NO_2 plays a significant role in the formation of photochemical smog.
Reason (R) : It is well known that in presence of sunlight NO_2 react with hydrocarbons to produce photochemical pollutants.
(A) Both (A) and (R) are true and (R) is the correct explanation of (A)
(B) Both (A) and (R) are true and (R) is not the correct explanation of (A)
(C) (A) is true but (R) is false
(D) (A) is false but (R) is true
- Match the List – I and List – II.

List – I	List – II
a. CFC's	i. Bhopal gas tragedy
b. CO_2	ii. Global warming
c. BOD	iii. Ozone depletion
d. MIC	iv. Water pollution

Identify the correct codes :

	a	b	c	d
(A)	i	ii	iii	iv
(B)	ii	iii	iv	i
(C)	iii	ii	iv	i
(D)	iv	iii	ii	i
- Based on the annual rainfall data, choose the correct sequence of localities in the descending order.
(A) Mawsynram – Cherrapunji – Agumbe – Nerimangalam
(B) Cherrapunji – Agumbe – Nerimangalam – Mawsynram
(C) Agumbe – Cherrapunji – Nerimangalam – Mawsynram
(D) Nerimangalam – Mawsynram – Agumbe – Cherrapunji
- Second law of thermodynamics states
(A) that energy may not be transformed
(B) that energy may be transformed but in limited quantity
(C) that with each successive energy transfer or transformation in a system less energy is available to do work
(D) that energy may be transformed but total amount does not change
- Following reactions take place during anaerobic digestion of organics.
 - Acid fermentation
 - Acid regression
 - Methane production
 - Alkaline fermentationThe correct sequence of these reaction is
(A) 2, 4, 1, 3
(B) 2, 4, 3, 1
(C) 1, 4, 2, 3
(D) 1, 2, 4, 3



8. The wind direction is
- (A) The direction to which the wind is blowing
 - (B) The direction from which the wind is blowing
 - (C) Always directly from high toward low pressure
 - (D) Always directly from low toward high pressure
9. Match the following List – I and List – II and choose correct answer from the codes given below :
- | List – I
(Type of soil) | List – II
(Description) |
|----------------------------|---|
| a. Red soils | 1. Low content of concretionary material |
| b. Laterite soils | 2. Compared essentially of a mixture of hydrated oxides of aluminium and Iron |
| c. Arid soils | 3. Found entirely in the areas West of Aravalli range |
| d. Forest soils | 4. Humus predominates |
- Codes :**
- | | a | b | c | d |
|-----|---|---|---|---|
| (A) | 1 | 2 | 3 | 4 |
| (B) | 3 | 1 | 4 | 2 |
| (C) | 1 | 3 | 2 | 4 |
| (D) | 3 | 4 | 1 | 2 |
10. The particle size of sand, silt and clay are
- (A) 0.02 to 2.00 mm, 0.002 to 0.02 mm and less than 0.002 mm respectively
 - (B) 0.04 to 20 mm, 0.04 to 0.4 mm and less than 0.04 mm respectively
 - (C) 0.002 to 0.02 mm, 0.02 mm to 2.5 mm and less than 0.02 mm respectively
 - (D) 0.08 to 8.00 mm, 0.008 to 0.08 mm and less than 0.008 mm respectively
11. Who coined the term “A Green Chemistry” ?
- (A) Trust
 - (B) Paul T. Anastas
 - (C) John C. Warner
 - (D) Berzelius
12. The earth’s atmosphere is divided into layers based on the vertical profile of
- (A) Air density
 - (B) Air pressure
 - (C) Air temperature
 - (D) Ozone density
13. The pyramid of energy in any ecosystem is
- (A) Always inverted
 - (B) Always upright
 - (C) May be upright or inverted
 - (D) May not be upright or inverted
14. The potential difference (ΔE) is related to the free energy of the cell reaction by the equation
- (A) $\Delta G = -nF\Delta E$
 - (B) $\Delta G = \Delta E - T\Delta S$
 - (C) $\Delta G = \Delta H - T\Delta E$
 - (D) $\Delta E = \Delta G - T\Delta S$



15. Match the List – I and List – II and choose the correct answer from the codes given below :

List – I (National Park)	List – II (Key animal)
a. Corbett National Park	i. Rhino
b. Kaziranga National Park	ii. Tiger
c. Gir National Park	iii. Lion
d. Silent Valley National Park	iv. Lion tailed Macaque

Codes :

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

16. An association in which a bird enters the mouth of crocodile and feed on parasitic leeches, the bird gets food and crocodile gets rid of blood sucking leeches. In this association both can live independently. The association is referred as
- (A) Mutualism
(B) Parasitism
(C) Protoco-operation
(D) Amensalism
17. The most common indicator organism that represent in polluted water is
- (A) *E. coli*
(B) *Entomoeba hystolitica*
(C) *Vibrio cholerae*
(D) *Bacillus thuringiensis*
18. Deeper zone in aquatic ecosystem is
- (A) Littoral (B) Limnetic
(C) Benthic (D) Profoundal

19. Which one of the following is a detritus food chain ?

- (A) Grass → Rabbit → Fox → Wolf → Tiger
(B) Herb → Insects → Frog → Snake → Peacock
(C) Phytoplankton → Insects → Small fish → Large fish → Crocodile
(D) Trees → Insect Larvae → Beetles → Earthworms

20. An equatorial west to east remote sensing satellite orbiting the earth at an altitude of 35,000 – 36,000 km is called

- (A) Quick bird panchromatic and multispectral imagery
(B) Space shuttle
(C) High resolution Linear Imaging Self-Scanning System IV (LISS – IV)
(D) Geostationary satellite

21. Consider the following statements excessive growth of water weeds in a water body is attributed to the

- I. Increase in the benthic organisms including bacteria.
II. Imbalance in aquatic ecosystem.
III. Excessive inflow of nutrients.

Choose the correct answer.

- (A) I and II
(B) I, II and III
(C) II and III
(D) I and III



22. An earthquake epicentre is
- (A) The point on the surface where damage is greatest
 - (B) The location where rupture begins
 - (C) The distance travelled by a seismic waves
 - (D) A measure of the amplitude of a P-wave in a seismograph
23. Handling of hazardous substances are mentioned in
- (A) Factories Act, 1948
 - (B) Water Act, 1974
 - (C) Environmental Protection Act, 1986
 - (D) Air Act, 1981
24. Countries can achieve Kyoto targets by
- (A) Trading in IPR
 - (B) Trading in agriculture
 - (C) Trading in carbon
 - (D) Trading in E – waste
25. What is the Mid Range (MR) of a data having 130 observations with minimum and maximum values being 7 and 34 respectively ?
- (A) 3.33
 - (B) 20.5
 - (C) 18.57
 - (D) 3.82
26. Tbilisi Conference on Environmental Education was held in the year
- (A) 1967
 - (B) 1977
 - (C) 1987
 - (D) 1997
27. Which one of the following is not a function/benefit of rainwater harvesting ?
- (A) Increase the water availability
 - (B) Checks the declining water table
 - (C) Dilutes the salts present in ground water
 - (D) Increase the surface flooding
28. With respect to carbon composition, which of the following is a correct ?
- (A) Gasoline – 84%
 - (B) Kerosene – 16%
 - (C) Peat – 70%
 - (D) Diesel – 15%
29. Which type of coal produces maximum energy with least pollution on burning ?
- (A) Anthracite
 - (B) Bituminous
 - (C) Lignite
 - (D) Peat
30. Solar energy is transformed in an ecosystem into work, heat and potential energy of food (depending on the situation) and other carbon skeletons, but none of it is destroyed. This condition obeys
- (A) First law of newton
 - (B) Second law of newton
 - (C) First law of thermodynamics
 - (D) Second law of thermodynamics
31. Microbial decomposition of biological material under anerobic condition is
- (A) Fermentation
 - (B) Contamination
 - (C) Composting
 - (D) Pulverization



32. Which one of the following is not an approach of environmental dimension of sustainability ?
- (A) Reduction of waste
 - (B) Elimination of toxic substances
 - (C) Creation of additional value to product
 - (D) Use of renewable raw materials
33. Technology Assessment is a component of
- (A) onsite audit
 - (B) pre audit
 - (C) post audit
 - (D) compliance status
34. Agenda 21 adopted during U.N. Conference on Environment and Development (Earth Summit) is a blue print for
- (A) Controlling environmental pollution
 - (B) Conserving wild life
 - (C) Achieving sustainable development
 - (D) Conserving forests
35. Which one among the following is a major limit to the secondary production ?
- (A) Temperature
 - (B) Rainfall
 - (C) Available primary production
 - (D) Sunlight
36. Biogeochemical cycle of which one of the following does not involve gaseous phase
- (A) Carbon
 - (B) Nitrogen
 - (C) Phosphorus
 - (D) Sulphur
37. The maximum efficiency of a commercial solar photovoltaic cell attainable today is
- (A) 3 – 10%
 - (B) 12 – 20%
 - (C) 40 – 50%
 - (D) 60 – 70%
38. The atmosphere near the earth's surface is heated from below, which of the following does not significantly contribute to this heating ?
- (A) Convection from a hot surface
 - (B) Conduction of heat upward from a hot surface
 - (C) Heat energy from the earth's interior
 - (D) Absorption of infrared energy that has been radiated from the surface
39. Which is the major pollutant present in photochemical smog ?
- (A) SO₂
 - (B) NO₂
 - (C) PAN
 - (D) HC



40. Consider the following Unit operation and processes commonly used in water treatment : Rapid Mixing (RM), Flocculation (F), Primary Sedimentation (PS), Secondary Sedimentation (SS), Chlorination (C) and Rapid Sand Filtration (RSF).

The order of these units (First to last) in a conventional water treatment plant is

- (A) PS → F → SS → RSF → RM → C
- (B) PS → RM → F → SS → RSF → C
- (C) PS → RSF → F → RM → SS → C
- (D) PS → F → RM → RSF → SS → C

41. **Assertion (A)** : At a manhole, the crown of the outgoing sewer should not be higher than the crown of the incoming sewer.

Reason (R) : Transition from a larger diameter incoming sewer to a smaller diameter outgoing sewer at a manhole should not be made.

The correct option evaluating the above statements is

- (A) Both (A) and (R) are true but (R) is not the correct reason for (A)
- (B) Both (A) and (R) are true and (R) is the correct reason for (A)
- (C) Both (A) and (R) are false
- (D) (A) is true but (R) is false

42. A combined Sewer is one, which transports domestic wastewater and

- (A) Industrial waste water
- (B) Storm water
- (C) Overhead flow
- (D) Infiltration flow

43. Sewage may be disposed of without treatment into a water body if the available dilution is

- (A) Less than 150
- (B) More than 150
- (C) More than 350
- (D) More than 500

44. Consider the following treatment steps in a conventional wastewater treatment plant.

1. Primary sedimentation
2. Grit chamber
3. Disinfection
4. Secondary sedimentation
5. Screening
6. Bioreactor

The correct sequence of these steps is

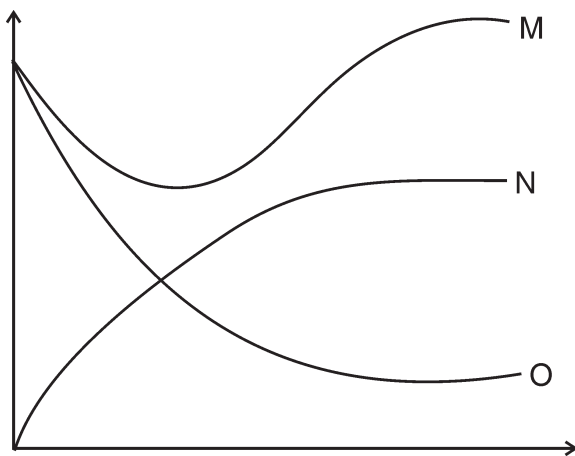
- (A) 1 4 3 6 2 5
- (B) 1 4 6 3 5 2
- (C) 5 2 1 6 4 3
- (D) 5 2 4 6 1 3



45. Two primary air pollutants are
- (A) Ozone and peroxyacetyl nitrate
 - (B) Nitrogen oxide and peroxyacetyl nitrate
 - (C) Sulphur oxide and ozone
 - (D) Sulphur oxide and hydrocarbon

46. What type of noise can be abated by providing lining on walls and ceiling with sound absorbing materials ?
- (A) Source noise
 - (B) Structural noise
 - (C) Reflection noise
 - (D) Direct air-borne noise

47. As per graph drawn between Dissolved Oxygen (DO) along Y-axis and duration along X-axis the curve marked N is



- (A) Oxygen deficit curve
- (B) Oxygen sag curve
- (C) Deoxygenation curve
- (D) Reoxygenation curve

48. Under Natural Conditions of flow an unpolluted river would contain
- (A) More dissolved oxygen in summer than in winter
 - (B) Less dissolved oxygen in summer than in winter
 - (C) More or less the same amount of dissolved oxygen in winter and summer
 - (D) Least amount of dissolved oxygen during the floods

49. Which state of Cr (Chromium) is most toxic ?
- (A) Cr_4^+
 - (B) Cr_3^+
 - (C) Cr_5^+
 - (D) Cr_6^+

50. In activated sludge process, the mixture of aerated water and microbial mass is called
- (A) Sewage
 - (B) Sewerage
 - (C) Mixed liquor suspended solid
 - (D) Fermented scum



51. Given below are two statements as Assertion (A) and the other labelled as Reason (R).

Assertion (A) : Aerosols have potential for modifying the climate.

Reason (R) : Aerosols interact with both short wave and infrared radiations.

Choose the correct answer.

- (A) Both (A) and (R) are true and (R) is the correct explanation
- (B) Both (A) and (R) are true and (R) is not correct explanation
- (C) (A) is true but (R) is false
- (D) (A) is false but (R) is true

52. Which of the following statement is true regarding flame photometry ?

- (A) it resolves mixture of volatile liquid derivatives
- (B) a flame photometry is extremely complex
- (C) a pre-selected filter is used in flame photometry
- (D) flame photometry is not good for elements that are easily excited

53. Automobile exhaust is the major source of carbon monoxide, which is also produced by

- (A) photochemical smog
- (B) depletion of ozone
- (C) reaction of acids
- (D) wild fires and fossil fuels burning

54. The quantity of energy released by following nuclear fusion is



Choose the correct answer.

- (A) 18.6 MeV
- (B) 17.6 MeV
- (C) 11.8 MeV
- (D) 9.89 MeV

55. Blue baby syndrome is caused by

- (A) nitrite pollution
- (B) sulphate pollution
- (C) chloride pollution
- (D) nitrate pollution



56. In EIA, the baseline data describes
- (A) Inventory of plant biodiversity
 - (B) Socio-economic status of local people
 - (C) Existing environmental status of the identified study area
 - (D) Risk assessment and risk prediction
57. Which one of the following project does not require public consultation of EIA ?
- (A) Construction of Dam
 - (B) A' category project
 - (C) Area development project and township
 - (D) New industrial projects
58. National Environmental Tribunal Bill was enacted in the year
- (A) 1985
 - (B) 1990
 - (C) 1992
 - (D) 1995
59. In which Section of Wildlife Protection Act, 1972 the hunting and intent to hunt the animals is described ?
- (A) Section 9
 - (B) Section 40
 - (C) Section 42
 - (D) Section 51
60. Relief to the victims of an accident involving hazardous substances shall be provided under
- (A) The Factories Act, 1972
 - (B) Mines and Minerals (Amended) Act, 1986
 - (C) The Insecticide Act, 1968
 - (D) The Public Liability Insurance Act, 1991
61. Dependent variables are known as
- (A) Rarely independent
 - (B) Explanatory variables
 - (C) Climate sensitive variables
 - (D) Response variable, is affected by independent variables
62. The Harmonic Mean (HM) of a set of values 2, 3, 5 and 6 which occur with a frequencies of 10, 16, 24 and 10 respectively is
- (A) 3.57
 - (B) 2.34
 - (C) 5.71
 - (D) 3.00



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

(Test)	(Purpose)
List – I	List – II
a. Chi-square	i. Comparing statistical models fit to a data set
b. F-test	ii. Examination of population means
c. Student ‘t’ test	iii. Compare three or more variables
d. ANOVA	iv. Testing independence and goodness of the fit

Codes :

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

64. Which one of the following is not a relevant method for factor analysis ?

- (A) Centroid method
- (B) Principal component method
- (C) Maximum likelihood method
- (D) Correlation method

65. In which of the following device electric energy is directly used to assist in the removal of particulate matter ?

- (A) Fabric filter
- (B) Electrostatic precipitator
- (C) Gravity settling chamber
- (D) Cyclone separator

66. Multilateral convention to promote shared responsibilities for transboundary movement of hazardous substances is

- (A) Stockholm convention
- (B) Basel convention
- (C) Kyoto protocol
- (D) Copenhagen summit

67. World wide “Earthwatch Programme” was established in the year of

- (A) 1977
- (B) 1971
- (C) 1972
- (D) 1945

68. NRCD (National River Conservation Directorate) scheme was started for

- (A) Cleanse the River Ganga
- (B) Cleanse the River Yamuna
- (C) Cleanse the River Brahmaputra
- (D) Cleanse the River Krishna



69. Which one of the following State has highest wasteland in India ?
- (A) Madhya Pradesh
 - (B) Karnataka
 - (C) Rajasthan
 - (D) Gujarat
70. Pesticide disaster that occurred in parts of Karnataka and Kerala causing anomalies in human population is due to
- (A) Malathion
 - (B) Methylparathion
 - (C) Endosulfan
 - (D) Glyphosate
71. The mouth of the river means
- (A) The interaction between fresh water and sea water
 - (B) The interaction between two rivers
 - (C) The tributary and main river
 - (D) The interaction between fresh water and polluted stream water
72. The Lotka – Volterra equations are used to explain
- (A) Parasite – host relationship
 - (B) Territoriality of a predator
 - (C) Hyper volume Niche
 - (D) Growth of Bacteria
73. Secchi disc is used to measure
- (A) Transparency of water
 - (B) Plankton density
 - (C) Colour
 - (D) Pollutants
74. The term ecosystem was introduced first in literature by
- (A) E.P. Odum
 - (B) Whittaker
 - (C) Tansley
 - (D) Kormondy
75. The driving mechanism of plate movement is thought to be
- (A) Composition
 - (B) Magnetism
 - (C) Thermal convection cells
 - (D) Rotation of Earth
76. If the coefficient of correlation is r , then the coefficient of determination is
- (A) \sqrt{r}
 - (B) $\frac{1}{r^2}$
 - (C) r
 - (D) r^2
77. The Biological Diversity Act, 2002 provides mechanism for
- (A) equal sharing of benefit arising out of use of traditional biological resources and knowledge
 - (B) equitable sharing of benefit arising out of use of traditional biological resources and knowledge
 - (C) economic benefit to tribal people arising out of use of traditional biological resources and knowledge
 - (D) cultivation of medicinal plants in the matrix of the forest ecosystem for economic upliftment of forest dependent communities



78. Spacing of contour lines depends on
(A) steepness (B) altitudes
(C) area (D) relief
79. A computerized system that allows users to enter different types of information about an area is known as
(A) GPS (B) GIS
(C) Navigator (D) Map
80. Environmental Impact Assessment (EIA) is mandatory under
(A) Wildlife Protection Act, 1972
(B) Environmental Protection Act, 1986
(C) Indian Forest Act, 1980
(D) Air (Prevention and control of Pollution) Act, 1981
81. When waste water enters a flowing river, the rapid depletion of dissolved oxygen is due to
(A) Change in temperature in river water
(B) The suspended particles in river and waste
(C) Respiratory activity of aquatic plants in the river
(D) Microbial Activity
82. Love canal incident is related to
(A) Radioactive waste disposal site
(B) Hazardous waste dumping site
(C) Biological waste dumping site
(D) Municipal waste dumping site
83. The United Nations Decade of Education for sustainable development
(A) 2005 – 2014
(B) 2000 – 2010
(C) 2005 – 2015
(D) 1990 – 2000
84. The hydrocarbons present in the plants can be converted into petroleum hydrocarbons are
(A) Petroplants
(B) Biomass
(C) Biofuel
(D) Hydroplants
85. Tidal power generation depends on
(A) Rise of sea level
(B) Fall of sea level
(C) Rise and fall of sea level
(D) Only low tide



86. The rate at which radiant energy is stored by photosynthetic and chemosynthetic activity of producers is
- (A) Secondary productivity
 - (B) Net productivity
 - (C) Primary productivity
 - (D) Net primary productivity
87. On an aerial photograph, the distance between the principal point and the conjugate principal point is called
- (A) Photo point
 - (B) Photo base
 - (C) Focal length
 - (D) Relief
88. Turbidity in water is caused mainly due to
1. only clay
 2. clay and algae only
 3. only microorganisms
 4. clay, algae and microorganisms
- Choose the correct answer.
- (A) only 1 (B) only 1 and 2
 - (C) only 3 (D) only 4
89. Mid oceanic ridges are examples of what type of boundary ?
- (A) Divergent (B) Subduction
 - (C) Convergent (D) Transform
90. A cyclone is a system of wind in which the blows spirally
- (A) Towards centre of pressure
 - (B) Towards the central region of high pressure
 - (C) Towards a region of low pressure
 - (D) Outwards from a central region of high pressure
91. A boundary across which seismic wave velocity changes markedly is known as a (an)
- (A) discontinuity
 - (B) seismic gap
 - (C) after shock
 - (D) s-wave shadow zone
92. Laterite soil in our country contains more of
- (A) Calcium and Lead
 - (B) Calcium and Potassium
 - (C) Boron and Magnesium
 - (D) Iron and Aluminium
93. Wild Life Week Programme organised every year on
- (A) First week of October
 - (B) Second week of June
 - (C) March first week
 - (D) First week of November



94. A Green Economy is one that results in
- (A) improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcity
 - (B) improved local livelihood through scientific cultivation of horticultural crops
 - (C) improved human well being through cultivation of cash crops in irrigated agricultural lands
 - (D) improved human well being through promotion of farm forestry in the Western Ghats and the Himalayas of India

95. B.R. Hills range is a biological corridor that connects
- (A) The Western Ghats to the Eastern Ghats
 - (B) The Eastern Ghats to the Nilgiri hills
 - (C) The M.M. Hills to the Nagarhole National Park
 - (D) The Nagarhole National Park to the Bandipur National Park

96. Island Arcs are characterized by the
- I. Deep focus earthquakes
 - II. Strong positive gravity anomalies
 - III. Fissure type of volcanic activity
 - IV. Crust of Transitional type

Identify the correct code.

- (A) I, II, III, IV (B) I, III, IV
- (C) I, II, IV (D) II, III, IV

Read the passage below and answer the questions that follow based on your understanding of the passage.

A stream and its tributaries carry runoff from its drainage basin. Drainage basins are separated from one another by divides. Streams erode by hydraulic action, abrasion and dissolution of soluble rocks. The coarser part of a stream's sediment load is transported as bed load and the finer part as suspended load. Streams also transport a dissolved load of ions in solution. Braided streams are characterized by a complex of dividing and rejoining channels. Braiding occurs when sediment transported by a stream is deposited within channels as sand and gravel bars. Flat areas paralleling stream channels are flood plains. They may be composed mostly of point bar deposits.

97. Flow around a meander results in erosion on one bank of the channel and deposition on the other bank is
- (A) Oxbow lake (B) Alluvial fan
 - (C) Point bar (D) Drainage basin
98. Which is the way a stream erodes by hydraulic action ?
- (A) The direct impact of water
 - (B) Changes in base level
 - (C) Diminished capacity
 - (D) Solution activity
99. The feature separating one drainage basin from another is a (an)
- (A) Flood plain (B) Divide
 - (C) Delta (D) Point bar
100. The bed load of a stream consists of all material transported by what ?
- (A) Suspension and solution
 - (B) Dissolution of limestone
 - (C) Saltation and rolling and sliding
 - (D) Capacity and competence



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Space for Rough Work