

Test Paper : II

Test Subject : ENVIRONMENTAL SCIENCE

Test Subject Code : K-2917

Test Booklet Serial No. : \_\_\_\_\_

OMR Sheet No. : \_\_\_\_\_

Roll No. 

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(Figures as per admission card)

**Name & Signature of Invigilator/s**

Signature : \_\_\_\_\_

Name : \_\_\_\_\_

Paper : II

Subject : ENVIRONMENTAL SCIENCE

Time : 1 Hour 15 Minutes

Maximum Marks : 100

Number of Pages in this Booklet : 16

Number of Questions in this Booklet : 50

**ಅಭ್ಯರ್ಥಿಗಳಿಗೆ ಸೂಚನೆಗಳು**

- ಈ ಪುಟದ ಮೇಲ್ಭಾಗದಲ್ಲಿ ಒದಗಿಸಿದ ಸ್ಥಳದಲ್ಲಿ ನಿಮ್ಮ ರೋಲ್ ನಂಬರನ್ನು ಬರೆಯಿರಿ.
- ಈ ಪತ್ರಿಕೆಯು ಬಹು ಆಯ್ಕೆ ವಿಧದ ಐವತ್ತು ಪ್ರಶ್ನೆಗಳನ್ನು ಒಳಗೊಂಡಿದೆ.
- ಪರೀಕ್ಷೆಯ ಪ್ರಾರಂಭದಲ್ಲಿ ಪ್ರಶ್ನೆಪುಸ್ತಕವನ್ನು ನಿಮಗನಿರೀಡಲಾಗುವುದು. ಮೊದಲ 5 ನಿಮಿಷಗಳಲ್ಲಿ ನೀವು ಪ್ರಶ್ನೆಪುಸ್ತಕವನ್ನು ತೆರೆಯಲು ಮತ್ತು ಕೆಳಗಿನಂತೆ ಕಡ್ಡಾಯವಾಗಿ ಪರೀಕ್ಷಿಸಲು ಕೋರಲಾಗಿದೆ.
  - ಪ್ರಶ್ನೆ ಪುಸ್ತಕಕ್ಕೆ ಪ್ರವೇಶವಾಹಕ ಪಡೆಯಲು, ಈ ಹೊದಿಕೆ ಪುಟದ ಅಂಚಿನ ಮೇಲಿರುವ ಪೇಪರ್ ಸೀಲನ್ನು ಹರಿಯಿರಿ. ಸ್ವಿಚ್ ಸೀಲ್ ಇಲ್ಲದ ಅಥವಾ ತೆರದ ಪ್ರಶ್ನೆಪುಸ್ತಕವನ್ನು ಸ್ವೀಕರಿಸಬೇಡಿ.
  - ಪ್ರಶ್ನೆಪುಸ್ತಕದಲ್ಲಿನ ಪ್ರಶ್ನೆಗಳ ಸಂಖ್ಯೆ ಮತ್ತು ಪುಟಗಳ ಸಂಖ್ಯೆಯನ್ನು ಮುಖಪುಟದ ಮೇಲೆ ಮುದ್ರಿಸಿದ ಮಾಹಿತಿಯೊಂದಿಗೆ ತಾಳಿ ನೋಡಿರಿ. ಪುಟಗಳು/ಪ್ರಶ್ನೆಗಳು ಕಾಣೆಯಾದ, ಅಥವಾ ದ್ವಿಪ್ರತಿ ಅಥವಾ ಅನುಕ್ರಮವಾಗಿಲ್ಲದ ಅಥವಾ ಇತರ ಯಾವುದೇ ವ್ಯತ್ಯಾಸದ ದೋಷಪೂರಿತ ಪ್ರಶ್ನೆಪುಸ್ತಕವನ್ನು ಕೂಡಲೆ 5 ನಿಮಿಷದ ಅವಧಿ ಒಳಗೆ, ಸಂವೀಕ್ಷಕರಿಂದ ಸರಿ ಇರುವ ಪ್ರಶ್ನೆಪುಸ್ತಕಕ್ಕೆ ಬದಲಾಯಿಸಿಕೊಳ್ಳಬೇಕು. ಆ ಬಳಿಕ ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆಯನ್ನು 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.
- ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆ I ರಲ್ಲಿ ಕೊಟ್ಟಿರುವ OMR ಉತ್ತರ ಹಾಳೆಯಲ್ಲಿ, ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆ II ಮತ್ತು ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆ III ರಲ್ಲಿ ಇರುವ ಪ್ರಶ್ನೆಗಳಿಗೆ ನಿಮ್ಮ ಉತ್ತರಗಳನ್ನು ಸೂಚಿಸತಕ್ಕದ್ದು. OMR ಹಾಳೆಯಲ್ಲಿ ಅಂಡಾಕೃತಿಯಲ್ಲದ ಬೇರೆ ಯಾವುದೇ ಸ್ಥಳದಲ್ಲಿ ಉತ್ತರವನ್ನು ಗುರುತಿಸಿದರೆ, ಅದರ ಮೌಲ್ಯಮಾಪನ ಮಾಡಲಾಗುವುದಿಲ್ಲ.
- OMR ಉತ್ತರ ಹಾಳೆಯಲ್ಲಿ ಕೊಟ್ಟ ಸೂಚನೆಗಳನ್ನು ಜಾಗರೂಕತೆಯಿಂದ ಓದಿರಿ.
- ಎಲ್ಲಾ ಕೆಲಸವನ್ನು ಪ್ರಶ್ನೆಪುಸ್ತಕ ಕೊನೆಯಲ್ಲಿ ಮಾಡತಕ್ಕದ್ದು.
- ನಿಮ್ಮ ಗುರುತನ್ನು ಬಹಿರಂಗಪಡಿಸಬಹುದಾದ ನಿಮ್ಮ ಹೆಸರು ಅಥವಾ ಯಾವುದೇ ಚಿಹ್ನೆಯನ್ನು ಸಂಗತವಾದ ಸ್ಥಳ ಹೊರತು ಪಡಿಸಿ, OMR ಉತ್ತರ ಹಾಳೆಯ ಯಾವುದೇ ಭಾಗದಲ್ಲಿ ಬರೆದರೆ, ನೀವು ಅನರ್ಹತೆಗೆ ಬಾಧ್ಯರಾಗಿರುತ್ತೀರಿ.
- ಪರೀಕ್ಷೆಯು ಮುಗಿದನಂತರ, ಕಡ್ಡಾಯವಾಗಿ OMR ಉತ್ತರ ಹಾಳೆಯನ್ನು ಸಂವೀಕ್ಷಕರಿಗೆ ನೀವು ಹಿಂತಿರುಗಿಸಬೇಕು ಮತ್ತು ಪರೀಕ್ಷಾ ಕೊಠಡಿಯ ಹೊರಗೆ OMR ನ್ನು ನಿಮ್ಮೊಂದಿಗೆ ಕೊಂಡೊಯ್ಯಕೂಡದು.
- ಪರೀಕ್ಷೆಯ ನಂತರ, ಪರೀಕ್ಷಾ ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆಯನ್ನು 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 ಇಂಗ್ಲಿಷ್ ಆವೃತ್ತಿಗಳ ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆಗಳಲ್ಲಿ ಯಾವುದೇ ರೀತಿಯ ವ್ಯತ್ಯಾಸಗಳು ಕಂಡುಬಂದಲ್ಲಿ, ಇಂಗ್ಲಿಷ್ 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 fifty 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 the Paper I Booklet only. 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 **fifty (50)** objective type questions. **Each** question carries **two (2)** marks. **All** questions are **compulsory**.

1. Which of the following pairs is not correctly matched ?

<b>Plume Behaviour</b>	<b>Atmospheric Condition</b>
------------------------	------------------------------

- |                |                                                                 |
|----------------|-----------------------------------------------------------------|
| (A) Looping    | (i) Stable                                                      |
| (B) Fumigation | (ii) Inversion above and lapse below the stack                  |
| (C) Trapping   | (iii) Inversion above and below the stack with lapse in between |
| (D) Fanning    | (iv) Inversion                                                  |

2. In soil and sediments, the relative importance of cations occupying exchange site is generally

- (A)  $\text{Ca}^{2+} > \text{Mg}^{2+} > \text{Na}^+ > \text{K}^+$   
(B)  $\text{Ca}^{2+} > \text{Mg}^{2+} > \text{K}^+ > \text{Na}^+$   
(C)  $\text{Na}^+ > \text{K}^+ > \text{Mg}^{2+} > \text{Ca}^{2+}$   
(D)  $\text{Ca}^{2+} > \text{K}^+ > \text{Na}^+ > \text{Mg}^{2+}$

3. The large depression formed by the collapse of volcanic vent occupied by crater lake, is known as

- (A) Parasitic cone  
(B) Caledra  
(C) Lava dome  
(D) Lahar

4. 49 moles of oxygen is supplied with 10 moles of ethane, what is the percentage excess of oxygen ?

- (A) 20%  
(B) 40%  
(C) 50%  
(D) 70%

5. Which one is the pre-dominant volatile gas during volcanic eruption ?

- (A)  $\text{H}_2$   
(B) CO  
(C)  $\text{S}_2$   
(D)  $\text{N}_2$



6. Which type of seismic wave travels fastest, and which type will not travel through a fluid ?
- (A) P wave/ S wave
  - (B) S wave/ reflected wave
  - (C) P wave/ surface wave
  - (D) Surface wave/ S wave
7. The daily cover of MSW landfills consists of which one of the following ?
- (A) Geomembrane
  - (B) Geocomposite
  - (C) Geo-textile
  - (D) Compacted soil
8. Consider the following statements
1. Theorems of probability is addition and multiplication theorem
  2. Theorems of probability is addition only
  3. The probability of an event is often defined as a number between 1 and zero.
- Which of the above statements is/are correct ?
- (A) 1 and 3
  - (B) only 1
  - (C) only 2
  - (D) 1 and 2
9. In aerobic conditions, the microbial decomposition of organic matter results information of which one of the following ?
- (A) Stable and objectionable end products
  - (B) Stable and unobjectionable end products
  - (C) Unstable and objectionable end products
  - (D) Unstable and acceptable end products
10. THUMBA, near Thiruvananthapuram, is associated with
- (A) Space application centre
  - (B) Satellite centre
  - (C) Liquid propulsion system centre
  - (D) Rocket Launching station
11. Solid waste landfills may cause troubles during
- (A) Peak summers
  - (B) Peak winters
  - (C) Peak summer and winter
  - (D) Peak monsoons



12. In which Sal forest found in India

- (A) Upper Himalayas
- (B) Gangetic plains
- (C) Sunderbans
- (D) Western Ghats

13. Match List – I (Drinking water quality parameters) with List – II (Concentration – Permissible limit as per Indian standard) and select the correct answer using the codes given below

List – I (Parameters)	List – II (Concentrations)
a. Residual Chlorine ( $\text{Cl}_2$ )	i. 0.3 mg/l
b. Chloride ( $\text{Cl}^-$ )	ii. < 300 mg/l
c. Nitrate ( $\text{NO}_3^-$ )	iii. 250 mg/l
d. Hardness as $\text{CaCO}_3$	iv. 45 mg/l

Codes :

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

14. A new greenhouse gas, which is about 20,000 more powerful than  $\text{CO}_2$  in trapping heat radiated by earth surface is

- (A)  $\text{SF}_5\text{CF}_5$
- (B)  $\text{SF}_5\text{CF}_6$
- (C)  $\text{SF}_5\text{CF}_3$
- (D)  $\text{SF}_3\text{CF}_5$

15. Identify the correct sequence of stages of obtaining Environmental clearance for new projects.

- (A) Appraisal, Screening, Scoping, Public Consultation
- (B) Screening, Scoping, Public Consultation, Appraisal
- (C) Screening, Public Consultation, Scoping, Appraisal
- (D) Screening, Appraisal, Scoping, Public Consultation,



16. Among BOD and COD, because of which is used as an index of sewage concentration

- (A) BOD represents both carbonaceous and nitrogenous organic matter, while COD may indicate carbonaceous matter only
- (B) BOD relates specifically to perform and gives more reliable result
- (C) BOD relates specifically to putrescible organic matter which is the most objectionable sewage constituent
- (D) COD relates to the impurities which can only be removed by chemical treatment which is expensive

17. The type of projects which among the following will require public consultation under EIA process to be carried out under Indian EIA Notification 2006, is

- (A) Projects concerning National defence and security
- (B) Building/ construction/Area development/ township projects
- (C) Expansion of roads and highways which do not involve any further land acquisition
- (D) Nuclear power projects

18. SONOX-out technology for removal of oxides of nitrogen and oxides of sulphur from flue gas in acid rain is

- (A) Combined plasma scrubbing
- (B) Desulfurization and denitrification
- (C) Addition of lime stone ( $\text{CaCO}_3$ ) and urea
- (D) Liquid phase dehumidification at cryogenic temperature and low pressure



19. Which of the following statements related to C/N (Carbon/Nitrogen) ratio is not correct ?
- (A) Lower initial C/N ratio leads to loss of nitrogen and slow down the rate of decomposition
  - (B) Higher initial C/N ratio leads cell destruction to obtain nutrition
  - (C) Higher initial C/N ratio leads to lower conservation of Nitrogen in the finished compost
  - (D) An initial C/N ratio of 30 to 50 is optimal for composting

20. The following reactions take place during anaerobic digestion of organics
1. Methane production
  2. Alkaline fermentation
  3. Acid fermentation
  4. Acid regression

The correct sequence of these reaction is

- (A) 3, 4, 1, 2
- (B) 4, 3, 2, 1
- (C) 3, 4, 2, 1
- (D) 4, 3, 1, 2

21. The reaction  $O_2 \rightarrow 2O$ , which occurs in the stratosphere, does not occur in the troposphere to produce ozone due to
- (A) Lower tropospheric temperature
  - (B) Absence of  $\lambda < 242$  nm radiation
  - (C) High air pressure
  - (D) High gas molecule concentrations

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

**Assertion (A) :** The photic zone extends to a maximum depth of 200 meters (656 feet) below the surface of water.

**Reason (R) :** This is where not enough sunlight penetrates for photosynthesis process occur.

Choose the correct answer from the codes :

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



23. Match the List – I and List – II. Choose the correct answer from the codes given below :

- | List – I      | List – II                                                  |
|---------------|------------------------------------------------------------|
| a. Autotrophs | i. Distinct communities of a particular climatic condition |
| b. Food chain | ii. Relationship of all the organisms in a given habitat   |
| c. Food web   | iii. Photosynthesis                                        |
| d. Biomes     | iv. Producers, consumers and decomposers in a given niche  |

Codes :

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

24. Reliable, quantitative and verifiable data used in Environmental impact assessment study are called

- (A) Hard data
- (B) Soft data
- (C) Continuous data
- (D) Discrete data

25. Match the List – I and List – II. Choose the correct answer from the codes given below :

- | List – I               | List – II                                             |
|------------------------|-------------------------------------------------------|
| a. Square matrix       | i. All its elements below principal diagonal are zero |
| b. Sub-matrix          | ii. All the diagonal elements are equal               |
| c. Scalar matrix       | iii. Obtained by deleting some rows and columns       |
| d. Triangular matrices | iv. Number of rows is equal to the number of columns  |

Codes :

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



26. Chlorofluorocarbons or CFCs are also known as

- (A) Ion
- (B) Anion
- (C) Chrom ion
- (D) Freon

27. Match the List – I and List – II. Choose the correct answer from the codes given below :

<b>List – I</b>	<b>List – II</b>
a. Poisson distribution	i. Abraham De-moivre
b. t-distribution	ii. Simeon Denis Poisson
c. Normal distribution	iii. Jacob Bernoulli
d. Binomial distribution	iv. Critical value

**Codes :**

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

28. Match the List – I and List – II. Choose the correct answer from the codes given below :

<b>List – I</b>	<b>List – II</b>
<b>(Nature of solids)</b>	<b>(Unit Operation)</b>

- |                     |                    |
|---------------------|--------------------|
| a. Colloidal solids | i. Reverse Osmosis |
| b. Settlable solids | ii. Coagulation    |
| c. Dissolved solids | iii. Settling tank |
| d. Volatile solids  | iv. Digestion      |

**Codes :**

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





- 29.** Cost-Benefit Analysis seeks to analyse cost and benefits of a project in terms of
- (A) Environmental and monetary gain
  - (B) Social gain
  - (C) Social and environmental costs and gains
  - (D) Monetary gains
- 30.** Hydrocarbons are the most stable compounds against radiation. Which of the following types of hydrocarbons is most stable ?
- (A) Saturated
  - (B) Unsaturated
  - (C) Aromatic
  - (D) All are equally stable
- 31.** Under EIA Notification, 2006 which of the following category of projects donot require EIA ?
- (A) Category A
  - (B) Category A1
  - (C) Category B1
  - (D) Category B2

- 32.** Consider the following statements :

1. The quality of wastewater is determined on the basis of DO
2. The BOD Test is based on DO
3. Determination of DO helps in controlling corrosion

Which of the above statements are correct ?

- (A) 1, 2 and 3
- (B) 1 and 2 only
- (C) 1 and 3 only
- (D) 2 and 3 only

- 33.** Which one of the following Acts/Rules has a provision for 'No Right to appeal' ?

- (A) Environment (Protection) Act, 1986
- (B) Manufacture, Storage and Import of Hazardous Chemical Rules, 1989
- (C) Hazardous Waste (Management and Handling) Rules, 1989
- (D) Environment (Protection) Rules, 1992



34. Nobel Peace Prize for 2007 was awarded to the climate change campaigner

(A) Barack Obama

(B) Al Gore

(C) Rajendra Sinh

(D) Sundarlal Bahuguna

35. The net primary productivity of an ecosystem is

(A) The productivity at top consumer level minus respiration at all levels

(B) The gross primary productivity minus plant respiration

(C) The primary productivity at herbivore level

(D) The primary productivity at consumer level

36. Consider the following statements about waste stabilization ponds

1. The pond has a symbiotic behaviour of waste stabilization through algae on one hand and bacteria on the other

2. The oxygen in ponds is provided by algae through photosynthesis

3. The detention period or Residence time for waste stabilization pond is of the order of two to three days

4. The bacteria which develop in the pond, are aerobic bacteria

Which of these statement are correct ?

(A) 1, 2 and 3

(B) 1, 3 and 4

(C) 1 and 2

(D) 2 and 4



37. Arrange the following countries in descending order of their Carbon emission.

- i. India
- ii. Bhutan
- iii. USA
- iv. China

**Codes :**

- (A) i    iii    iv    ii
- (B) iv    i    iii    ii
- (C) iii    i    ii    iv
- (D) iii    iv    i    ii

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

**Assertion (A) :** Construction of dam leads to damage of ecosystem.

**Reason (R) :** The area gets inundated with large volume of water.

Choose the correct answer from the codes :

- (A) Both (A) and (R) are true with (R) being the correct explanation
- (B) Both (A) and (R) are true, but (R) is not the correct explanation
- (C) (A) is true, but (R) is wrong
- (D) Both (A) and (R) are wrong

39. Match the List – I and List – II. Choose the correct answer from the codes given below :

**List – I**

**List – II**

**(Pollutants)**

**(Sources)**

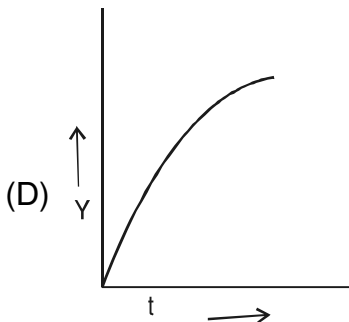
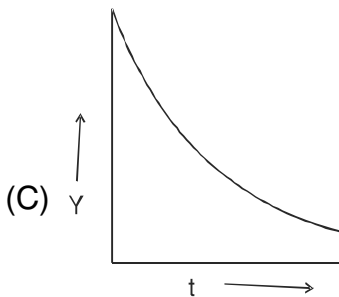
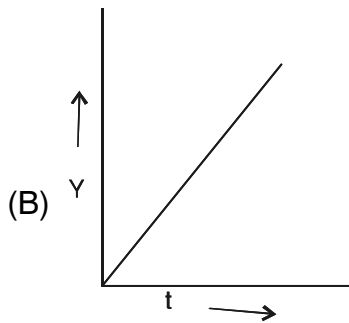
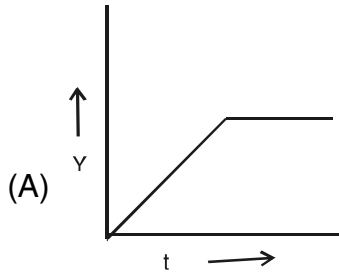
- |                    |                            |
|--------------------|----------------------------|
| a. Acid water      | i. Volcanoes               |
| b. SO <sub>2</sub> | ii. Automobiles            |
| c. CO              | iii. Thermal Power Station |
| d. Fly ash         | iv. Mining                 |

**Codes :**

- |     | <b>a</b> | <b>b</b> | <b>c</b> | <b>d</b> |
|-----|----------|----------|----------|----------|
| (A) | iv       | i        | ii       | iii      |
| (B) | iv       | i        | iii      | ii       |
| (C) | i        | iv       | iii      | ii       |
| (D) | i        | iv       | ii       | iii      |



40. The graphical representation of BOD(Y) exerted against time in days (t) is given by



41. Which of the following statement is/are true ?

- I. A community and its habitat are independent
- II. A community and its habitat are interdependent
- III. A community and its habitat interact mutually

**Codes :**

- (A) Only I is correct
- (B) Only II is correct
- (C) II and III are correct
- (D) Only III is correct

42. What will be the resultant decibel level when two sources make noise of equal decibels ?

- a. Decibel level will be same
- b. Decibel level will increase by 3 decibels
- c. Decibel level will decrease by 3 decibels
- d. Decibel level will be equal to the sum of decibels of the two sources

**Codes :**

- (A) c
- (B) b
- (C) a
- (D) d



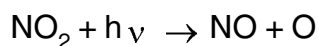
43. Modern coal based thermal power stations pollute the atmosphere by adding

- (A) NO<sub>x</sub> and SO<sub>2</sub>
- (B) NO<sub>x</sub>, SPM and CO
- (C) NO<sub>x</sub>, SO<sub>2</sub> and SPM
- (D) NO<sub>x</sub>, SO<sub>2</sub>, SPM and CO

44. Secondary wastewater treatment particularly removes of

- (A) Suspended organic matter
- (B) Dissolved and colloidal organic matter
- (C) Harmful bacteria and suspended organic matter
- (D) Fats and grease

45. NO<sub>2</sub> undergoes photodissociation by absorbing visible and UV light from the sun, according to the reaction



Here wavelength of light is generally

- (A) 450 nm
- (B) > 400 nm
- (C) < 600 nm
- (D) > 800 nm

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

**Assertion (A) :** In recent years, there has been a progressive increase in the percentage of solar ultraviolet rays reaching the Earth's surface.

**Reason (R) :** In the past few years, there has been a progressive increase in the percentage of carbon dioxide in the Earth's atmosphere.

Choose the correct answer from the codes :

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



47. Match the List – I and List – II. Choose the correct answer from the codes given below :

**List – I**

**List – II**

- |                        |                                  |
|------------------------|----------------------------------|
| a. Methanoglobinemia   | i. Volatile solids               |
| b. Muffle furnace      | ii. Suspended particulate matter |
| c. High volume sampler | iii. Nitrate                     |
| d. Septic tank         | iv. Anaerobic bacteria           |

**Codes :**

- |     | <b>a</b> | <b>b</b> | <b>c</b> | <b>d</b> |
|-----|----------|----------|----------|----------|
| (A) | iii      | i        | ii       | iv       |
| (B) | i        | ii       | iii      | iv       |
| (C) | iii      | ii       | iv       | i        |
| (D) | iv       | ii       | iii      | i        |

48. Ecological Footprint (EF) is

- (A) Chemical load on ecosystem
- (B) Biological load on ecosystem
- (C) Physical load on ecosystem
- (D) Load imposed by a given population on nature

49. Given below are two statements, one labelled as Assertion (A) and the other labelled as Reason (R) :

**Assertion (A) :** Warming of the Earth's climate is the effect of Green House Gases.

**Reason (R) :** Concentration of CO<sub>2</sub> and some other Green House Gases increased.

Choose the correct answer from the codes :

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

50. Arrange the following gases in increasing order as per their percentage in atmosphere.

- i. Nitrogen
- ii. Oxygen
- iii. Argon
- iv. Carbon dioxide

**Codes :**

- (A) iv i iii ii
- (B) i ii iii iv
- (C) iv iii ii i
- (D) ii iii iv i



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