

IFET COLLEGE OF ENGINEERING
DEPARTMENT OF AI&DS, AI&ML, CIVIL, CSE & IT

SUBJECT CODE: 23CH6603

YEAR/SEMESTER: III/VI

SUBJECT NAME: WATER AND SOIL CONSERVATION

UNIT- II - WIND EROSION AND DEPOSITION

Question Bank

SYLLABUS:

Wind erosion - Types of soil movement - Erosion damage by wind erosion - Estimation of wind erosion - wind erodibility index, roughness factor, climate factor, unsheltered distance and vegetative cover factor - Detaching capacity of wind - transport capacity of wind - Factors affecting wind erosion.

PART-A

Wind Erosion-Types of Soil Movement

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| 1. Define Wind Erosion | K2 |
| 2. What is soil movement? Mention the types of soil movement. | K1 |
| 3. <i>How soil particles are carried by the suspension process?</i> | K2 |
| 4. Define Saltation. | K2 |
| 5. <i>Which type of movement changes the soil texture?</i> | K1 |
| 6. What is Surface creep in soil movement? | K1 |
| 7. List out the particle size for various types of soil movement. | K1 |

Erosion Damage by wind erosion

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| 8. Which type of erosion causes the most damage? Explain. | K1 |
| 9. What factor has the greatest effect on soil loss due to erosion? | K2 |
| 10. Relate the impact of erosion damage over textural Change. | K2 |
| 11. <i>How do nutrients get lost due to erosion damage?</i> | K1 |
| 12. How erosion affects the productivity of soil? | K2 |
| 13. <i>With a help of case study, explain erosion damage over abrasion.</i> | K1 |
| 14. <i>Does air pollution is caused by soil erosion? Explain.</i> | K1 |
| 15. What kind of deposition occurs after erosion? | K2 |
| 16. <i>Analyze the role of sand deposit with case study.</i> | K2 |

Estimation of wind erosion (Wind erodibility index, roughness factor, climate factor, unsheltered distance and vegetative cover factor)

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| 17. Write the equation used for the estimation of wind erosion. | K2 |
| 18. Define Wind Erodibility Index. Mention its significance in soil conservation. | K2 |
| 19. What is meant by roughness factor in wind erosion control? | K1 |

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| 20. | Define the climatic factor affecting wind erosion. | K2 |
| 21. | <i>How does unsheltered distance affect soil loss by wind?</i> | K2 |
| 22. | <i>How does vegetative cover control wind erosion?</i> | K2 |
| Detaching capacity of wind – transport capacity of wind | | |
| 23. | <i>How do you relate detaching capacity of wind and friction velocity?</i> | K2 |
| 24. | <i>Interpret the relation between the rate of dune sand and soil movement by wind.</i> | K2 |
| Factors affecting wind erosion | | |
| 25. | List out the factors which are affecting wind erosion. | K2 |
| 26. | <i>Interpret how soil size affects wind erosion?</i> | K1 |
| 27. | <i>How do you evaluate roughness factor?</i> | K1 |
| 28. | Outline the rainfall contribution in soil erosion. | K1 |
| 29. | Write a note on knoll Slopes. | K1 |
| 30. | List out the function of Vegetative Cover in wind erosion. | K2 |

PART-B

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| 1 | i) What is soil movement? Explain its types. | 6 | K2 |
| | ii) Describe the types of soil movement by the wind erosion. | 10 | K2 |
| 2 | Briefly describe the types of erosion damage to soils that can be caused by loss of soil depth, textural change, and nutrient and productivity losses. | 16 | K3 |
| 3 | Explain abrasion as a process of wind erosion. Discuss its causes, effects on soil. Also explain air pollution, its sources, and effects on soil. | 16 | K3 |
| 4 | Explain about deposition caused by soil erosion. | 16 | K3 |
| 5 | What is wind erosion? Explain the method of estimating wind erosion and discuss the role of wind erodibility index, climatic factor, roughness factor, unsheltered distance, and vegetative cover factor. | 16 | K2 |
| 6 | Identify the characteristics of wind that influence the amount of soil that is eroded and describe how each characteristic affects the erosion process. | 16 | K4 |
| 7 | Describe the following factor affecting wind erosion
(i) Soil Resistance
(ii) Surface Ridges and Roughness | 16 | K3 |
| 8 | Explain the impact of rainfall, knoll slopes, Length of Exposed Area and vegetative cover on wind erosion. | 16 | K3 |