CHEMISTRY

BOOKS - BETTER CHOICE PUBLICATION

SURFACE CHEMISTRY

Question Bank

1. Distinguish between the 'meaning of the terms adsorption and absorption. Give one example of each.

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2. Write four differences between adsorption and absorption.

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3. What is desorption ?

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4. What is sorption ?

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5. What is occulusion ?

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6. What do you understand by activation of adsorbent? How is it achieved?

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7. In case chemisorption, why adsorption first increase and then decrease with temperature ?

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8. Physical adsorption is multilayered while chemisorption is monolayered.Why ?

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9. Adsorption is an exothermic process. Explain.

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10. Why the rate of physical adsorption decreases with the rise of temperature ?

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11. Why the rate of physical adsorption decreases with the rise of temperature ?

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12. Why are powdered substances more effective adsorbents than their crystalline forms?

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13. Give reasons why a finely divided substance is more effective as an adsorbent.

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14. What is the difference between physisorption and chemisorption ?

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15. What are the factors which influence the adsorption of a gas on a solid ?

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16. How does adsorption of gases on solids depend upon : Nature of gas ?

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17. What is adsorption isotherm ?

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18. What is adsorption isobar?

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19. Differentiate between: Adsorption Isotherm and Adsorption Isobar.

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20. What is adsorption isotherm ?

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21. Write Freundlich adsorption isotherm equation at high pressures.

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22. Write Freundlich adsorption isotherm equation at high pressures.

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23. What is adsorption isotherm ?

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24. Can adsorption occur from solutions ? Give examples.

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25. How does adsorption of gases on solids depend upon: Temperature?

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26. Explain two applications of adsorption.

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27. Define Catalyst and Catalysis.

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28. What is heterogeneous catalysis ? What role does adsorption play in heterogeneous catalysis ?

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29. Give the mechanism of heterogeneous catalysed reaction.

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30. Give four examples of heterogeneous catalysis.

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31. What name is given to the catalysis when the state of the catalyst is the same as those of the reactants.

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32. What name is given to the catalysis when the state of the catalyst is different from the state of reactants ?

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33. What name is given to the catalysis which is explained by lock-and-key model?

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34. Write two differences between homogeneous catalysis and heterogeneous catalysis.

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35. What is homogeneous and heterogeneous catalysis ? Give one example of each.

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36. Write two differences between homogeneous catalysis and heterogeneous catalysis.

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37. Explain briefly homogeneous catalysis.

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38. What do you understand by activity and selectivity of a catalyst ? Give one example of each.

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39. What is shape selective catalysis?

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40. Describe some features of catalysis by zeolites.

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41. How do enzymes differ from catalysts ?

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42. What are Enzymes ? Give important characteristics of enzyme catalysis.

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43. Give the mechanism of heterogeneous catalysed reaction.

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44. Explain two applications of enzymes.

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45. What are colloids ?

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46. which are the properties of colloidal solution ?

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47. What is the difference between true solution and colloidal solution?

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48. Give three differences between suspension and colloid solution.

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49. Name the dispersed phase and dispersion mediumin fog.

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50. Comment on the statement that “colloid is not a substance but a state of substance.”

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51. What are lyophilic and lyophobic sols ? Give one example of each. Why lyophobic sol is easily coagulated ?

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52. What are gels ? Give an example of elastic and non-elastic gel.

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53. How will you differentiate Lyophilic colloids from Lyophobic colloids?

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54. Lyophillic colloids are more stable than lyophobic colloids. Explain.

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55. What is the difference between multimolecular and macromolecular colloids ? Give one example of each. How are associated colloids different from these two types of colloids?

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56. Give three differences between multimolecular colloids and macromolecular colloids.

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57. What are micelles ? Give one example of a micellar system.

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58. Explain the mechanism of the cleansing action of soaps

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59. Discuss cleansing action of soap by micelle formation.

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60. Write short note on peptisation.

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61. What is peptization ? What is cause of peptization ? Give one example.

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62. How will you prepare a collidal solution of gold?

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63. Write short note on electro-dialysis.

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64. Explain Brownian movement.

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65. What name is given to the zig-zag motion of the colloidal particles?

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66. Explain Tyndall effect.

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67. Explain Tyndall effect.

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68. What name is given to the scattering of light by colloidal solution?

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69. Write notes on Hardy Schulze Rule ?

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70. Write short note on

Coagulation or flocculation

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71. Write short note on electro-dialysis.

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72. Write short note on

Electro-osmosis.

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73. Define electro-osmosis.

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74. What do you understand by protection of colloids ?

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75. What do you mean by gold number ?

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76. What happens when colloidal solutions of $Fe(OH)_3$ and 'AS_2O_3' are mixed ?

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77. What are emulsions ? What are their different types ? Give one example of each type.

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78. What name is given to the liquid-liquid colloidal solution ?

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79. Write two differences between solution and emulsion.

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80. Milk is an oil in water type emulsion.

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81. How oil in water or water in oil type of emulsions can be identified by dye test ?

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82. How oil in water or water in oil type of emulsions can be identified by dye test ?

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83. What is emulsification ? Explain the role of emulsifier to stabilise the emulsion.

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84. Define: Emulsification

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85. What is emulsification ? Explain the role of emulsifier to stabilise the emulsion.

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86. Mention two uses of emulsions.

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87. Emulsions are normally prepared by shaking the two components together vigorously although some kind of emulsifiying agent usually has to added to stabilize the product. This emulsifying agent amy be a soap or other sufactant (surface active) sepcies or a

lyophilic sol that forms a protective film around the dispersed phase.

Emulsion broadly classified into two types:

(i) Oil in water emulsions (O/W): Oil acts as dispersed phase and water acts as dispersion medium.

(ii). Water in oil emulsion (W/O): Water acts as dispersed phase and oil acts as dispersion medium Due test, dilution test may be emplyoyed for identification of emulsions.

Q. Read two statment s:

(1) milk is an example of oil in water (O/w) type emulsion

(2) cold cream is an example of water in oil (W/O) type emulsion

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88. Define: Emulsification

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89. Give suitable explanations for the following:

Sky is blue in colour.

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90. Give suitable explanations for

A delta is formed where a river falls into the sea.

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91. Give five important applications of colloids in home and industry.

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92. Give reason : Bleeding from a fresh cut can be stopped by applying alum.

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93. Why does the sun looks red at the time of setting ? Explain on the basis of colloidal properties.

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94. Why are medicines more effective in colloidal state ?


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