



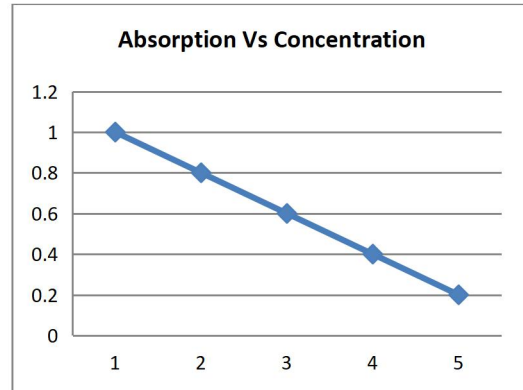
8. As per IS 10500- Indian drinking water quality standards, \_\_\_\_\_ is the desired limit for Iron in drinking water.

- |       |        |
|-------|--------|
| A 0.3 | B 0.03 |
| C 0.5 | D 0.05 |

9. Acidity in water is caused due to \_\_\_\_\_.

- |                        |                 |
|------------------------|-----------------|
| A Free CO <sub>2</sub> | B Mineral acids |
| C Aluminum Sulfate     | D All of these  |

10. Following standard curve depicts the colorimetric plot for \_\_\_\_\_.



- |                      |                      |
|----------------------|----------------------|
| A Iron               | B Fluoride           |
| C PO <sub>4</sub> -P | D NH <sub>3</sub> -N |

11. \_\_\_\_\_ kg/day of lime is required to add on treatment facility of 10 MLD of water with 500 mg/lit of Total hardness as CaCO<sub>3</sub> and 200 mg/lit of Non carbonate hardness as CaCO<sub>3</sub>.

- |        |        |
|--------|--------|
| A 3770 | B 2220 |
| C 1480 | D 2120 |

12. \_\_\_\_\_ kg/day of Chlorine will be required to treat 10 MLD of water with required chlorine dose of 2 mg/lit.

- |       |       |
|-------|-------|
| A 0.2 | B 2.0 |
| C 20  | D 200 |

13. Nalgonda Method is widely adopted to remove \_\_\_\_\_ in water treatment.

- |            |            |
|------------|------------|
| A Nickel   | B Iron     |
| C Chromium | D Fluoride |

14. \_\_\_\_\_ is not a type of depth filtration.

- |                                 |                    |
|---------------------------------|--------------------|
| A Membrane filtration           | B Sand filtration  |
| C Diatomaceous earth filtration | D Cloth filtration |

15. In membrane filtration processes, Micro filtration is more suitable and efficient for the removal of particle size range \_\_\_\_\_.

- |   |   |
|---|---|
| A 1 X 10 <sup>-4</sup> to 1 X 10 <sup>-5</sup> μm | B 0.05 to 0.005 μm                                |
| C 1.0 to 0.1 μm                                   | D 5 X 10 <sup>-3</sup> to 5 X 10 <sup>-4</sup> μm |

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35. As per National Ambient Air Quality Standards in India, \_\_\_\_\_ is the maximum permissible concentration of Nitrogen Dioxide for 24 hours average in urban air.
- A 40  $\mu\text{g}/\text{M}^3$  B 60  $\mu\text{g}/\text{M}^3$   
C 80  $\mu\text{g}/\text{M}^3$  D 100  $\mu\text{g}/\text{M}^3$
36. \_\_\_\_\_ is the secondary air pollutant may be found in urban air of dense traffic zones.
- A  $\text{SO}_2$  B  $\text{O}_3$   
C  $\text{NO}_2$  D All of above
37. A \_\_\_\_\_ plume pattern occurs under essentially neutral stability, when environmental lapse rate is equal to the adiabatic lapse rate.
- A Coning B Looping  
C Fanning D Fumigation
38. (i)Mist (ii) Fog (iii) Smoke (iv) Fume  
\_\_\_\_\_ of the above is/are type/s of aerosol.
- A All of these B None of these  
C (i),(iii) & (iv) D (ii),(iii) & (iv)
39. \_\_\_\_\_ is the air pollutant gas directly associated in destructing the cardio vascular system of human.
- A CO B  $\text{CO}_2$   
C  $\text{SO}_2$  D  $\text{NO}_2$
40. \_\_\_\_\_ gas is contributing least in green house effect enhancement on earth surface.
- A  $\text{CO}_2$  B  $\text{SO}_2$   
C  $\text{NO}_2$  D CFC
41. \_\_\_\_\_ is the concentration of  $\text{SO}_2$  in ppm, if sampled air containing 80  $\mu\text{g}/\text{M}^3$  of  $\text{SO}_2$  at 25° c temperature and 1 atm pressure.
- A 0.003 B 0.03  
C 0.3 D 3.0
42. Centrifugal separators are most commonly found efficient & preferable to remove particles of size range \_\_\_\_\_.
- A 0.1-1.0  $\mu\text{m}$  B 10-25  $\mu\text{m}$   
C 1.0-10  $\mu\text{m}$  D 25-100  $\mu\text{m}$
43. In standard cyclone configuration, ratio of height of cylindrical portion and conical portion is kept as \_\_\_\_\_.
- A 0.5 B 1.0

44. The bag filters are of generally \_\_\_\_\_ type/s.
- C 1.5 D 2.0
- A Shaker type B Reverse-air type
- C Pulse jet type D All of above
45. Wet venturi scrubbers are quite effectively used in removing \_\_\_\_\_ pollutants from the gaseous phase.
- A Gaseous pollutants B Particulate pollutants
- C Both together D None of (A) & (B)
46. The range of normal human hearing is \_\_\_\_\_.
- A 0.2-2.0 Hz B 2.0-20 Hz
- C 20-20000 Hz D >20000 Hz
47. According to the Noise Pollution (R &C) Rules, India, the day and night time noise level limits in ambient air for residential area expressed in dBA Leq. are \_\_\_\_\_.
- A 55 & 45 B 50 & 40
- C 65 & 55 D 75 & 70
48. Levels of safe noise depend on \_\_\_\_\_.
- A Frequency B Levels of noise and exposure
- C Pitch D Area
49. The range over which the sound levels are fluctuating in an interval of time is called \_\_\_\_\_.
- A Sound Pressure B Sound Power
- C Noise Climate D Aplitude
50. As per Occupational Safety and Health Administration (OSHA) regulations, no exposure in excess of \_\_\_\_\_ sound pressure level is permitted.
- A 90 dBA B 105 dBA
- C 115 dBA D 130 dBA
51. Following is not the part of EIA
- A Screening B Safety assessment
- C Scoping D Base line survey
52. First step towards preservation of ozone layer was taken at \_\_\_\_\_.
- A Montreal Protocol B Basel Convention
- C Kyoto Protocol D Rio Declaration
53. A project may not be permitted if EIA reveals impacts that are \_\_\_\_\_.
- A naturally reversible B Short term
- C naturally irreversible D None of the above
54. Water (Prevention and Control of Pollution) Act 1974 was enacted \_\_\_\_\_.
- A For maintaining and restoring B To have wholesome environment
- wholesomeness of water bodies
- C To prevent pollution of D All of the above
- environment
55. The Wildlife Protection Act was enacted in \_\_\_\_\_.
- A 1976 B 1971
- C 1975 D 1972
56. \_\_\_\_\_ enacted under the Environment Protection Act, 1986.

- A Municipal Solid Waste (M& H) Rules      B Hazardous Waste (M & H) Rules
- C Bio Medical Waste (M & H) Rules      D All of these
57. Water Cess Act implemented in India in the year \_\_\_\_\_.  
 A 1977      B 1974  
 C 1971      D 1981
58. Pollution control & regulatory activities in to the Union territory of India is governed by \_\_\_\_\_.  
 A Nearby State Pollution Control Board      B MoEF & CC  
 C Pollution Control Committee      D Central Pollution Control Board
59. As per Bio-medical waste rule, bio medical waste can be mixed with \_\_\_\_\_.  
 A Compostable garden waste      B Inorganic Municipal Solid Waste  
 C Organic Municipal Solid Waste      D None of these
60. Rules notified by MOEF in year 2016  
 A Plastic waste management rules      B Environment Protection Act  
 C Bio Medical Waste (M&H) Rule      D All of these
61. Bio medical waste is classified into \_\_\_\_\_ categories, as per World Health Organization (WHO).  
 A 02      B 03  
 C 04      D 05
62. The Environmental Audit scheme was mainly framed on the principle/s of  
 (i.) Polluters' pay  
 (ii.) Continual improvement  
 (iii.) Meeting regulatory standards & generation of database  
 A (i.) & (ii.)      B (i.) (ii.) & (iii.)  
 C (ii.) & (iii.)      D (i.) & (iii.)
63. Integrated Solid Waste Management system offers \_\_\_\_\_ benefits.  
 (i) Better resource use efficiency  
 (ii) Savings in management cost  
 (iii) Better business opportunity & economic growth  
 (iv) Turning vicious circle into virtuous circle  
 A (i) (ii) & (iii)      B (i) (ii) & (iv)  
 C (ii) (iii) & (iv)      D All of these
64. An average Indian urban citizen (Class-II cities) produces solid waste in the range of \_\_\_\_\_.  
 A 50-100 gms      B 500-1000 gms  
 C 1500-3000 gms      D 3000-5000 gms
65. High calorific value waste indicates amenability for \_\_\_\_\_.  
 A Composting      B Landfilling  
 C Incineration      D Pyrolysis
66. \_\_\_\_\_ is typically not a part of landfill construction or operations.

- A Liners B Aerators  
 C Air vents D Leachate well
67. \_\_\_\_\_ is the aerobic composting technique in traditional way.  
 A Amravati method B Bangalore method  
 C Indore method D None of these
68. The most serious environmental effect posed by hazardous wastes is \_\_\_\_\_.  
 A Air pollution B Increased use of land for landfills  
 C Contamination of ground water D None of these
69. Heavy metals like Arsenic, Cadmium and Cyanide effect \_\_\_\_\_.  
 A Immune system B Skin  
 C Respiratory system D Nervous system
70. Spent caustic is from metal finishing is an example of \_\_\_\_\_ waste category.  
 A Organic aqueous B Inorganic aqueous  
 C Organic liquid D Organic sludge
71. Toxicity of hazardous waste is generally characterized by \_\_\_\_\_.  
 A Instability B Volume  
 C Temperature D Dose
72. Bio diversity is of importance as it offers \_\_\_\_\_.  
 A Stability of ecosystem B Stability of atmosphere  
 C Stability of species D Stability of research
73. \_\_\_\_\_ of the followings is not an in-situ conservation method.  
 A Zoos B National parks  
 C Sanctuaries D Bio sphere reserves
74. Metals are produced as waste in industries like \_\_\_\_\_.  
 A Skiing B Mining  
 C Electroplating D Digging
75. \_\_\_\_\_ is the program run by United Nations related to sustainable environment.  
 A Agenda 21 B GHC indicator  
 C IPCC D UNEP
76. For Gold LEED certification, \_\_\_\_\_ points are required.  
 A 40-49 B 60-79  
 C 50-59 D 80-100
77. In waste to energy processes, carbon can be stored from organic matter in the form of \_\_\_\_\_.  
 A Biomass B Bio fuel  
 C Bio energy D Bio carbon
78. In aquatic eco systems, carbon is stored in \_\_\_\_\_.  
 A Marine animals B Marine plants  
 C Sediments and rocks D Sea water
79. Hot Spot Areas in ecology have \_\_\_\_\_.  
 A High density of hot springs B Low density of bio diversity  
 C Low density of endangered species D High density of bio diversity
80. The 'Miracle material' that can convert CO<sub>2</sub> into liquid fuel is \_\_\_\_\_.  
 A Propene B Potassium  
 C Copper D Graphene



- 81 The rank of a matrix  $\begin{bmatrix} 7 & 0 & 0 \\ 5 & 3 & 0 \\ 1 & 2 & 8 \end{bmatrix}$  is
- A 0 B 1  
C 3 D 2
- 82 A linear system  $x + y + z = 2$ ,  $2x + 3y + z = 5$ ,  $2x + 2y + 2z = 4$  has
- A Infinite number of solutions B No Solution  
C Unique solution D None of these
- 83 If  $A = \begin{bmatrix} 2 & 3 & 1 \\ 0 & 1 & 2 \\ 0 & 0 & 4 \end{bmatrix}$  then eigen values of  $A^{-1}$  are
- A 4, 1, 2 B  $\frac{1}{2}, 1, \frac{1}{4}$   
C 3, 2, 4 D 4, 3, 1
- 84 If  $A = \begin{bmatrix} 1 & 1 & -1 \\ 0 & 2 & 0 \\ 0 & 0 & 1 \end{bmatrix}$  then  $A^3 - 4A^2 + 5A - 2I$  is equal to
- A Null Matrix B Identity Matrix  
C Non-Singular Matrix D None of these
- 85  $\lim_{x \rightarrow 0} \frac{5 \tan x + 3 \sin x}{x^2}$  is equal to
- A 1 B 2  
C 3 D 0
- 86 The value of improper integral  $\int_0^{\infty} e^{-7x} dx$  is
- A 0 B 1  
C  $\frac{1}{7}$  D 7
- 87 If  $U = \tan^{-1} \left( \frac{x^2 + y^2}{x^2 - y^2} \right)$  then  $x \frac{\partial U}{\partial x} + y \frac{\partial U}{\partial y}$  is equal to
- A 0 B U  
C 2U D 3U
- 88 If  $\phi = xyz$  then  $\text{curl}(\text{grad} \phi)$  is
- A  $\nabla \phi$  B  $\mathbf{0}$   
C  $\nabla^3 \phi$  D  $\nabla^2 \phi$
- 89 The value of  $\oint_C xy^2 dy - y^3 dx$ , where C is square bounded by  $x = 0$ ,  $x = 1$ ,  $y = 0$  and  $y = 1$  is
- A 4 B 3  
C  $\frac{3}{4}$  D  $\frac{4}{3}$
- 90 Solution of  $(x - y \cos x)dx - (\sin x)dy = 0$  is
- A  $x^2 - 2y \sin x = c$  B  $x - 2y^2 \sin x = c$   
C  $x^2 - 2y^2 \sin x = c$  D  $x - 2y \sin x = c$
- 91 Solution of  $\frac{d^2 y}{dx^2} + 6 \frac{dy}{dx} + 9y = e^{-3x}$  is
- A  $C_1 e^{3x} + C_2 e^{-3x} + x^2 e^{3x}$  B  $(C_1 + C_2 x) e^{-3x} + \frac{x^2}{2} e^{-3x}$

- C  $(C_1 + C_2 x)e^{-3x} + x^2$  D  $(C_1 + C_2 x)e^{3x} + \frac{x}{2}e^{3x}$
- 92 Inverse Laplace transformation of  $\frac{5}{(s^2+9)(s^2+4)}$  is
- A  $\sin 2t - \sin 3t$  B  $t(\sin 2t + \sin 3t)$   
 C  $\frac{1}{6}(3 \sin 2t - 2 \sin 3t)$  D  $e^{2t} + \sin 3t$
- 93 Which one is Analytic function
- A  $\bar{Z}$  B  $Z^3$   
 C  $|Z|$  D  $Z\bar{Z}$
- 94 Value of  $\int_C \frac{z}{z-3} dz$ , (where C is  $|Z - 3| < 1$ ) is
- A  $4\pi i$  B  $2\pi i$   
 C  $3\pi i$  D  $6\pi i$
- 95 Residue of  $f(Z) = \frac{Z+4}{Z^2(Z-3)}$  at simple pole is
- A  $\frac{7}{9}$  B  $7$   
 C  $1$  D  $9$
- 96 Newton-Raphson iteration formula for  $x^2 - x - 1 = 0$  is
- A  $x_{n+1} = \frac{x_n^2 + 1}{2x_n - 1}$  B  $x_{n+1} = \frac{x_n^2 - 1}{2x_n - 1}$   
 C  $x_{n+1} = \frac{x_n^2 + 1}{2x_n + 1}$  D  $x_{n+1} = \frac{x_n^2 + 2}{2x_n + 1}$
- 97 Value of integral  $\int_0^3 \frac{1}{1+x} dx$  using Simpson's 3/8 rule with step size  $h = 0.5$  is
- A  $1.3455$  B  $1.3888$   
 C  $1.5345$  D  $1.1555$
- 98 If  $\frac{dy}{dx} = -y$ ,  $y(0) = 1$ ,  $h = 0.1$ , by Rungee-Kutta third order method to what is an approximate value of  $y(0.1)$
- A  $0.9532$  B  $0.7957$   
 C  $0.9048$  D  $0.9519$
- 99 Mean of binomial probability distribution is 857.6 and probability is 64% then number of values of binomial distribution is
- A  $1040$  B  $1340$   
 C  $1140$  D  $1240$
- 100 Number of product manufacture in a factory in a day are 3500 and probability that some pieces are defective is 0.55 then mean is
- A  $1925$  B  $1875$   
 C  $2025$  D  $6370$