ENGINEERING SCIENCE
(FINAL)

1. Which of the following processes in water treatment is intended to remove floating debris, branches, trees, or other large particles suspended in water?

   (A) Primary sedimentation
   (B) Secondary sedimentation
   (C) Screening
   (D) Aeration

2. Which of the following plants is the most sensitive towards sulphur dioxide?

   (A) Tomato
   (B) Onion
   (C) Potato
   (D) Corn

3. Which of the following devices is used for removing pollutants in the vapour phase/gaseous phase?

   (A) Thermal oxidizers
   (B) Absorption towers
   (C) Catalytic converters
   (D) All of the above

4. In the lower layers of atmosphere, what range of wavelengths of light is predominant?

   (A) Between 100-300 nm
   (B) Less than 100 nm
   (C) Greater than 300 nm
   (D) All wavelengths are equally present

5. Which of the following radiations of the sun do greenhouse gases trap?

   (A) Infrared radiations
   (B) UV radiations
   (C) Visible radiations
   (D) All of the above

6. Which of the following is **NOT** a part of photochemical smog?

   (A) SPM
   (B) PAN
   (C) O_3
   (D) NO_2

7. Which of the following device is used to prevent the clogging of sewer pipes?

   (A) Drop manhole
   (B) Storm regulators
   (C) Flushing tank
   (D) Lamp hole

8. Which of the following is an advantage of a separate water carriage system?

   (A) The more uniform character of sewage
   (B) Two sets of sewer are used
   (C) Get choked easily
   (D) Difficult to clean the sewer

9. Which of the following greenhouse gases is contributed by cattle farming?

   (A) Carbon monoxide
   (B) Nitrous oxide
   (C) Methane
   (D) All of the above

10. Which of the following is used to measure suspended solids in water?

    (A) Turbidity rod
    (B) Gravimetric test
    (C) Chromatography
    (D) Jackson's turbidity meter

11. Which of the following is used to measure the color of water?

    (A) Gravimetric analysis
    (B) Chromatography
    (C) Tintometer method
    (D) Hydrometer analysis

12. One JTU is equivalent to turbidity produced by

    (A) 1 mg of fine silica dissolved in 1 L of distilled water
    (B) 1 g of fine silica dissolved in 1 L of distilled water
    (C) 1 g of fine silica dissolved in 1 ml of distilled water
    (D) 1 mg of fine silica dissolved in 1 ml of distilled water

13. Which of the following statement is **NOT** true regarding turbidity?

    (A) It is an extent to which light is absorbed by particles in the water
    (B) It is expressed in ppm
    (C) It depends on the fineness of particle present in the water
    (D) Turbidity rod is a laboratory method to measure turbidity

14. Chlorides in water are estimated by titration with a standard silver nitrate solution by using …………… as an indicator.

    (A) Potassium manganate
    (B) Potassium chloride
    (C) Potassium chromate
    (D) Potassium dichromate

15. The indicator used in EDTA method is

    (A) Potassium chromate
    (B) Potassium dichromate
    (C) Potassium chloride
    (D) Erio chrome black T

16. Which of the following represents the bacterial density that is most likely to be present in water?

    (A) Coliform index
    (B) MPN
    (C) COD
    (D) BOD

17. Which of the following diseases is caused by bacterial infections?

    (A) Typhoid fever
    (B) Infectious hepatitis
    (C) Amoebic dysentery
    (D) Poliomyelitis

18. Secondary treatment systems can be used for biological degradation of …………… in municipal waste waters.

    (A) Carbon dioxide and methane
    (B) Nitrogen and CO_2
    (C) CO and methane
    (D) Organic pollutants

19. Compensation for lower temperatures can be achieved by reducing hydraulic and organic loading rates, thereby increasing

(A) retention time
(B) mixing
(C) aeration
(D) sparging

20. Which of the following is low energy consuming system for waste water treatment?

(A) Biological wave contactor
(B) Rotating biological contactors
(C) High rate bio filters
(D) Conventional bio filters

21. Which of the following is a natural method of waste water treatment?

(A) Chemical method
(B) Physical method
(C) Water hyacinth pond
(D) Rotating biological contactors

22. Which of the following gases is toxic to methanogenic bacteria?

(A) Carbon
(B) Sulphur
(C) Nitrogen
(D) Oxygen

23. ………….. is the contaminant that adheres to the sorbing material.

(A) Sorbate
(B) Sorbent
(C) Sorption
(D) Adsorbent

24. Adsorption process is due to …………… force.

(A) Gravitational
(B) Van der Waal
(C) Henry
(D) Bohr

25. …………… emission is cited as an issue from incineration.

   (A) Carbon
   (B) Dioxin
   (C) Sulphur
   (D) Nitrogen

26. The amount of chlorine available in water after disinfection is called

   (A) Residual chlorine
   (B) Free chlorine
   (C) Free available chlorine
   (D) Combined available chlorine

27. Aeration of water is done to remove

   (A) suspended impurities
   (B) floating impurities
   (C) dissolved salts
   (D) dissolved gases

28. The average domestic water consumption per capita per day for an Indian city as per IS:1172-1971 is

   (A) 85 litres
   (B) 100 litres
   (C) 135 litres
   (D) 200 litres

29. More than 50 ppm of Nitrates in water leads to a disease called

   (A) Typhoid
   (B) Methemoglobinemia
   (C) Gastroenteritis
   (D) Haemophilia

30. The most commonly used non-empirical formula for calculating the flow velocity of underground water is

   (A) Hazen's formula
   (B) Bernoulli's equation
   (C) Darcy's formula
   (D) Lacy's formula

31. The type of trap commonly used for receiving waste water from kitchen sinks and bathrooms is

   (A) Gully trap
   (B) Intercepting trap
   (C) Reverse trap
   (D) Floor trap

32. The purpose of providing a surge chamber in a water conveyance system is to

   (A) store water
   (B) increase the velocity in a pipeline
   (C) prevent overflow
   (D) absorb sudden rises of pressure

33. The dimensionless number that signifies the ratio of inertial forces to viscous forces is

   (A) Prandtl number
   (B) Mach number
   (C) Reynolds number
   (D) Sherwood number

34. A non Newtonian fluid that behaves as a rigid body at low stresses but flows as a viscous fluid at high stress is

   (A) Bingham plastic
   (B) Pseudoplastic
   (C) Rheopectic
   (D) Dilatant

35. The components of velocity along the x-axis and the y-axis are $u = ax^2 + bxy + cy^2$ and $v = cxy$ respectively in a two-dimensional flow. Under what condition will the flow field be continuous?

   (A) $a + c = 0$
   (B) $2a + c = 0$
   (C) $2b + c = 0$
   (D) $b + c = 0$

36. The type of motion exhibited by a fluid element that moves from one position to another and undergoes change in its dimensions is

   (A) Rotation
   (B) Angular Deformation
   (C) Linear Deformation
   (D) Linear Translation

37.   …………… is the flow of a viscous fluid in the space between two surfaces, one of which is moving tangentially relative to the other.

   (A) Poiseuille flow
   (B) Couette flow
   (C) Froude flow
   (D) Rotational flow

38.   A submerged orifice 1 metre wide has height of water 3 metres from the bottom of the orifice and 2 metres from the top of the orifice. The difference in water levels on both sides of the orifice is 1 metre. What is the discharge through the orifice if $C_d = 0.6$?

   (A) $6.5 \, m^3/sec$
   (B) $8.5 \, m^3/sec$
   (C) $3.9 \, m^3/sec$
   (D) $2.6 \, m^3/sec$

39.   Which of the following can be used to predict pressure drop for fully developed flow in a circular pipe?

   (A) Moody chart
   (B) Mollier chart
   (C) Reynolds chart
   (D) Scatter chart

40.   Which of the following is **NOT** the reason for minor head loses in a pipe?

   (A) Valves
   (B) Bends
   (C) Friction
   (D) Tees

41.   Wrought iron contains Carbon up to

   (A) 0.25%
   (B) 1.0%
   (C) 1.5%
   (D) 2.0%

42.   In the method of condensation polymerization

   (A) low-molecular substances are removed from the high molecular substance
   (B) the reaction proceeds with an evolution of ammonia
   (C) the reaction proceeds with an evolution of hydrogen chloride
   (D) All of the above

43. Galvanising means covering iron with a thin coat of

    (A) tin
    (B) zinc
    (C) glaze
    (D) coal tar

44. Two fluids are flowing through two similar pipes of the same diameter. The Reynolds number is same. For the same flow rate if the viscosity of a fluid is reduced to half the value of the first fluid, the pressure drop will

    (A) increase
    (B) decrease
    (C) remain unchanged
    (D) data insufficient to predict relative pressure drop

45. Which of the following is the most common pump for pumping either raw sewage or sludge?

    (A) Electromagnetic pump
    (B) Centrifugal pump
    (C) Reciprocating pump
    (D) Gear pump

46. Newton's law of viscosity relates the

    (A) shear stress and velocity
    (B) velocity gradient and pressure intensity
    (C) shear stress and rate of angular deformation in a fluid
    (D) pressure gradient and rate of angular deformation

47. Equivalent length of a pipe fitting is

    (A) dependent on Reynolds number
    (B) independent of Reynolds number
    (C) dependent on the length of the pipe
    (D) None of the above

48. A floating/submerged body is always stable, if its center of gravity

    (A) lies above its center of buoyancy
    (B) and center of buoyancy coincides
    (C) lies below its center of buoyancy
    (D) lies above its metacenter

49. With increase in the ratio of orifice diameter to pipe diameter in case of an orificemeter, the overall pressure loss

    (A) remains constant
    (B) increases
    (C) decreases
    (D) increases linearly

50. Reciprocating pumps are not able to compete with the centrifugal pump for industrial use, mainly because these pumps have

    (A) very low speeds
    (B) smaller discharge
    (C) high vibrations
    (D) higher capital and maintenance cost

51. The most suitable equipment for removing the fine dust particle (< 1 micron diameter) from air below its dew point will be

    (A) bag filter
    (B) electrostatic precipitator
    (C) cyclone separator
    (D) wet scrubber

52. For a given particle size the collection efficiency of a cyclone separator

    (A) will be increased at higher pressure drops
    (B) will be decreased at higher pressure drops
    (C) will not be affected by changing pressure drop
    (D) None of the above

53. Gas temperature is an important consideration in the design of fabric filter because it affects

    (A) the gas viscosity
    (B) the gas density
    (C) the selection of fabric
    (D) All of the above

54. Acid rain is a result of

    (A) excess amount CO_2
    (B) excess amount of NH_3
    (C) excess amount of SO_2 and NO_2
    (D) excess carbon monoxide

55. A group of individuals of a plant or animal species, inhabiting a given area is called

   (A) Biome
   (B) Population
   (C) Ecosystem
   (D) Community

56. The organisms that live on organic materials and absorb organic molecules by digesting enzymes are called

   (A) Decomposers
   (B) Producers
   (C) Carnivores
   (D) Omnivores

57. Fish die in water polluted by sewage due to

   (A) pathogen
   (B) reduction in oxygen
   (C) clogging of gills
   (D) foul smell

58. Algal bloom results in

   (A) Global warming
   (B) Salination
   (C) Eutrophication
   (D) Biomagnification

59. Soap and detergents are the source of organic pollutants like

   (A) glycerol
   (B) polyphosphates
   (C) sulphonated hydrocarbons
   (D) All of the above

60. An association between two individuals or populations where both are benefitted and where neither can survive without the other is

   (A) competition
   (B) commensalism
   (C) mutualism
   (D) protocoperation

61. A water drop is spherical in shape due to

(A) Viscosity
(B) Capillarity
(C) Surface tension
(D) Reflection

62. What will be the order of the reaction if the rate of the reaction is equal to the rate constant?

(A) Zero order
(B) First order
(C) Second order
(D) Third order

63. Amount of solute dissolved in unit volume is called

(A) mass
(B) concentration
(C) molality
(D) molarity

64. Unit of conductivity is

(A) ohm^{-1}
(B) ohm
(C) N
(D) Nm

65. Which of the following molecules is **NOT** linked by covalent bond?

(A) Water
(B) Common salt
(C) Ammonia
(D) Methane

66. Which one of the following is optically active substance?

(A) Water
(B) Sodium chloride
(C) Sucrose
(D) Ethanol

67. A dilatometer is an apparatus used to measure

    (A) Transition temperature
    (B) Triple point
    (C) Eutectic point
    (D) All of the above

68. The reaction rate constant may be defined as the rate of the reaction when the concentration of each reactant is

    (A) zero
    (B) unity
    (C) doubled the initial concentration
    (D) infinite

69. Reaction corresponding to stoichiometric equation is called

    (A) Non-elementary
    (B) Elementary
    (C) Heterogeneous
    (D) Homogeneous

70. Which of the following forces **DO NOT** cause rotation?

    (A) Non-parallel
    (B) Non-concurrent
    (C) Parallel
    (D) Concurrent

71. In which direction does the normal forces act in the free body diagrams for equilibrium?

    (A) Vertically upward
    (B) Vertically downward
    (C) Horizontally right
    (D) Horizontally left

72. Blast furnace slag is the mixture of

    (A) slaked lime and calcium silicate
    (B) aluminium silicate and hydrated lime
    (C) calcium silicate and aluminium silicate
    (D) silica, alumina and calcium oxide

73. What is the principle on which an optical fibre works?

    (A) Total internal reflection
    (B) Faraday's law of induction
    (C) Doppler Effect
    (D) Hooke's law

74. Which of the following is an example of top-down approach for the preparation of nanomaterials?

    (A) Gas phase agglomeration
    (B) Molecular self-assembly
    (C) Mechanical grinding
    (D) Molecular beam epitaxy

75. What kind of behavior does phase rule identify?

    (A) Molecular behavior
    (B) Linear behavior
    (C) Curvic behavior
    (D) Atomic behavior

76. The purpose of adding gypsum after calcination in the manufacture of Portland cement is

    (A) to prevent flash setting
    (B) to improve the quality of cement
    (C) to increase the lime saturation factor
    (D) None of the above

77. Which of the following statements is true for a chiral molecule?

    (A) They show geometrical isomerism
    (B) They are superimposable on their mirror images
    (C) They are not superimposable on their mirror images
    (D) They are unstable molecules

78. The number of molecules in a conduction band

    (A) increases with fall in temperature
    (B) decreases with a rise in temperature
    (C) increases with a rise in temperature
    (D) does not depend upon the temperature

79. Ozone is formed by the …………… dissociation of molecular oxygen into individual oxygen atoms.

    (A) photochemical
    (B) thermochemical
    (C) thermal
    (D) ionic

80. For amorphous and semi-crystalline polymers, mixing leads to the formation of

    (A) mechanical blends
    (B) solution-cast blends
    (C) latex blends
    (D) chemical blends

81. The steam distillation process is used to separate substances which are

    (A) steam volatile
    (B) steam volatile and immiscible with water
    (C) steam volatile and miscible with water
    (D) All of the above

82. Which of the following is **NOT** an example of a natural biodegradable polymer?

    (A) Collagen
    (B) Polyvinyl alcohol
    (C) Lignin
    (D) Natural rubber

83. Electric potential is a

    (A) Vector quantity
    (B) Tensor quantity
    (C) Scalar quantity
    (D) Dimensionless quantity

84. A bulb has a power of 200 W. What is the energy dissipated by it in 5 minutes?

    (A) 6 kJ
    (B) 12 kJ
    (C) 1 kJ
    (D) 60 kJ

85. Which among the following in a circuit can improve its power factor?

   (A) Inductor
   (B) Capacitor
   (C) Resistor
   (D) Switch

86. Find the length of a conductor which is moving with a velocity 0.4 m/s in a magnetic field of 8T, inducing an emf of 20V if magnetic field, velocity and length of conductor are mutually perpendicular to each other.

   (A) 50 m
   (B) 5 m
   (C) 6.25 m
   (D) 0.5 m

87. If the resonant frequency in a series RLC circuit is 50 kHz along with a bandwidth of 1 kHz, find the quality factor.

   (A) 5
   (B) 50
   (C) 100
   (D) 500

88. Find the value of the instantaneous voltage if the resistance is 2 ohm and the instantaneous current in the circuit is 5 A.

   (A) 10 V
   (B) 2 V
   (C) 5 V
   (D) 2.5 V

89. Calculate the current in an inductor if the energy stored is 160 J and the inductance is 20 H.

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

90. When inductances are connected in series, the equivalent inductance is …………… the largest individual inductance.

   (A) greater than
   (B) less than
   (C) equal to
   (D) not related to

91. Which is the first zone of purification in a sand bed?

   (A) Heterotrophic zone
   (B) Schmutzdecke zone
   (C) Electrolytic zone
   (D) Autotrophic zone

92. Which type of particulate is condensed form of vapours?

   (A) Mist
   (B) Dust
   (C) Fumes
   (D) Smoke

93. What does the term "liming" mean?

   (A) Application of magnesium and calcium rich substances to soil
   (B) Erosion of calcium carbonate (lime) zones in soil
   (C) Excessive growth of lemon trees in acid rain prone regions
   (D) None of the above

94. Formation of aerosols by nucleation produces particles of size

   (A) less than 0.1 micron
   (B) greater than 0.1 micron
   (C) less than 1 micron
   (D) greater than 1 micron

95. What is the significance of the ionosphere?

   (A) Aviation movements
   (B) High frequency radio transmission
   (C) Regulates weather
   (D) All of the above

96. Which of the following is the largest sink for carbon dioxide gas?

   (A) Forests
   (B) Grasslands
   (C) Ice sheets
   (D) Oceans

97. The Global Warming Potential of a gas depends on

   (A) absorption capability of IR radiations
   (B) atmospheric life-time
   (C) range of IR wavelengths it can absorb
   (D) All of the above

98. Which layer of the atmosphere is responsible for aurora formation?

   (A) Ozone layer
   (B) Stratosphere
   (C) Ionosphere
   (D) Exosphere

99. Which is the most abundant greenhouse gas in the atmosphere?

   (A) Carbon dioxide
   (B) Water vapour
   (C) Methane
   (D) Nitrogen

100. The Montreal Protocol bans the production of which of the following chemical substances?

   (A) Chlorine, Bromine, CFCs, Freons
   (B) Carbon tetrachloride, Halons, Trichloroethane, CFCs
   (C) CFCs, Bromine, Halons, Freons
   (D) CFCs, Halons, Freons

101. Which material is used in contact filters for the removal of fluorides?

   (A) Calcium phosphate
   (B) Copper sulfate
   (C) Synthetic tri-calcium phosphate
   (D) Bone charcoal

102. Which of the following method is **NOT** used for desalination?

   (A) Distillation
   (B) Coagulation
   (C) Reverse osmosis
   (D) Freezing

103. A diffuser pump is also known as

   (A) Reciprocating pump
   (B) Volute pump
   (C) Turbine pump
   (D) Rotary pump

104. Which type of pump is specifically used for shallow wells?

   (A) Hand pump
   (B) Reciprocating pump
   (C) Jet pump
   (D) Centrifugal pump

105. The installed capacity of the pump **DOES NOT** depend on

   (A) The maximum rate of hourly demand
   (B) Balancing storage
   (C) Power of pump
   (D) Operation schedule

106. The enlarged end of a cast iron pipe is called

   (A) Lead
   (B) Socket
   (C) Hemp
   (D) Spigot end

107. Which of the following is known as Shut off valve?

   (A) Air relief valve
   (B) Sluice valve
   (C) Pressure relief valve
   (D) Altitude valve

108. Pipe corrosion can be minimized by

   (A) removal of copper sulfate
   (B) addition of calcium carbonate
   (C) addition of carbon dioxide
   (D) removal of dissolved oxygen

109. Which device is used to measure velocity for low water flows?

   (A) Water meter
   (B) Inferential meter
   (C) Globe valve
   (D) Displacement meter

110. Which of the following has a maximum peaking factor?

   (A) Domestic sewer
   (B) Branch sewer
   (C) Main sewer
   (D) Trunk sewer

111. Which of the following has a minimum Manning's coefficient in terms of fair interior surface?

   (A) Plastic smooths
   (B) Asbestos cement
   (C) Brick
   (D) Cement concrete

112. The hydraulic mean depth of a circular section of diameter D running full is

   (A) D
   (B) $\dfrac{D}{2}$
   (C) D^2
   (D) $\dfrac{D}{4}$

113. The lower portion of Egg-shaped sewer is known as

   (A) Roof
   (B) Invert
   (C) Arch
   (D) Wedge

114. The crown corrosion takes place due to formation of

   (A) CO_2
   (B) H_2O
   (C) H_2S
   (D) HCl

115. The manhole in which vertical pipe is used for the transfer of sewage from branch to main sewer is

   (A) Deep manhole
   (B) Ramp
   (C) Drop manhole
   (D) Normal manhole

116. Which of the following is the most effective in preventing the overloading of sewage treatment plants?

   (A) Street inlets
   (B) Overflow weir
   (C) Siphon valley
   (D) Leap weir

117. Which color indicates the fresh sewage?

   (A) Pink
   (B) Red
   (C) Black
   (D) Grey

118. The presence of which of the following in sewage indicates nitrogen content before decomposition of sewage?

   (A) Nitrites
   (B) Nitrates
   (C) Free ammonia
   (D) Albuminoid nitrogen

119. In a U-tube manometer, one end is open to the atmosphere, and the other end attached to a pressurized gas of gauge pressure 40 kPa. The height of the fluid column in the atmospheric side is 60 cm, and that on the gas side is 30 cm. The manometer fluid used is

   (A) water
   (B) liquid ammonia
   (C) oil
   (D) mercury

120. The decomposition of nitrogenous organic matter in the absence of oxygen gives

   (A) Nitrites and water
   (B) Nitrogen, ammonia and organic acids
   (C) Nitrates and ammonia
   (D) Carbon dioxide and water

121. 5 days BOD at 20°C is …………… of total demand.

   (A) 20%
   (B) 47%
   (C) 68%
   (D) 100%

122. In which pollution zone of the river, growth of algae reappear?

   (A) Zone of degradation
   (B) Zone of recovery
   (C) Zone of active decomposition
   (D) Zone of clean water

123. The uppermost zone in a lake is called

   (A) Euphotic zone
   (B) Benthic zone
   (C) Littoral zone
   (D) Climate zone

124. The depth of Euphotic zone is measured by

   (A) Calorimeter
   (B) Turbidity meter
   (C) Secchi disk
   (D) Radar

125. In which form of solute stabilization, hydrogen sulfide in the effluent is oxidized into sulphate?

    (A) Chlorination
    (B) Liming
    (C) Re-carbonation
    (D) Super-chlorination

126. Flocculation of iron from water by the addition of lime is an example of

    (A) Chemical coagulation
    (B) Chemical precipitation
    (C) Ion exchange
    (D) Adsorption

127. Screens are inclined to the direction of flow of the wastewater to

    (A) increase the flow velocity
    (B) increase the opening area
    (C) decrease the flow velocity
    (D) increase the head loss

128. Which of the following has the minimum detention period?

    (A) Grit chamber
    (B) Sedimentation tank
    (C) Oxidation ditch
    (D) Oxidation pond

129. The settling velocity of spherical particle is given by

    (A) Darcy Weisbach equation
    (B) Hazen and William equation
    (C) Stokes equation
    (D) Bernoulli's equation

130. The deviation from the ideal flow of wastewater in the sedimentation tank causes

   (A) whirlpool
   (B) short circuiting
   (C) increase in tank efficiency
   (D) coagulation

131. The maximum size of filter media of a percolating filter is

   (A) 10 mm
   (B) 25 mm
   (C) 60 mm
   (D) 75 mm

132. The breaking of the biomass from the slime layer in conventional trickling filter is called

   (A) sloughing
   (B) carbonation
   (C) biological magnification
   (D) weathering

133. Which of the following is the cause of rising sludge?

   (A) Sedimentation
   (B) Denitrification
   (C) Chlorination
   (D) Flocculation

134. Simplex aerator is a type of

   (A) Combined aerator
   (B) Mechanical aerator
   (C) Ridge and furrow type aerator
   (D) Spiral flow type aerator

135. Which of the following is **NOT** correct about aerobic digestion in the sludge digestion process?

   (A) It has a low capital cost
   (B) It is easier to manage
   (C) It has high residual energy
   (D) It decreases the BOD

136. Which of the following activated sludge process has minimum food to microorganism ratio?

   (A) Extended aeration
   (B) Step aeration
   (C) Modified aeration
   (D) Conventional

137. Which of the following operations is **NOT** employed in sludge thickening?

   (A) Gravity thickening
   (B) Vacuum filter
   (C) Air flotation
   (D) Centrifugation

138. Which of the following is an anaerobic process for treating sewage?

   (A) Oxidation pond
   (B) Imhoff tank
   (C) Oxidation ditch
   (D) Rotating Biological Contactors

139. The disposal of sewage from the septic tank is done by which of the following?

   (A) Clarifier
   (B) Lamp holes
   (C) Aerated lagoon
   (D) Soak pit

140. The process of burning of municipal solid waste in presence of excess oxygen at high temperature is

   (A) Incineration
   (B) Pyrolysis
   (C) Land filing
   (D) Gasification

141. Which of the following is a biological method of disposal of municipal solid waste?

   (A) Land fills
   (B) Shredding
   (C) Pulverization
   (D) Composting

142. The most commonly used semiconductor is

   (A) Germanium
   (B) Silicon
   (C) Carbon
   (D) Sulphur

143. Under normal conditions a diode conducts current when it is

   (A) reverse biased
   (B) forward biased
   (C) avalanched
   (D) saturated

144. When a multistage amplifier is to amplify d.c. signal, then one must use

   (A) RC coupling
   (B) Transformer coupling
   (C) Direct coupling
   (D) None of the above

145. Which one of the following is **NOT** necessarily the advantage of D.C. motors over A.C. motors?

   (A) Low cost
   (B) Wide speed range
   (C) Stability
   (D) High starting torque

146. Cells are connected in parallel to

   (A) increase the efficiency
   (B) increase the current capacity
   (C) increase the voltage output
   (D) increase the internal resistance

147. ……………. is the first program run on a computer when the computer boots up.

   (A) System software
   (B) Operating system
   (C) System operations
   (D) None of the above

148. A series of instructions that tells a computer what to do and how to do is called a

   (A) Program
   (B) Command
   (C) User response
   (D) Processor

149. Substances whose specific resistance abruptly decreases at very low temperature are called

   (A) Insulators
   (B) Conductors
   (C) Semiconductors
   (D) Superconductors

150. In a control system the output of the controller is given to

   (A) Final control element
   (B) Amplifier
   (C) Comparator
   (D) Sensor

FINAL ANSWER KEY

Subject Name: ENGINEERING SCIENCE

SI No.	Key	SI No.	Key	SI No.	Key	SI No.	Key	SI No.	Key
1	C	31	A	61	C	91	B	121	C
2	A	32	D	62	A	92	C	122	B
3	D	33	C	63	B	93	A	123	A
4	C	34	A	64	A	94	A	124	C
5	A	35	C	65	B	95	B	125	A
6	A	36	C	66	C	96	D	126	B
7	C	37	B	67	A	97	D	127	C
8	A	38	C	68	B	98	C	128	A
9	C	39	A	69	B	99	B	129	C
10	B	40	C	70	D	100	B	130	B
11	C	41	A	71	A	101	C	131	D
12	A	42	D	72	C	102	B	132	A
13	D	43	B	73	A	103	C	133	B
14	C	44	B	74	C	104	A	134	B
15	D	45	C	75	B	105	C	135	C
16	B	46	C	76	A	106	B	136	A
17	A	47	A	77	C	107	B	137	B
18	D	48	C	78	C	108	D	138	B
19	A	49	A	79	A	109	D	139	D
20	A	50	D	80	A	110	A	140	A
21	C	51	B	81	B	111	A	141	D
22	D	52	A	82	B	112	D	142	B
23	A	53	C	83	C	113	B	143	B
24	B	54	C	84	D	114	C	144	C
25	B	55	B	85	B	115	C	145	A
26	A	56	A	86	C	116	B	146	B
27	D	57	B	87	B	117	D	147	B
28	C	58	C	88	A	118	D	148	A
29	B	59	D	89	D	119	D	149	D
30	C	60	C	90	A	120	B	150	A