

ENGINEERING SCIENCE

1. The yield of an open well can be computed by conducting
 - (A) Porosity test
 - (B) Field permeability test
 - (C) Recuperation test
 - (D) Equilibrium test
2. The valve that regulates water in an outflow pipe of an overhead reservoir is
 - (A) Gate valve
 - (B) Reflux valve
 - (C) Scour valve
 - (D) Air-relief valve
3. Very fine suspended and colloidal particles are removed from water by a process called
 - (A) Softening
 - (B) Coagulation
 - (C) Disinfection
 - (D) Plain-sedimentation
4. 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
5. Aeration of water is done to remove
 - (A) Suspended impurities
 - (B) Floating impurities
 - (C) Dissolved salts
 - (D) Dissolved gases
6. The average domestic water consumption per capita per day for an Indian city is taken as as per IS:1172-1963.
 - (A) 85 litres
 - (B) 100 litres
 - (C) 135 litres
 - (D) 200 litres

7. Nitrates more than 50 ppm in water leads to a disease called
- (A) Typhoid
 - (B) Methemoglobinemia
 - (C) Gastroenteritis
 - (D) COVID-19
8. The product of Young's modulus and moment of inertia is known as
- (A) Modulus of rigidity
 - (B) Bulk modulus
 - (C) Flexural rigidity
 - (D) Torsional rigidity
9. When a body of mass m attains a velocity v from rest in time t , then the kinetic energy of translation is
- (A) mv^2
 - (B) mgv^2
 - (C) $0.5 mv^2$
 - (D) $0.5 mgv^2$
10. Mass moment of inertia of a uniform thin rod of mass ' M ' and length ' l ' about its mid-point and perpendicular to its length is
- (A) $(2/3)Ml^2$
 - (B) $(1/3)Ml^2$
 - (C) $(3/4)Ml^2$
 - (D) $(4/3)Ml^2$
11. When a body is subjected to a direct tensile stress (p) in one plane, then maximum normal stress occurs at a section inclined at to the normal of the section.
- (A) 0°
 - (B) 30°
 - (C) 45°
 - (D) 90°

12. The presence of Coliform Bacteria in water is an indication of
- (A) Radioactive wastes
 - (B) Excess fertilizer
 - (C) Decaying animals and plants
 - (D) Human feces
13. Which of the following sanitizers is a surface active agent?
- (A) Meta phosphate
 - (B) Tetra phosphate
 - (C) Teepol
 - (D) None of the above
14. Which of the following is found in the intermediate zone of a waste stabilisation pond?
- (A) Aerobic bacteria
 - (B) Algae
 - (C) Organic solids
 - (D) Facultative bacteria
15. is formed when temporary hard water is boiled.
- (A) Calcium bicarbonate
 - (B) Carbon dioxide
 - (C) Hydrogen chloride
 - (D) Calcium sulphite
16. 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
17. 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

18. 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
19. 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
20. 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) Rheoplectic
 - (D) Dilatant
21. 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) $b + c = 0$
22. 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

23. 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
24. 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) $6.5 \text{ m}^3/\text{sec}$
 - (B) $8.5 \text{ m}^3/\text{sec}$
 - (C) $3.9 \text{ m}^3/\text{sec}$
 - (D) $2.6 \text{ m}^3/\text{sec}$
25. 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
26. Which of the following is not the reason for minor head losses in a pipe?
- (A) Valves
 - (B) Bends
 - (C) Friction
 - (D) Tees
27. Water flows through a pipe of 0.5 m diameter and 9 km length at a velocity of 1.09 m/sec. What is the head loss due to friction if the coefficient of friction is 0.005?
- (A) 21.8 m
 - (B) 26.5 m
 - (C) 15.5 m
 - (D) 32.8 m

28. The line which gives the sum of pressure head and datum head of a flowing fluid in a pipe with respect to some reference line is called
- (A) Total energy gradient line
 - (B) Isotropic line
 - (C) Hydraulic gradient line
 - (D) Isobaric line
29. Which nozzle is used to accelerate a hot, pressurized gas passing through it to a higher supersonic speed in the thrust direction?
- (A) Pascal nozzle
 - (B) de Laval' nozzle
 - (C) Bernouille's nozzle
 - (D) Toricelli's nozzle
30. A rectangular earthen channel is 1.2 m wide and 1 m deep. It has a longitudinal slope of 1 in 1000. The hydraulic mean depth of the channel will be
- (A) 0.55 m
 - (B) 1 m
 - (C) 0.68 m
 - (D) 0.37 m
31. Which of the following does not belong to the category of grey water?
- (A) Wastewater from bathroom sinks
 - (B) Wastewater from showers and tubs
 - (C) Wastewater from washing machines
 - (D) Wastewater from toilet flushing
32. Identify the instrument used to detect and measure odour dilution
- (A) Chromatography
 - (B) Olfactometer
 - (C) Spectrophotometer
 - (D) Anemometer

33. Which of the following is not an advantage of circular sewer?
- (A) A circular section gives the least perimeter for a given area, and therefore has the maximum hydraulic mean depth for running full and half full conditions
 - (B) It is the most economical section since it requires minimum quantity of material for its construction
 - (C) The section has uniform curvature and hence prevents the possibility of deposits anywhere within the section
 - (D) Circular sewers are suitable where variation in discharge of sewage is very large
34. allow storm water or wastewater sewers to pass under obstructions such as rivers.
- (A) Lateral sewer
 - (B) Outfall sewer
 - (C) Depressed sewer
 - (D) Main sewer
35. When is present in water at a concentration greater than 0.3 ppm, the water will have a brown tinge.
- (A) Manganese
 - (B) Magnesium
 - (C) Iron
 - (D) Zinc
36. Which of the following processes adds dissolved oxygen to a natural stream?
- (A) Oxidation of organic matter
 - (B) Photosynthesis
 - (C) Nitrification
 - (D) Respiration by aquatic life
37. The process of overgrowth of plants and algae in lakes is known as
- (A) Photosynthesis
 - (B) Eutrophication
 - (C) Respiration
 - (D) Transpiration

38. One of the reasons for rising sludge in the secondary clarifiers of activated sludge plants is
- (A) Sedimentation
 - (B) Coagulation
 - (C) Flocculation
 - (D) Denitrification
39. Which of the following activated sludge process has the maximum BOD removal efficiency?
- (A) Extended aeration
 - (B) Step aeration
 - (C) Modified aeration
 - (D) Conventional
40. Settling of particles takes place by the contact of impurities present in wastewater with each other in settling.
- (A) Flocculent settling
 - (B) Discrete settling
 - (C) Compression settling
 - (D) Hindered settling
41. Which of the following statements is not true for a rapid sand filter?
- (A) High filter rate (4000 – 12000 litres per hour per square metre of surface), small land requirements
 - (B) Effective in removing bacteria, viruses, fluoride, arsenic, salts, odour and organic matter
 - (C) Backwashing takes only a few minutes and filters can be put back into operation instantly
 - (D) Highly effective for removal of turbidity (usually < 0.1-1 NTU)
42. Which of the following aerobic processes is based on the symbiotic action between algae and bacteria?
- (A) Oxidation ditch
 - (B) Rotating biological contactor
 - (C) Oxidation pond
 - (D) Membrane bioreactor

43. Temperature inversion occurs in
- (A) Stratosphere
 - (B) Troposphere
 - (C) Ionosphere
 - (D) Exosphere
44. Which of the following is not a secondary pollutant?
- (A) Ozone
 - (B) Peroxyacyl nitrates
 - (C) Nitric acid
 - (D) Sulphur dioxide
45. What is the emf if the current changes from 6A to 4A in 2 seconds and the inductance is 8H?
- (A) 8 V
 - (B) 2 V
 - (C) 4 V
 - (D) 6 V
46. What is the current leaving a parallel circuit if the currents in the three branches of the circuit are 5A, 6A and 7A?
- (A) 7 A
 - (B) 18 A
 - (C) 11 A
 - (D) 5 A
47. A RC circuit consists of a 100microF capacitor in series with a 80ohm resistor. What is the time constant?
- (A) 125 sec
 - (B) 0.008 sec
 - (C) 0.01 sec
 - (D) 12.5 sec
48. The relative permeability of a substance is less than that of free space. The substance will be
- (A) Ferromagnetic
 - (B) Paramagnetic
 - (C) Diamagnetic
 - (D) Both paramagnetic and ferromagnetic

49. is the ability of a material to allow the passage of magnetic lines of flux.
- (A) Permeance
 - (B) Reluctance
 - (C) Resistance
 - (D) Conductance
50. An inductor with a ferromagnetic core has an inductance of 2000 H. The current changes from 5A to 6A and the flux changes from 760 to 800 Wb. Calculate the number of turns.
- (A) 100
 - (B) 200
 - (C) 300
 - (D) 50
51. The current flowing in the inductive circuit is 2A in 4s. The inductance is 15H. What will be the power in the circuit?
- (A) 120 W
 - (B) 60 W
 - (C) 30 W
 - (D) 240 W
52. Excavation is to be carried out on a moderately firm ground for a depth of 1.5 m. Which arrangement will you use to prevent the sleep of earth in foundation trenches?
- (A) Vertical sheeting
 - (B) Sheet piling
 - (C) Stay bracing
 - (D) Runner
53. is a temporary framework used in construction demolition, maintenance or repair works.
- (A) Shoring
 - (B) Grouting
 - (C) Underpinning
 - (D) Scaffolding

54. Which of the following compounds tend to retard the setting of cement and discourage the strength of concrete in early stages?
- (A) Chlorides
 - (B) Sulphates
 - (C) Nitrates
 - (D) Phosphates
55. "Loudness which corresponds to the magnitude of the sensation is proportional to the logarithm of the intensity of the sound". Which of the following laws governs this statement?
- (A) Weber and Fechner's law
 - (B) Huygens-Fresnel law
 - (C) Loretz law
 - (D) Beer-Lambert law
56. The total set of greenhouse gas emissions caused by an individual, event, organisation or product is known as
- (A) Ecological footprint
 - (B) Carbon footprint
 - (C) Ecological pyramid
 - (D) Energy pyramid
57. The loss of in wastewater may make it septic.
- (A) Organic compounds
 - (B) Nitrates
 - (C) Dissolved oxygen
 - (D) Carbon content
58. Which of the following is not a 'waste-to-energy conversion' technique for solid waste?
- (A) Incineration
 - (B) Gasification
 - (C) Pyrolysis
 - (D) Composting
59. The number of steps involved in sulphur cycle is
- (A) Six
 - (B) Five
 - (C) Eight
 - (D) Three

60. Which of the following microorganism performs nitrification in the natural environment?
- (A) Diazotrophs
 - (B) Cyanobacteria
 - (C) Nitrobacter
 - (D) Nitrosomonas
61. Hot spots of biodiversity have
- (A) high density of hot springs
 - (B) high density of biodiversity
 - (C) high density of endangered species only
 - (D) None of the above
62. Cultivation, and harvesting of timber is permitted in if they do not interfere with the project.
- (A) National parks
 - (B) Biosphere reserves
 - (C) Sanctuaries
 - (D) Protected areas
63. Which of the following is not a design consideration for highways?
- (A) Sight distance
 - (B) Cross section
 - (C) Settlement
 - (D) None of the above
64. An environmental impact assessment carried out for a policy or programme is known as
- (A) Strategic EIA
 - (B) Cumulative EIA
 - (C) Project EIA
 - (D) Rapid EIA
65. is a system where water is distributed under low pressure through the piped network in a pre-determined pattern and applied to each plant.
- (A) Micro irrigation
 - (B) Nano irrigation
 - (C) Petite irrigation
 - (D) Flood irrigation

66. Which of the following weirs has less head loss?
- (A) Ogee shaped
 - (B) Broad crested
 - (C) Sharp crested
 - (D) Narrow crested
67. Earth's curvature is considered in survey.
- (A) Plane
 - (B) Basement
 - (C) Geodetic
 - (D) None of the above
68. The value of is zero at point of contraflexure.
- (A) Shear force
 - (B) Bending moment
 - (C) Strain energy
 - (D) Centre of gravity
69. support offers resistance against vertical and horizontal moments.
- (A) Hinged
 - (B) Simple
 - (C) Fixed
 - (D) Inclined
70. is the phenomenon of slow growing strain under a stress for a period of time.
- (A) Yielding
 - (B) Breaking
 - (C) Creeping
 - (D) None of the above
71. The process of finding area of plane curves is often called
- (A) Quadrature
 - (B) Revolution
 - (C) Convolution
 - (D) Mapping

72. The probability of hitting a target is 0.3. What is the mean and variance?
- (A) 0.7, 0.21
 - (B) 0.3, 0.21
 - (C) 0.4, 0.75
 - (D) 0.1, 0.75
73. is the dot product of two vectors A and B.
- (A) Cartesian product
 - (B) Outer product
 - (C) Inner product
 - (D) Final product
74.in columns is a type of mechanical failure which occurs in materials due to the application of compressive load.
- (A) Sagging
 - (B) Creeping
 - (C) Melting
 - (D) Buckling
75. The number of shear stress components that can act on a 3-D object is
- (A) 3
 - (B) 6
 - (C) 9
 - (D) 2
76. A transformer has a primary current of 300 mA rms and is plugged into a 120 V rms source. The secondary is providing 20 V across a 12 Ω load. What is the efficiency of the transformer?
- (A) 92%
 - (B) 80%
 - (C) 98%
 - (D) 85%
77. is the distance travelled by a signal's energy in the time it takes for one cycle to occur.
- (A) Frequency
 - (B) Amplitude
 - (C) Wavelength
 - (D) Period

78. The majority carriers in a “p” type material is
- (A) Dopants
 - (B) Electrons
 - (C) Holes
 - (D) Bonds
79. are found in the upper part of an aquatic ecosystem.
- (A) Nektons
 - (B) Benthos
 - (C) Arthropods
 - (D) Plankton
80. The tendency of biological systems to resist change is called
- (A) Heliotropism
 - (B) Homeostasis
 - (C) Home tropism
 - (D) Evolution
81. is considered as a common indicator organism of sewage pollution in a water body.
- (A) Escherichia coli
 - (B) Eicchornia Crassipes
 - (C) Lemna paucicostata
 - (D) Entamoeba histolytica
82. The concentration of DDT as it travels along the food chain.
- (A) decreases
 - (B) remains constant
 - (C) increases
 - (D) fluctuates randomly
83. acts as an absorbing barrier for ultraviolet radiations in the stratosphere.
- (A) Argon
 - (B) Ozone
 - (C) Oxygen
 - (D) Fluorocarbon

84. The international treaty that aims at the reduction of ozone depleting substances
- (A) Kyoto protocol
 - (B) Montreal protocol
 - (C) Basel convention
 - (D) Ramsar treaty
85. Which of the following is the most harmful environmental pollutant?
- (A) Animal waste
 - (B) Sewage
 - (C) Nutrients in excess
 - (D) Non-biodegradable chemicals
86. The concentration of many harmful pollutants has been found to increase in higher trophic levels. This phenomenon is known as
- (A) Biomagnification
 - (B) Eutrophication
 - (C) Biodegradation
 - (D) Bioremediation
87. Fish death occurs in water bodies contaminated by sewage. The main reason for such occurrences is
- (A) Pathogen
 - (B) Reduction in oxygen concentration
 - (C) Foul smell
 - (D) Clogging of grills by silt
88. Which of the following is a non-ionizing radiation with specific biological effects?
- (A) Gamma rays
 - (B) X-rays
 - (C) UV radiation
 - (D) Beta rays
89. is considered as an indicator of sulphur dioxide pollution
- (A) Mosses
 - (B) Lichens
 - (C) Climbers
 - (D) Grasses

90. The phenomenon by which an organism produces one or more biochemicals that influence the germination, growth, survival, and reproduction of other organisms is known as
- (A) Allelopathy
 - (B) Ecological suppression
 - (C) Eutrophication
 - (D) Biomagnification
91. Which of the following techniques can be used to remove fluorides from water?
- (A) Lime softening
 - (B) Ion exchange
 - (C) Reverse osmosis
 - (D) All of the above
92. Which of the following is a water borne disease?
- (A) Scabies
 - (B) Hepatitis
 - (C) Asthma
 - (D) Rabies
93. The pressure inside a water droplet is 0.075 N/cm^2 greater than the outside pressure. What will be the diameter of the droplet? The surface tension may be assumed as 0.075 N/m .
- (A) 0.4 mm
 - (B) 4 mm
 - (C) 0.04 mm
 - (D) 0.6 mm
94. The force due to pressure gradient for fluid at rest is considered as
- (A) Body force
 - (B) Surface force
 - (C) Force due to motion
 - (D) None of the above

95. A uniform body of size 5 m long $\times$ 3 m wide $\times$ 1.4 m deep floats in water. What is the weight of the body if depth of immersion is 1 m?
- (A) 143 kN
 - (B) 73 kN
 - (C) 206 kN
 - (D) 412 kN
96. Kinetic energy factor for a fully developed laminar flow is around
- (A) 4
 - (B) 1
 - (C) 6
 - (D) 2
97. is a graph that indicates the power available at different streams of water.
- (A) Hydrograph
 - (B) Powergraph
 - (C) Isobaric graph
 - (D) Flow graph
98. The sum of enthalpy and kinetic energy remains a constant in
- (A) Isentropic flow
 - (B) Polytropic flow
 - (C) Adiabatic flow
 - (D) Isothermal flow
99. is defined as the similarity between motion of the model and the prototype.
- (A) Kinematic similarity
 - (B) Geometric similarity
 - (C) Dynamic similarity
 - (D) Potential similarity
100. is used to quantify the resistance of an object in a fluid environment.
- (A) Viscosity
 - (B) Drag coefficient
 - (C) Momentum coefficient
 - (D) Diffusion coefficient

101. A structure made of slender members which are joined together at their end points is called
- (A) Support
 - (B) Pillar
 - (C) Beam
 - (D) Truss
102. The moment of inertia of a body does not depend on its
- (A) Angular velocity
 - (B) Distribution
 - (C) Axis of rotation
 - (D) Mass
103. Steam is heated from 110°C to 114°C . Its specific heat at constant pressure is $105 \text{ J}^{\circ}\text{C}$. The corresponding enthalpy change is
- (A) 105 J
 - (B) 210 J
 - (C) 420 J
 - (D) 315 J
104. One percent of the people of country P are taller than 1.8 m. Two percent of the people of country Q are taller than 1.8 m. There are thrice as many people in country P as in country Q. Taking both countries together, what is the percentage of people taller than 1.8 m?
- (A) 3.0%
 - (B) 2.5%
 - (C) 1.5%
 - (D) 1.25%
105. Identify the group of nontoxic metals commonly found in natural water.
- (A) Arsenic, lead and mercury
 - (B) Calcium, sodium and silver
 - (C) Iron, manganese and magnesium
 - (D) Cadmium, chromium and copper

106. One kg of methane is to be completely oxidised to its end products. The amount of CO_2 generated (in kg) during the process will be
- (A) 2.75 Kg
 - (B) 3.2 Kg
 - (C) 2.5 Kg
 - (D) 2.1 Kg
107. At one end of a structural member subjected to compression, translation is restrained at one end and both translation and rotation are restrained at the other end. The effective length factor recommended by IS 456 : 2000 in this case is
- (A) 0.80
 - (B) 0.70
 - (C) 0.65
 - (D) 0.50
108. Which of the following is used to determine the liquid limit of soil?
- (A) Le Chatelier apparatus
 - (B) Casagrande's apparatus
 - (C) Vicat apparatus
 - (D) Briquette testing apparatus
109. The entries in each column of a square matrix M add up to 1. Then an eigenvalue of M is
- (A) 1
 - (B) 3
 - (C) 2
 - (D) 4
110. The initial setting and early strength gain of ordinary Portland cement is due to the presence of
- (A) C_3A
 - (B) C_3S
 - (C) C_2S
 - (D) C_4AF

111. The maximum allowable shear stress for the design of reinforced concrete beam depends on the
- (A) Grade of steel only
 - (B) Grade of concrete only
 - (C) Grade of concrete and grade of steel
 - (D) Grade of concrete and percentage of reinforcement
112. The faintest sound that a normal healthy individual can hear has a sound pressure of
- (A) $0.2 \mu\text{Pa}$
 - (B) $2 \mu\text{Pa}$
 - (C) $55 \mu\text{Pa}$
 - (D) $20 \mu\text{Pa}$
113. Two curves $x^2 = 4y$ and $y^2 = 4x$ intersect at point $(0, 0)$. What is the angle of intersection?
- (A) 0°
 - (B) 30°
 - (C) 45°
 - (D) 90°
114. The shear force at a section of beam under bending is equal to zero then the bending moment at the section is
- (A) Maximum
 - (B) Minimum
 - (C) Zero
 - (D) None of the above
115. The minimum essential treatment to be given to the water from a deep tube well to make it potable
- (A) Coagulation and flocculation
 - (B) Disinfection
 - (C) Filtration
 - (D) Settling
116. The analysis of river water shows that nitrates are present in excess. This indicates
- (A) recent pollution of water with sewage
 - (B) immediate pollution of water with sewage
 - (C) past pollution of water with sewage
 - (D) no pollution of water with sewage

117. It is proposed to use Lacey's method for designing a stable channel for a discharge of $Q \text{ m}^3/\text{s}$ with silt factor ' f '. The mean flow velocity (m/s) in the channel will be
- (A) $(Qf^2/140)^{1/6}$
 - (B) $(Qf/140)^{1/3}$
 - (C) $(Q^2f^2/140)^{1/6}$
 - (D) $0.48 (Q/f)^{1/3}$
118. Which of the following can be used to measure the amount of actual evapotranspiration released by plants?
- (A) Lysimeter
 - (B) Bolometer
 - (C) Thermoscope
 - (D) Manometer
119. It is required to maintain a minimum dissolved oxygen content of in a river for the survival of aquatic life.
- (A) 0 mg/L
 - (B) 2 mg/L
 - (C) 4 mg/L
 - (D) 8 mg/L
120. is a dimensionless parameter measuring the ratio of "the inertia force on an element of fluid to the weight of the fluid element".
- (A) Reynolds number
 - (B) Froude number
 - (C) Nusselt number
 - (D) Prandtl number
121. Which of the following waste water treatment operations involves mass transfer?
- (A) Aeration
 - (B) Sedimentation
 - (C) Screening
 - (D) Equalisation

122. The dimensionless number which is defined as the ratio of the convective mass transfer to the mass diffusivity
- (A) Schmidt number
 - (B) Prandtl number
 - (C) Sherwood number
 - (D) Grashoff number
123. Which of the following has the highest capability of producing precise output when compared to the remaining methods?
- (A) Theodolite surveying
 - (B) Traverse surveying
 - (C) Terrestrial photogrammetry
 - (D) Aerial photogrammetry
124. Identify the feature which is not applicable to remote sensing.
- (A) Electro-magnetic spectrum
 - (B) Interaction of energy with atmosphere
 - (C) Interaction of energy with satellite
 - (D) Electromagnetic energy
125. indicates the process of measuring depth below the water surface.
- (A) Contouring
 - (B) Sounding
 - (C) Triangulation
 - (D) Traversing
126. The average percentage of water present in human body is
- (A) 60
 - (B) 40
 - (C) 90
 - (D) 20
127. The largest producer of biofuel in the world is
- (A) India
 - (B) Argentina
 - (C) Brazil
 - (D) United States of America

128. Which of the following is not essential for growing plants in hydroponics?
- (A) Water
 - (B) Air
 - (C) Soil
 - (D) Nutrients
129. Identify the organism which acts as primary decomposers and recyclers of most of the dead plant material.
- (A) Bacteria
 - (B) Fungi
 - (C) Protozoa
 - (D) Plankton
130. is a symbiotic association between a fungus and a plant.
- (A) Fungal mantle
 - (B) Mycelium
 - (C) Mycorrhizae
 - (D) Thallus
131. The presence and role of within an ecosystem has a disproportionate effect on other organisms within the system.
- (A) Keystone species
 - (B) Dominant species
 - (C) Super species
 - (D) Precious species
132. are special ecosystems in which the water level fluctuates dramatically in different seasons.
- (A) Coral reefs
 - (B) Wetlands
 - (C) Deep oceans
 - (D) Brackish water
133. Sunderbans, a delta of Ganges River is an example of
- (A) Lake ecosystems
 - (B) Pond ecosystem
 - (C) Brackish water ecosystem
 - (D) River ecosystem

134. Which of the following is a multilateral treaty to promote shared responsibilities in relation to importation of hazardous chemicals?
- (A) Montreal protocol
 - (B) Stockholm convention
 - (C) Basel convention
 - (D) Rotterdam convention
135. is a suspension of fine solid particles or liquid droplets in air or another gas.
- (A) Smoke
 - (B) Aerosol
 - (C) Dust
 - (D) Particulates
136. The controlled use of in conjunction with waste stabilization increases the BOD removal capacity.
- (A) Water hyacinth
 - (B) Moses
 - (C) Lichen
 - (D) Eupatorium
137. Which of the following techniques can be used for the effective removal of emulsified oil from water?
- (A) Gravity separation
 - (B) Screening
 - (C) Filtration
 - (D) Dissolved air floatation
138. Removal of sand, and gravel in the primary treatment of waste water is known as
- (A) Coagulation
 - (B) Screening
 - (C) Grit removal
 - (D) Adsorption
139. Which of the following characteristics does not make a waste hazardous?
- (A) Toxicity
 - (B) Viscosity
 - (C) Flammability
 - (D) Reactivity

140. is a chemical process in which the combustible portion of the waste is combined with oxygen forming carbon dioxide and water, which are released into the atmosphere.
- (A) Incineration
 - (B) Pyrolysis
 - (C) Composting
 - (D) Stabilisation
141. Chairperson of the National Crisis Management Committee is the
- (A) Principal Secretary to the Prime Minister
 - (B) Cabinet Secretary
 - (C) Home Secretary
 - (D) Home Minister
142. is an area of land that feeds all the water running under it and draining off of it into a body of water.
- (A) Water cycle
 - (B) Catchment area
 - (C) Water shed
 - (D) Water reservoir
143. Which of the following greenhouse gases has the highest global warming potential on a 100 year scale?
- (A) Carbon tetra fluoride
 - (B) Nitrous oxide
 - (C) Methane
 - (D) Water vapour
144. A disease that affects a large number of people within a community, population, or region is known as
- (A) Pandemic
 - (B) Endemic
 - (C) Epidemic
 - (D) Outbreak
145. Any substance that can disturb the development of an embryo or foetus is called
- (A) Carcinogen
 - (B) Teratogen
 - (C) Mutagen
 - (D) Antibody

146. Discrete groups of organisms of the same kind are called
- (A) Community
 - (B) Colony
 - (C) Biome
 - (D) Species
147. is an electrical device consisting of two dissimilar electrical conductors forming an electrical junction.
- (A) Pyrometer
 - (B) Thermocouple
 - (C) Galvanometer
 - (D) Resistance thermometer
148. is the torque which acts on the moving system of the instrument when it is moving.
- (A) Vibrational torque
 - (B) Damping torque
 - (C) Rotational torque
 - (D) Inertial torque
149. Orifice plate flow meters require for accurate operation.
- (A) Fully developed turbulent flow
 - (B) Laminar flow
 - (C) Plug flow
 - (D) Transitional flow
150. Rapid growth of bacteria is observed in the phase of the growth curve.
- (A) Lag phase
 - (B) Stationary phase
 - (C) Endogenous phase
 - (D) Log phase

ANSWER KEY**Subject Name: 607 ENGINEERING SCIENCE**

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