Entrance Exam

2024



QUESTION PAPER

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ENGINEERING SCIENCE

1. Ozone - layer is getting depleted because of

   (A) excessive use of automobiles
   (B) excessive formation of industrial units
   (C) excessive use of man-made compounds containing both fluorine and chlorine
   (D) excessive deforestation

2. Which of the following is an end product formed from both the aerobic and anaerobic decomposition of organic matter?

   (A) NO_2
   (B) CH_4
   (C) H_2S
   (D) CO_2

3. Which of the following is not true with respect to the effects of acids on waste water treatment systems?

   (A) Destroy microbes
   (B) Upset anaerobic digester
   (C) Corrode structures
   (D) Interferes with settling

4. The natural ageing of a lake by biological enrichment is known as

   (A) Eutrophication
   (B) Biomagnification
   (C) Bioremediation
   (D) Biofortification

5. Which is the least preferred strategy of Integrated Solid Waste Management according to their Environmental benefits?

   (A) Landfills
   (B) Composting
   (C) Waste to Energy
   (D) Recycling

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6. Sludge bulking can be controlled by

(A) Coagulation
(B) Chlorination
(C) Aeration
(D) Denitrification

7. The Ecological pyramid that is always upright

(A) Pyramid of biomass
(B) Pyramid of number
(C) Pyramid of energy
(D) None of the above

8. Orthotolidine test is used for the determination of

(A) Dissolved oxygen
(B) Free Residual chlorine
(C) Biochemical oxygen demand
(D) Dose of coagulant

9. The means of access for the inspection and cleaning of sewer line is called

(A) Manhole
(B) Inlet
(C) Catch basin
(D) Joint

10. If the total hardness of water is greater than its total alkalinity, the carbonate hardness will be equal to

(A) the sum of total alkalinity and total hardness
(B) total hardness
(C) total alkalinity
(D) non carbonate hardness

11. The function of a rapid gravity filter in water treatment is to remove

(A) Dissolved organic matter
(B) Dissolved solids and gases
(C) Dissolved inorganic solids
(D) Colloidal solids and bacteria

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12. Treatment of sewage in a facultative stabilisation pond is accomplished by

(A) Algae only
(B) Aerobic bacteria
(C) Dual action of aerobic and anaerobic bacteria
(D) Coagulation – Flocculation

13. Which of the following is a unit process?

(A) Sedimentation
(B) Chlorination
(C) Filtration
(D) Screening

14. The amount of coagulant needed for water treatment does not depend on

(A) Turbidity of water
(B) Temperature
(C) pH
(D) Dissolved solids concentration

15. Which of the following is installed in the house drainage to preserve the water seal of traps?

(A) Vent pipe
(B) Waste pipe
(C) Anti-siphonage pipe
(D) Soil pipe

16. The most common cause of acidity in water is the presence of

(A) Carbon dioxide
(B) Hydrogen
(C) Oxygen
(D) Nitrogen

17. The most commonly used compound for the dichlorination of water is

(A) Bleaching powder
(B) Chloramine
(C) Sulphur dioxide
(D) Carbon dioxide

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18. Which of the following pump is generally used to pump highly viscous fluid?

(A) Centrifugal pump
(B) Reciprocating pump
(C) Air lift pump
(D) Screw pump

19. Kinematic similarity is said to exist between the model and the prototype, if both of them

(A) have identical velocities
(B) are equal in size and shape
(C) are identical in shape, but differ only in size
(D) have identical forces

20. Which of the following hydraulic units works based on Pascal's law?

(A) Air lift pump
(B) Jet pump
(C) Hydraulic press
(D) Hydraulic coupling

21. The cavitation in a hydraulic machine is mainly due to

(A) high velocity
(B) low velocity
(C) low pressure
(D) high pressure

22. If the net positive suction head (NPSH) requirement for the pump is not satisfied, then

(A) no flow will take place
(B) cavitation will occur
(C) efficiency will be low
(D) excessive power will be consumed

23. The specific speed of a hydraulic turbine depends upon

(A) speed and power developed
(B) discharge and power developed
(C) speed and head of water
(D) speed, power developed and head of water

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24. The point of intersection between an imaginary line drawn vertically through the centre of buoyancy of a floating vessel and a corresponding line through the new centre of buoyancy when the vessel is tilted is called

(A) Centre of pressure
(B) Metacentre
(C) Centre of buoyancy
(D) Centre of gravity

25. The region of disturbed flow downstream of a solid body moving through a fluid, caused by the flow of the fluid around the body is known as

(A) Wake
(B) Drag
(C) Lift
(D) Boundary layer

26. The ratio of inertia force to gravity force is called

(A) Reynold's number
(B) Prandtl number
(C) Froude's number
(D) Mach number

27. The force that opposes the adhesion of a liquid layer to a solid surface is

(A) Coefficient of viscosity
(B) Drag
(C) Surface tension
(D) Viscosity

28. The flow in which the fluids flow in parallel layers such that there is no disruption or intermixing of the layers and at a given point, the velocity of each fluid particle passing by remains constant with time is known as

(A) Uniform flow
(B) Streamline flow
(C) Steady flow
(D) Turbulent flow

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29. The layer of trapped matter at the surface of a slow sand filter in which a dense population of microorganisms develops is known as

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

30. Which of the following occurs in atmosphere when environmental lapse rate (ELR) is greater than adiabatic lapse rate (ALR)?

(A) Neutral condition
(B) Stable condition
(C) Unstable condition
(D) Inversion

31. Which of the following is not a part of photochemical smog?

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

32. 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

33. Sedimentation of discrete particles takes place in

(A) Zone settling
(B) Compression settling
(C) Hindered settling
(D) Discrete settling

34. The test used for finding the optimum coagulant dose in water treatment is

(A) Chromatography
(B) Jar test
(C) Kjeldahl test
(D) Dilatancy test

35. Which of the following has minimum detention period?

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

36. Which of the following processes is not involved in the treatment of sludge?

(A) Dewatering
(B) Drying
(C) Flocculation
(D) Conditioning

37. Which of the following is a disadvantage of Hydro Power?

(A) They cause deforestation and affect wildlife
(B) They cause harmful emissions
(C) They are an unstable source of energy
(D) They are not suitable for long-distance electricity transmission

38. Which of the following is the cleanest fossil fuel?

(A) Diesel
(B) Natural Gas
(C) Petroleum
(D) Coal

39. What is the main potential water pollutant from a geothermal reservoir?

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

40. What is the goal of sustainability in any process?

(A) To maintain the process finitely
(B) To eventually eliminate the process
(C) To maintain the process indefinitely
(D) To support damaging the environment

41. Which of the following leads the energy production in low-carbon sources?

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(A) Photovoltaics
(B) Wind energy
(C) Solar thermal power systems
(D) Nuclear energy

42. Which of the following is generally used to measure direct solar radiation?

(A) Pyranometer
(B) Actinometer
(C) Pyrheliometer
(D) IC tester

43. What is the major drawback of steam-methane reforming technique to produce hydrogen?

(A) Capital intensive
(B) Releases greenhouse gases into atmosphere
(C) A niche technology
(D) Poor efficiency

44. Which of the following winds are prevailing winds that blow from west to east?

(A) Polar easterlies
(B) Westerlies
(C) Monsoonal winds
(D) Katabatic winds

45. Which of the following is used in wind turbines to boost the rotating speed of the rotor shaft to a level adequate for effective energy generation?

(A) Gearbox
(B) Main shaft
(C) Generator
(D) Rotor blades

46. Which of the following is the most basic and extensively utilized form of biomass conversion?

(A) Anaerobic digestion
(B) Gasification
(C) Pyrolysis
(D) Direct combustion

47. Which of the following is a by-product of biomass gasification?

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(A) Ash
(B) Tar
(C) Char
(D) All of the above

48. Which of the following is an example of direct solar water heating system?

(A) Pressurised antifreeze system
(B) Pumped systems to circulate transfer fluid
(C) Convection heat storage system
(D) Drain back system

49. Which of the following principles is used to concentrate sunlight in solar cookers?

(A) Rarefaction
(B) Evaporation
(C) Specular reflection
(D) Radiation

50. Which of the following is a product of pyrolysis of biomass?

(A) Producer gas
(B) Steel
(C) Agricultural residue
(D) Sodium



51. Second law of thermodynamics is concerned with the

(A) amount of energy transferred
(B) direction of energy transfer
(C) irreversible processes only
(D) non-cyclic processes only

52. Equilibrium constant of a reaction varies with the

(A) Initial concentration of the reactant
(B) Pressure
(C) Temperature
(D) None of the above

53. Solid and liquid phases of a substance are in equilibrium at the

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(A) Critical temperature
(B) Melting point
(C) Freezing point
(D) Both Melting point and Freezing point

54. Arrhenius equation shows the variation of …… with temperature.

(A) Reaction rate
(B) Rate constant
(C) Energy of activation
(D) Frequency factor

55. A plug-flow reactor is characterised by

(A) High capacity
(B) Presence of axial mixing
(C) Presence of lateral mixing
(D) Constant composition and temperature of reaction mixture

56. Catalytic action in a catalytic chemical reaction follows from the ability of catalyst to change the

(A) Activation energy
(B) Equilibrium constant
(C) Heat of reaction
(D) None of the above

57. …….. is called 'blue gas'

(A) Coke oven gas
(B) Water gas
(C) Natural gas
(D) Producer gas

58. In flue gas analysis by Orsat's apparatus, oxygen is absorbed by

(A) Potassium hydroxide
(B) Cuprous chloride
(C) Alkaline pyragallol solution
(D) None of the above

59. Which of the following is not endothermic?

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(A) Cracking
(B) Reforming
(C) Gasification
(D) Partial oxidation

60. Slow and progressive deformation of a material with time under constant stress is called

(A) Creep
(B) Erosion
(C) Resilience
(D) None of the above

61. Which of the following is an alloy of nickel and copper?

(A) Hastelloy
(B) Duriron
(C) Monel
(D) Inconel

62. The ability of a material to absorb energy in the elastic range is a measure of its

(A) Toughness
(B) Resilience
(C) Malleability
(D) Brittleness

63. Tempering of steel is done to make it

(A) Brittle
(B) Hard
(C) Rollable
(D) Soft

64. Brittle materials are

(A) weak in tension but strong in compression
(B) strong in tension but weak in compression
(C) weak in tension as well as in compression
(D) strong in tension as well as in compression

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65. Where does the maximum tensile strength occur in a thick cylindrical vessel subjected to internal pressure?

(A) At the inner surface
(B) At the mid thickness of the cylindrical vessel
(C) At the outer surface
(D) None of the above

66. …….. remains constant during the adiabatic cooling of moist air.

(A) Wet bulb temperature
(B) Dry bulb temperature
(C) Relative humidity
(D) Specific humidity

67. Fog is an example of a colloidal system of

(A) Solid dispersed in gas
(B) Solid dispersed in liquid
(C) Liquid dispersed in gas
(D) Gas dispersed in liquid

68. The most detrimental impurity in high pressure boiler feed water is

(A) Suspended salt
(B) Dissolved salt
(C) Silica
(D) Turbidity

69. Friction factor for fluid flow in pipe does not depend upon the

(A) pipe length
(B) pipe roughness
(C) fluid density and viscosity
(D) mass flow rate of fluid

70. 'Pneumoconiosis' is a disease caused by the inhalation of …….. dust.

(A) Coal
(B) Uranium ore
(C) Iron ore
(D) Lime

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71. For absorbers, high pressure drop results in

(A) increased efficiency
(B) decreased efficiency
(C) high operating cost
(D) better gas liquid contact

72. The most convenient way of expressing solution concentration is in terms of

(A) Mole fraction
(B) Normality
(C) Molality
(D) Molarity

73. The velocity distribution in the turbulent boundary layer follows the ……. law.

(A) Parabolic
(B) Hyperbolic
(C) Straight line
(D) Logarithmic

74. Number of gram moles of solute dissolved in 1 kg of solvent is called its

(A) Normality
(B) Molality
(C) Molarity
(D) Viscosity

75. Isotonic solutions must have the same

(A) Viscosity
(B) Molar concentration
(C) Normality
(D) Critical temperature

76. The moment of the resultant of two concurrent forces to a centre in their plane is equal to

(A) The algebraic sum of the moments of the components to the same centre
(B) The algebraic sum of the moments of the components to a different centre
(C) The difference in component moments with respect to a different centre
(D) The difference between the component's moments at the same centre

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77. Which of the following is correct for a screw being rotated?

(A) The couple moment depends on the axis of rotation
(B) The couple moment depends directly on the radius vector of forces
(C) The couple moment depends only on the distance vector between the forces
(D) The couple moment's direction is given by the left-hand rule

78. In triangle distributed loading, the loading at any distance can be easily found by using which of the following trigonometry functions?

(A) Tangent
(B) Sine
(C) Cosine
(D) Sine inverse

79. The ……. forces do not cause the rotation if the rotation considered is about the axis of the body or the centroid axis of the body.

(A) non-concurrent
(B) concurrent
(C) parallel
(D) non-parallel

80. The free body diagram used to explain the theory of dry friction is having ……... distribution of both the normal forces and frictional surface.

(A) Uneven
(B) Even
(C) Uniform
(D) Equal

81. Which function does iron oxide perform in cement?

(A) Increases strength
(B) Makes cement sound
(C) Increases setting time
(D) Acts as flux

82. Which of the following bricks types use the least amount of clay?

(A) Hollow bricks
(B) Coping bricks
(C) Perforated bricks
(D) Channel bricks

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83. Flat iron bars are used generally for

(A) R.C.C
(B) Grill work
(C) Roofing
(D) Truss

84. Which of the following is not a pozzolanic material?

(A) Fly ash
(B) Silica fume
(C) Cinder
(D) Slag

85. PVC is widely used to make pipes because

(A) they are cost effective
(B) they does not react to chemicals
(C) they are easily available
(D) they are easy to transport

86. An arrangement composed of soil particles having a parallel orientation is

(A) Dispersed
(B) Coarse grained skeleton
(C) Honey comb
(D) Single grained

87. Darcy's law is valid only for …… conditions in the soil

(A) Laminar flow
(B) Turbulent flow
(C) Hydraulic flow
(D) All of the above

88. The foundation that is used when the soil mass is sufficiently erratic is

(A) Strap footing
(B) Combined footing
(C) Mat footing
(D) Rectangular combined footing

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89. The piles that are used for protecting structures from ships and floating object is

(A) Anchor piles
(B) Compaction piles
(C) Fender piles
(D) Batter piles

90. Earth embankments or slopes are commonly required for which of the following purposes?

(A) Railways
(B) Earth dams
(C) Road ways
(D) All of the above

91. Which of the following type of irrigation method can be used for both flat lands and relatively steep lands?

(A) Free Flooding
(B) Basin Flooding
(C) Furrow Method
(D) Drip Irrigation Method

92. A series of regular sinuous curves in the channel of a river or other watercourse is called

(A) Cut-off
(B) Meander
(C) Bends
(D) Straight reach

93. The central core of the zoned embankment type earth dam

(A) checks the seepage
(B) prevents piping
(C) gives stability to the central impervious fill
(D) distributes the load over a large area

94. Deep vertical movement of water in the ground is called

(A) infiltration
(B) seepage
(C) runoff
(D) percolation

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95. The presence of excess salts in the soil requires

(A) high water storage efficiency
(B) low water storage efficiency
(C) high water application efficiency
(D) high water use efficiency

96. In which of the following rocks does stratification occur?

(A) Igneous rocks
(B) Metamorphic rocks
(C) Sedimentary rocks
(D) Fossil rocks

97. The undulations or bends developed in rocks is called

(A) Faults
(B) Joints
(C) Non conformity
(D) Folds

98. Disruption of beds due to faulting results in their

(A) Settling
(B) Displacement
(C) Inclination
(D) Change in their composition

99. The point of origin of an earthquake below the earth's surface is called

(A) Isocentre
(B) Isopoint
(C) Focus
(D) Epicentre

100. Reservoirs involving large sluice gates are

(A) Flood control reservoirs
(B) Storage and conservation reservoirs
(C) Distribution reservoirs
(D) Drought control reservoirs

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101. Which air pollutant is released during the pulping of wood in a pulp and paper mill?

(A) Hydrogen sulphide
(B) Fumes
(C) Nitrogen dioxide
(D) Carbon monoxide

102. Which of the following is not a sink for air pollutants?

(A) The ocean fauna
(B) The soil
(C) The flora
(D) The fauna

103. Which of the following is not a dry method of removal of particulates from the atmosphere?

(A) Diffusion
(B) Flotation
(C) Impact on the ground
(D) Sedimentation

104. How can fly ash emissions be reduced from thermal plants?

(A) Equipment changes
(B) Raw material changes
(C) Process changes
(D) Emission treatment

105. Which of the following is not a mechanism of separation employed in packed filtration?

(A) Direct interception
(B) Gravity settling
(C) Inertial impact
(D) Diffusion

106. Which of the following factors controls the air pollutant plume behaviour?

(A) Atmospheric instability only
(B) Wind turbulence only
(C) Wind turbulence and degree of atmospheric instability
(D) Turbulence, instability of atmosphere and stack diameter

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107. Which of the following is not a factor upon which the emissions patterns from stacks depends?

(A) Wind profile
(B) Temperature of the wind
(C) Wind turbulence
(D) Distribution of temperature

108. Which method is preferred for the analysis of sulphur dioxide from stack emissions?

(A) Spectrophotometry
(B) Conductometry
(C) Colourimetry
(D) Electrochemical method

109. Which of the following is an effect of long-term arsenic poisoning?

(A) Nervous system damage
(B) Brain damage
(C) Digestive system damage
(D) Pancreas damage

110. Particulates corrode the surface of metals in the presence of

(A) Carbon dioxide and moisture
(B) Oxygen and moisture
(C) Carbon monoxide and moisture
(D) Sulphur dioxide and moisture

111. The immediate health effect of exposure to aromatic hydrocarbons is

(A) Irritation of eyes
(B) Irritation of mucus membrane
(C) Irritation of the throat
(D) Irritation of nose

112. Which one of the following is **not** a working principle of wet scrubbers?

(A) Inertial impaction
(B) Diffusion
(C) Adsorption
(D) Interception

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113. Which type of membrane is used in the reverse osmosis process?

(A) Highly permeable membrane
(B) Permeable membrane
(C) Semi-permeable membrane
(D) Non-permeable membrane

114. Which process is responsible for the accumulation of mercury in the food web?

(A) Oxidation of mercury metal
(B) Chlorination of mercury metal
(C) Mercury retained in its metallic form
(D) Methylation of mercury metal

115. Which of the following is a major cause of ocean acidification?

(A) Absorption of carbon dioxide by the oceans
(B) Absorption of nitrogen dioxide by the oceans
(C) Absorption of ozone by the oceans
(D) Condensation of water vapour into the oceans

116. Which of the following metal is suitable under all conditions of concentration and temperature in caustic soda?

(A) Aluminium
(B) Nickel
(C) Titanium
(D) Carbon steel

117. Which of the following factors is least significant while selecting a point for streamflow measurement?

(A) Width of stream
(B) Depth of stream
(C) Presence of curve
(D) Scouring effect on riverbank

118. The maximum amount of water that can be retained by the soil against gravity is known as

(A) Potential evapotranspiration
(B) Actual evapotranspiration
(C) Field capacity
(D) Permanent wilting point

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119. What is the rotating element generally employed in a vertical-axis current meter?

(A) Impeller
(B) Propeller
(C) Torsion spring
(D) Conical cup assembly

120. Identify the dilution technique of stream flow measurement in which tracer is injected continuously at a given section at a constant rate

(A) Sudden injection
(B) Plateau gauging
(C) Integration method
(D) Gulp method

121. Which of the following is not a structural method of flood control?

(A) Flood ways
(B) Flood embankments
(C) Flood plain zoning
(D) Channel improvement

122. A saturated formation in a soil has a porosity of 23%. Which of the following is true about the formation?

(A) High water holding capacity
(B) Moderate water holding capacity
(C) Very low water holding capacity
(D) Insufficient data

123. When water is pumped from a well in a homogeneous and isotropic unconfined aquifer, what does the shape of the water table resemble?

(A) Cylinder
(B) Hemisphere
(C) Cone
(D) Helix

124. Which of the following is not a method used for the estimation of groundwater recharge?

(A) Specific yield method
(B) Induced recharge method
(C) Groundwater level fluctuation method
(D) Rainfall infiltration factor method

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125. Which of the following is the fundamental method of representing GIS entities?

(A) Mapping Method
(B) Drawing Method
(C) GIS Method
(D) Raster Method

126. What is the relation between the Coefficient of thermal expansion of concrete and the coefficient of thermal expansion in aggregates?

(A) Equal
(B) More than
(C) Directly proportional
(D) Inversely proportional

127. Which among the following is an assumption of Hagen-Poiseuille equation?

(A) Fluid is uniform
(B) Fluid is laminar
(C) Fluid is turbulent
(D) Fluid is compressible

128. A tank containing water up to a depth of 500 mm is moving vertically upward with a constant acceleration of 2.45 m/s^2. Find the force exerted by a fluid of specific gravity 0.65 on the side of the tank with a width of 1m

(A) 996.1 N
(B) 1992.2 N
(C) 498.06 N
(D) 124.5 N

129. Another popular name of Trapezoidal weir is

(A) Euler's weir
(B) Hagen Poiseuille's weir
(C) Reynold's weir
(D) Cipolletti weir

130. When the energy is at minimum for flow discharge, it is called

(A) Normal depth
(B) Roughness
(C) Critical depth
(D) Hydraulic radius

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131. Find the discharge through totally drowned orifice of width 3.3 m if the difference of water levels on both side of the orifice be 50 cm. The height of water from top and bottom of the orifice are 2.25 m and 2.67 m respectively.

(A) 2.8 m^3/s
(B) 2.7 m^3/s
(C) 2.6 m^3/s
(D) 2.5 m^3/s

132. Any failure in the hydrosphere within oxygen cycle can lead to the formation of

(A) Hyperoxic zones
(B) Hypoxic zones
(C) Hydrolic zones
(D) Hydroxic zones

133. A permanent structure constructed at a coastal area to protect against tides, currents, waves, and storm surges is known as

(A) Pier heads
(B) Dolphins
(C) Breakwater
(D) Fenders

134. Which of the following cycles of the environment does not have a gaseous state?

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

135. An analogous process for organic nitrogen compounds to desulphurisation in the sulphur cycle is

(A) Transnitrification
(B) Denitrification
(C) Deamination
(D) Assimilation

136. Which one of the following is not an in-situ conservation method?

(A) Zoo
(B) National Parks
(C) Biosphere Reserves
(D) Sanctuaries

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137. Which of the following is an example of slow-onset disaster?

(A) Earthquake
(B) Tsunami
(C) Cyclone
(D) Drought

138. The maximum frictional force which comes into play when a body just begins to slide over another surface is called

(A) Limiting friction
(B) Sliding friction
(C) Rolling friction
(D) Kinematic friction

139. Binomial Distribution is a

(A) Continuous distribution
(B) Discrete distribution
(C) Irregular distribution
(D) Not a Probability distribution

140. How many grams of C_2H_6 are required to produce 88 grams of CO_2 when it is burned in the excess of oxygen?

(A) 15
(B) 30
(C) 45
(D) 60

141. "Any compound should have the same reduced volume at the same reduced pressure and reduced temperature." This statement is known as

(A) Law of corresponding states
(B) Law of critical state
(C) Law of reduced state
(D) None of the above

142. What is the distillation method of obtaining fresh water from saline waters?

(A) Solvent extraction
(B) Reverse osmosis
(C) Vapor recompression
(D) Hydrocarbon hydrates

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143. Which of the following temperature measuring devices is widely used to measure the temperature in furnaces?

(A) Resistance thermometer
(B) Radiation pyrometer
(C) Iron-constantan thermocouple
(D) Bimetallic thermometer

144. Polarimeter is used for the analysis of

(A) sugars and chemicals having symmetrical structures
(B) any liquid solution
(C) any solid
(D) any gaseous mixture

145. The Lewis number of a mixture is one when mass diffusivity is equal to

(A) momentum diffusivity
(B) thermal diffusivity
(C) thermal conductivity
(D) $\frac{1}{\text{thermal diffusivity}}$

146. For identical feed composition and flow rate, N plug flow reactors in series with a total volume V gives the same conversion as a single

(A) Plug flow reactor of volume V
(B) CSTR of volume V
(C) Plug flow reactor of volume V/N
(D) plug flow reactor of volume NV

147. If a solid-gas non-catalytic reaction occurs at very high temperature, the rate controlling step is

(A) film diffusion
(B) chemical reaction
(C) ash layer diffusion
(D) pore diffusion

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148. As the temperature of a hot glowing object increases the wavelength at the maximum of the blackbody radiation curve

(A) increases
(B) decreases
(C) remains the same
(D) increases linearly

149. The vertical distance between the total energy grade line and hydraulic grade line represents the

(A) velocity head
(B) pressure head
(C) elevation head
(D) piezometric head

150. Heavy water is used in nuclear reactors to

(A) cool the reactor
(B) facilitate the release of neutrons
(C) control fission
(D) slow down the speed of neutrons

FOR REFERENCE ONLY

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	A	61	C	91	A	121	C
2	D	32	B	62	B	92	B	122	A
3	D	33	D	63	D	93	A	123	C
4	A	34	B	64	D	94	D	124	B
5	A	35	A	65	A	95	A	125	D
6	B	36	C	66	B	96	C	126	C
7	C	37	A	67	C	97	D	127	B
8	B	38	B	68	C	98	B	128	A
9	A	39	C	69	A	99	C	129	D
10	C	40	C	70	A	100	A	130	C
11	D	41	A	71	C	101	A	131	A
12	C	42	C	72	D	102	D	132	B
13	B	43	B	73	D	103	B	133	C
14	D	44	B	74	B	104	C	134	D
15	C	45	A	75	D	105	B	135	C
16	A	46	D	76	A	106	C	136	A
17	C	47	D	77	C	107	B	137	D
18	D	48	C	78	A	108	D	138	A
19	A	49	C	79	B	109	A	139	B
20	C	50	A	80	A	110	D	140	B
21	C	51	B	81	D	111	B	141	A
22	B	52	C	82	C	112	C	142	C
23	D	53	D	83	B	113	C	143	B
24	B	54	B	84	C	114	D	144	A
25	A	55	C	85	B	115	A	145	B
26	C	56	A	86	A	116	B	146	D
27	C	57	B	87	A	117	B	147	C
28	B	58	C	88	C	118	C	148	B
29	A	59	D	89	B	119	D	149	A
30	C	60	A	90	D	120	B	150	D

FOR REFERENCE ONLY

Entrance Exams

- Agricultural Entrance Exams
- Architecture Entrance Exam
- Arts and Humanities Entrance Exams
- Commerce Entrance Examinations
- Common Entrance Examinations
- Computer Application Entrance Exams
- Design Entrance Exams
- Education Entrance Exams
- Engineering Entrance Exams
- Hotel Management Entrance Exams
- Law Entrance Exams
- MBA Entrance Exams
- Media & Journalism Entrance Exams
- Medical Entrance Exams
- Nursing Entrance Exams
- Pharmacy Entrance Exams
- Science Entrance Exams
- Diploma & Polytechnic
- Lateral Entry