

## **Top 300+ General Science PYQ Questions for CDS II 2023**

### PHYSICS

- **1.** Which one of the following Indian scientists was elected as a fellow of the Royal Society of London for his contribution in the field of Plant Physiology and Physics?
  - (a) Jagdish Chandra Bose
  - (b) Ashutosh Mukherjee
  - (c) Prafulla Chandra Ray
  - (d) P C Mahalanobis
- 2. Assertion (A): Steam is more harmful for human body than the boiling water in case of burn. Reason (R): Boiling water contains more heat than steam.
  - (a) Both A and R are true, and R is the correct explanation of A
  - (b) Both A and R are true, but R is not the correct explanation of A
  - (c) A is true, but R is false
  - (d) A is false, but R is true
- **3.** Why is it difficult to see through fog?
  - (a) Rays of light suffer total internal reflection from the fog droplets
  - (b) Rays of light are scattered by the fog droplets
  - (c) Fog droplets absorb light
  - (d) The refractive index of fog is extremely high
- **4.** The density of water varies with temperature which helps the aquatic animals to live in cold water. At what temperature is the density of water maximum?
  - (a) 1°C
  - (b) 2°C
  - (c) 3°C
  - (d) 4°C
- 5. Who gave the first evidence of the big-bang theory?
  - (a) Edwin Hubble
  - (b) Albert Einstein
  - (c) S Chandrasekhar
  - (d) Stephen Hawking

6. A ray of light is incident on a plane mirror at an angle 30° with the normal at the point of incidence. The ray will be deviated from its incidence direction by what angle?

- (a) 30°
- (b) 60°
- (c) 120°
- (d) None of these



- 7. What would be the best choice for window material to keep the outside heat away?
  - (a) Single-pane glass
  - (b) Double-pane glass without a gap in between
  - (c) Double-pane glass with water filled in between
  - (d) Double-pane glass with air in between
- 8. Bar is a unit of which one of the following?
  - (a) Force
  - (b) Energy
  - (c) Pressure
  - (d) Frequency
- 9. On which one of the following conservative laws, does a rocket work?
  - (a) Mass
  - (b) Energy
  - (c) Linear momentum
  - (d) Angular momentum
- **10.** Assertion (A): In a pressure cooker food is cooked above boiling point. Reason (R): Boiling point of water increases as the pressure increases.
  - (a) Both A and R are true and R is the correct explanation of A
  - (b) Both A and R are true, but R is not the correct explanation of A
  - (c) A is true, but R is false
  - (d) A is false, but R is true
- **11.** The phenomenon of mirage occurs due to which one of the following?
  - (a) Polarization of light
  - (b) Dispersion of light
  - (c) Diffraction of light
  - (d) Total i<mark>nternal re</mark>flection of light
- **12.** Which one of the following common devices works on the basis of the principle of mutual induction?
  - (a) Tube light
  - (b) Transformer
  - (c) Photodiode
  - (d) LED
- 13. Television signal cannot be received generally beyond a particular distance due to
  - (a) Curvature of the Earth
  - (b) Weakness of antenna
  - (c) Weakness of signal
  - (d) Absorption of signal in air

- **14.** If a small raindrop falls through air
  - (a) Its velocity goes on increasing
  - (b) Its velocity goes on decreasing
  - (c) Its velocity goes on increasing for some time and then becomes constant
  - (d) It falls with constant speed for some time and then its velocity increases
- **15.** Consider the following statements

X-rays

- 1. Can pass through aluminum.
- 2. Can be deflected by magnetic field.
- 3. Move with a velocity less than the velocity of ultraviolet ray in vacuum.
- (a) 1, 2 and 3
- (b) Only 1
- (c) 2 and 3
- (d) 1 and 2

**16.** Which one of the following is the permissible level of noise in a silent zone at day time?

- (a) 50 dB
- (b) 60 dB
- (c) 65 dB
- (d) 75 dB

17. By which one of the following, an old written material which cannot be read easily, can be read

- (a) γ-rays
- (b) X-rays
- (c) IR-rays
- (d) Radiofrequency waves
- **18.** Earthquake (shock) waves are
  - (a) Infrasonic waves
  - (b) Ultrasonic waves
  - (c) Seismic
  - (d) Infrared waves
- **19.** Laser is a device to produce
  - (a) A beam of white light
  - (b) Coherent light
  - (c) Microwaves
  - (d) X-rays
- **20.** A perfect black body has the unique characteristic feature as
  - (a) A good absorber only
  - (b) A good radiator only
  - (c) A good absorber and a good radiator
  - (d) Neither a radiator nor an absorber

- 21. Fat can be separated from milk in a cream separation because of
  - (a) Cohesive force
  - (b) Gravitational force
  - (c) Centrifugal force
  - (d) Centripetal force
- 22. Which one of the following is not result of surface tension?
  - (a) Vapour formation above the liquid surface
  - (b) Convex shape of liquid meniscus
  - (c) Liquid rising in a capillary
  - (d) Spherical shape of mercury fallen on the floor
- Hair of a shaving brush clings together when the brush is removed from water due to 23.
  - (a) Viscosity
  - (b) Surface tension
  - (c) Friction
  - (d) Elasticity
- 24. Consider the following statements
  - Clear sky appears blue due to poor scattering of blue wavelength of visible light. 1.
  - 2. Red part of light shows more scattering than blue light in the atmosphere.
  - 3. In the absence of atmosphere, there would be no scattering of light and sky will look black.

Which of the statements given above is/are correct?

- (a) Only 1
- (b) 1 and 2
- (c) Only 3
- (d) All of these
- The most familiar form of radiant energy in sunlight that causes tanning and sun burning of 25. human skin, is called
  - (a) Ultraviolet radiation
  - (b) Visible radiation
  - (c) Infrared radiation
  - (d) Microwave radiation
- A boy throws four stones of same shape, size and weight 26. with equal speed at different initial angles with the horizontal line. If the angles are 15°, 30°, 45° and 60°, at which angle the stone will cover the maximum horizontally?
  - (a) 15°
  - (b) 45°
  - (c) 30°
  - (d) 60°

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- **27.** Which one of the following statement is true?
  - (a) Temperatures differing 25° on the Fahrenheit (F) scale must differ by 45° on the Celsius (C) scale
  - (b) 0°F corresponds to 32°C
  - (c) Temperatures which differ by 10° on the Celsius scale must differ by 18° on the Fahrenheit scale
  - (d) Water at 90°C is warmer than water at 202°F
- **28.** A diffraction pattern is obtained using a beam of red light. Which one among the following will be the outcome, if the red light is replaced by blue light?
  - (a) Bands disappear
  - (b) Diffraction pattern becomes broader and further apart
  - (c) Diffraction pattern becomes narrower and crowded together
  - (d) No change
- **29.** Raw mangoes shrivel when pickled in brine. The phenomenon is associated with
  - (a) Reverse osmosis
  - (b) Osmosis
  - (c) Increase of surface tension of fluid
  - (d) Decrease of surface tension of fluid
- **30.** The apparent weight of a steel sphere immersed in various liquids is measured using a spring balance. The greatest reading is obtained for the liquid
  - (a) Having the smallest density
  - (b) Having the largest density
  - (c) In which the sphere was submerged deepest
  - (d) Having the greatest volume
- **31.** If an object having mass of 1 kg is subjected to a force of 1 N it moves with
  - (a) A speed of 1 m/s
  - (b) A speed of 1 km/s
  - (c) An acceleration of  $1 m/s^2$
  - (d) An acceleration of  $10 m/s^2$
- **32.** An athlete diving off a high springboard can perform a variety of exercises in the air before entering the water below. Which one of the following parameters will remain constant during the fall?
  - (a) The athlete's linear momentum
  - (b) The athlete's moment of inertia
  - (c) The athlete's kinetic energy
  - (d) The athlete's angular momentum

- **33.** The pressure exerted on the ground by a man is greatest
  - (a) When the lies down in the ground
  - (b) When the stands on the toes of one foot
  - (c) When the stands with both foot flat on the ground
  - (d) All of the above yield the same pressure
- **34.** A passenger in a moving train tosses a five rupee coin. If the coin falls behind him, then the train must be moving with a uniform
  - (a) Acceleration
  - (b) Deceleration
  - (c) Speed
  - (d) Velocity
- **35.** As the sunlight passes through the atmosphere, the rays are scattered by tiny particles of dust, pollen, soot and other minute particulate matters present there. However, when we look up, the sky appears blue during mid-day because
  - (a) Blue light is absorbed most
  - (b) Blue light is scattered most
  - (c) Blue light is reflected most
  - (d) Ultraviolet and yellow component of sunlight combine
- **36.** The force acting on a particle executing simple harmonic motion is
  - (a) Directly proportional to the displacement and is directed away from the mean position
  - (b) Inversely proportional to the displacement and is directed towards the mean position
  - (c) Directly proportional to the displacement and is directed towards the mean position
  - (d) Inversely proportional to the displacement and is directed away from the mean position
- 37. Which one of the following statements is correct?
  - (a) The angle of contact of water with glass is acute while that of mercury with glass is obtuse
  - (b) The angle of contact of water with glass is obtuse, while that of mercury with glass is acute
  - (c) Both the angle of contact of water with glass and that of mercury with glass are acute
  - (d) None of the above
- **38.** Why are inner lining of hot water geysers made up of copper?
  - (a) Copper has low heat capacity
  - (b) Copper has high electrical conductivity
  - (c) Copper is good conductor of both heat and electricity
  - (d) Copper does not react with steam
- **39.** Half portion of a rectangular piece of ice is wrapped with a white piece of cloth while the other half with a black one. In this context, which one among the following statements is correct?
  - (a) Ice melts more easily under black wrap
  - (b) Ice melts more easily under white wrap
  - (c) No ice melts at all under the black wrap
  - (d) No ice melts at all under the white wrap

- **40.** In scuba-diving, while ascending towards the water surface, there is a danger of bursting the lungs. It is because of
  - (a) Archimedes' principle
  - (b) Boyle's law
  - (c) Gay-Lussac's law of combining volumes
  - (d) Graham's law of diffusion
- **41.** The blackboard seems black because it
  - (a) Reflects every colour
  - (b) Does not reflect any colour
  - (c) Reflects black colour
  - (d) Absorbs black colour
- **42.** Mr X was advised by an architect to make outer walls of his house with hollow bricks. The correct reason is that such walls
  - (a) Make the building stronger
  - (b) Help keeping inside cooler in summer and warmer in winter
  - (c) Prevent seepage of moisture from outside
  - (d) Protect the building from lightning
- **43.** If a ship moves from freshwater into seawater, it will
  - (a) Sink completely
  - (b) Sink a little bit
  - (c) Rise a little higher
  - (d) Remain unaffected
- 44. Viewfinders, used in automobiles to locate the position of the vehicles behind, are made of
  - (a) Plane mirror
  - (b) Concav<mark>e mirror</mark>
  - (c) Convex mirror
  - (d) Parabo<mark>lic mirror</mark>
- **45.** The cat can survive fall from a height much more than human or any other animal. It is because the cat
  - (a) Can immediately adjust itself to land on all four paws and bend the legs to absorb the impact of falling
  - (b) Has elastic bones
  - (c) Has thick and elastic skin
  - (d) Also gets injury equally with other animals, but has tremendous endurance, resistance and speedy recovery
- **46.** Fire fly gives us cold light by virtue of the phenomenon of
  - (a) Chemiluminescence
  - (b) Phosphorescence
  - (c) Fluorescence
  - (d) Effervescence

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- **47.** Transformer is a kind of appliance that can
  - 1. Increase power
  - 2. Increase voltage
  - 3. Decrease voltage
  - 4. Measure current and voltage

Select the correct answer using the codes given below

- (a) Only 4
- (b) 1 and 4
- (c) 2 and 3
- (d) 2, 3 and 4
- **48.** A body has a mass of 6 kg on the Earth; when measured on the Moon, its mass would be
  - (a) Nearly 1 kg
  - (b) Less than 1 kg
  - (c) Less than 6 kg
  - (d) 6 kg
- **49.** When a ball drops onto the floor it **bounces**. Why does it bounce?
  - (a) Newton's third law implies that for every action (drop) there is a reaction (bounce)
  - (b) The floor exerts a force on the ball during the impact
  - (c) The floor is perfectly rigid
  - (d) The floor heats up on impact
- **50.** If the door of a running refrigerator in a closed room is kept open, what will be the net effect on the room?
  - (a) It will heat the room
  - (b) It will cool the room
  - (c) It will make no difference on the average
  - (d) It will make the temperature go up and down
- **51.** The focal length of convex lens is
  - (a) The same for all colours
  - (b) Shorter for blue light than for red
  - (c) Shorter for red light than for blue
  - (d) Maximum for yellow light
- **52.** When you pull out the plug connected to an electrical appliance, you often observe a spark. To which property of the appliance is this related?
  - (a) Resistance
  - (b) Inductance
  - (c) Capacitance
  - (d) Wattage



- **53.** The time period of a simple pendulum having a spherical wooden bob is 2 s. If the bob is replaced by a metallic one twice as heavy, the time period will be
  - (a) More than 2 s
  - (b) 2 s
  - (c) 1 s
  - (d) Less than 1 s
- **54.** A liquid is kept in a regular cylindrical vessel upto a certain height. If this vessel is replaced by another cylindrical vessel having half the area of cross-section of the bottom, the pressure on the bottom will
  - (a) Remain unaffected
  - (b) Be reduced to half the earlier pressure
  - (c) Be increased to twice the earlier pressure
  - (d) Be reduced to one-fourth the earlier pressure
- 55. In SONAR, we use
  - (a) Ultrasonic waves
  - (b) Infrasonic waves
  - (c) Radio waves
  - (d) Audible sound waves
- **56.** Two identical piano wires have same fundamental frequency when kept under the same tension. What will happen if tension of one of the wire is slightly increased and both the wires are made to vibrate simultaneously?
  - (a) Noise
  - (b) Beats
  - (c) Resonance
  - (d) Non-linear effects
- **57.** After rising a short distance the smooth column of smoke from a cigarette breaks up into an irregular and random pattern. In a similar fashion, a stream of fluid flowing past an obstacle breaks up into eddies and vortices which give the flow irregular velocity components transverse to the flow irregular velocity components transverse to the flow direction. Other examples include the wakes left in water by moving ships the sound produced by whistling and by wind instruments. These examples are the results of
  - (a) Laminar flow of air
  - (b) Streamline flow of air
  - (c) Turbulent flow of air
  - (d) Viscous flow at low speed
- **58.** Which one among the following correctly defines a unit magnetic pole in SI units? CDS [2013-II]
  - (a) 1 foot from an equal and a similar poled repels it with a force of 1 pound
  - (b) 1 m from an equal and a similar pole repels it with a force of 1  $\rm N$
  - (c) 1 cm from an equal and a similar pole repels it with a force of 1 dyne
  - (d) 1 metre from an equal and a similar pole repels it with a force of  $1 \text{ N/m}^2$

- **59.** Before X-ray examination (coloured X-ray) of the stomach, patients are given suitable salt of barium because
  - (a) Barium salts are white in colour and this helps stomach to appear clearly
  - (b) Barium is a good absorber of X-rays and helps stomach to appear clearly
  - (c) Barium salts are easily available
  - (d) Barium allows X-rays to pass through the stomach
- **60.** The best colors for a sun umbrella will be
  - (a) Black on top and red on inside
  - (b) Black on top and white on inside
  - (c) Red on top and black on inside
  - (d) White on top and black on inside
- **61.** When ice melts, its
  - (a) Volume increases
  - (b) Volume decreases
  - (c) Volume and mass both decrease
  - (d) Volume decreases while mass increases
- 62. In step-down transformer, the AC output gives the
  - (a) Current more than the input current
  - (b) Current less than the input current
  - (c) Current equal to the input current
  - (d) Voltage more than the input voltage
- 63. A rectifier is an electronic device used to convert
  - (a) AC voltage into DC voltage
  - (b) DC voltage into AC voltage
  - (c) Sinusoidal pulse into square pulse
  - (d) None of the above

**Direction (64):** The following question consist of two statements, Statement I and Statement II. You are to examine these two statements carefully and select the answers to these items using the codes given below.

## Codes:

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- (a) Both the statements are true and statement II is the correct explanation of statement I
- (b) Both the statements are true, but statement II is not the correct explanation of statement I
- (c) Statement I is true, but statement II is false
- (d) Statement I is false, but statement II is true
- **64.** Statement I: Pulling a lawn roller is easier than pushing it. Statement II: Pushing increases the apparent weight and hence the force of friction.



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- 65. It is difficult to cut things with a blunt knife because
  - (a) The pressure exerted by knife for a given force increases with increase in bluntness
  - (b) A sharp edge decreases the pressure exerted by knife for a given force
  - (c) A blunt knife decreases the pressure for a given force
  - (d) A blunt knife decreases the area of intersection
- **66.** When deep sea fishes are brought to the surface of the sea, their bodies burst. This is because the blood in their bodies flows at very
  - (a) High speed
  - (b) High pressure
  - (c) Low speed
  - (d) Low pressure
- **67.** A bus travels at a speed of 50 km/h to go from its origin of its destination at a distance of 300 km and travels at a speed of 60 km/h to return to the origin. What is the average speed of the bus?
  - (a) 55. 55 km/h
  - (b) 55 km/h
  - (c) 54.55 km/h
  - (d) 54 km/h

68. A device, which is used in our TV set, computer, radio set for storing the electric charge, is

- (a) Resistor
- (b) Inductor
- (c) Conductor
- (d) Capacitor

**69.** Which type/types of pen uses/use capillary action in addition to gravity for flow of ink?

- (a) Fountain pen
- (b) Ballpoint pen
- (c) Gel pen
- (d) Both ballpoint and gel pens
- **70.** If two conducting spheres are separately charged and then brought in contact
  - (a) The total charge on the two spheres is conserved
  - (b) The total energy of the two sphere is conserved
  - (c) Both the total energy and the total charge are conserved
  - (d) The final potential is always the mean of the original potential of the two spheres
- **71.** The gas used in a refrigerator is
  - (a) Cooled down on flowing
  - (b) Heated up on flowing
  - (c) Cooled down when compressed
  - (d) Cooled down when expanded

- 72. The Celsius temperature is a/an
  - (a) Relative temperature
  - (b) Absolute temperature
  - (c) Specific temperature
  - (d) Approximate temperature
- 73. Light Emitting Diode (LED) converts
  - (a) Light energy into electrical energy
  - (b) Electrical energy into light energy
  - (c) Thermal energy into light energy
  - (d) Mechanical energy into electrical energy
- 74. Dual Energy X-ray Absorptiometry (DEXA) is used to measure
  - (a) Spread of solid tumor
  - (b) Bone density
  - (c) Ulcerous growth in stomach
  - (d) Extent of brain hemorrhage
- **75.** The main source of energy in sun is
  - (a) Nuclear fusion
  - (b) Nuclear fission
  - (c) Chemical reaction
  - (d) Mechanical energy

76. By what mechanism does scent spread all over the room if the lid is opened?

- (a) Pressur<mark>e in the b</mark>ottle
- (b) Compression from the bottle
- (c) Diffusion
- (d) Osmosis
- 77. Which one among the following is not a correct statement?
  - (a) Cathode rays are negatively charged particles
  - (b) Cathode rays are produced from all the gases
  - (c) Electrons are basic constituents of all the atoms
  - (d) Hydrogen ions do not contain any proton

78. Which one among the following colors has the highest wavelength?

- (a) Violet
- (b) Green
- (c) Red
- (d) Yellow

- **79.** Dispersion process forms spectrum due to white light falling on a prism. The light wave with shortest wavelength
  - (a) Refracts the least
  - (b) Does not change the path
  - (c) Refracts the most
  - (d) Is reflected by the side of the prism
- **80.** Magnetic, electrostatic and gravitational forces come under the category of
  - (a) Non-contact forces
  - (b) Contact forces
  - (c) Frictional forces
  - (d) Non-frictional forces
- **81.** A ray of white light strikes the surface of an object. If all the colours are reflected the surface would appear
  - (a) Black
  - (b) White
  - (c) Grey
  - (d) opaque
- 82. Motion of an oscillating liquid column in a U-tube is
  - (a) Periodic but not simple harmonic
  - (b) Simple harmonic and time period is independent of the density of the liquid
  - (c) Non-periodic
  - (d) Simple harmonic and time period depend on the density of the liquid.
- **83.** Dirty cloths containing grease and oil stains are cleaned by adding detergents to water. Stains are removed because detergent
  - (a) Reduces drastically the surface tension between water and oil
  - (b) Increases the surface tension between water and oil
  - (c) Increases the viscosity of water and oil
  - (d) Decreases the viscosity in detergent mixed water
- **84.** You are asked to job in a circular track of radius 35 m. Right one complete round on the circular track, your displacement and distance covered by you respectively
  - (a) Zero and 220 m
  - (b) 220 m and zero
  - (c) Zero and 110 m
  - (d) 110 m and 220 m
- 85. When an incandescent electric bulb glows
  - (a) The electric energy is completely converted into light
  - (b) The electric energy is partly converted into light energy and partly into heat energy
  - (c) The light energy is converted into electric energy
  - (d) The electric energy is converted into magnetic energy

- **86.** In cricket match, while catching a fast moving ball, a fielder in the ground gradually pulls his hands backwards with the moving ball to reduce the velocity to zero. The act represents
  - (a) Newton's first law of motion
  - (b) Newton's second law of motion
  - (c) Newton's third law of motion
  - (d) Law of conservation of energy
- **87.** Two layers of a cloth of equal thickness provide warmer covering than a single layer of cloth with double the thickness. Why?
  - (a) Because of the air encapsulated between two layers
  - (b) Since effective thickness of two layers is more
  - (c) Fabric of the cloth plays the role
  - (d) Weaving of the cloth plays the role
- **88.** A mobile phone charger is
  - (a) A step-down transformer
  - (b) A UPS
  - (c) An inverter
  - (d) A step-up transformer
- 89. No matter how far you stand from a mirror, your image appears erect. The mirror is likely to be
  - (a) Either plane or convex
  - (b) Plane only
  - (c) Concave
  - (d) Convex only
- **90.** The position, relative size and nature of the image formed by a concave lens for an object placed at infinity are respectively
  - (a) At focus, diminished and virtual
  - (b) At focus, diminished and real
  - (c) Between focus and optical Centre, diminished and virtual
  - (d) Between focus and optical Centre, magnified and real
- **91.** The upper and lower portions in common type of bi-focal lenses are respectively
  - (a) Concave and convex
  - (b) Convex and concave
  - (c) Both concave of different focal lengths
  - (d) Both convex of different focal lengths
- 92. Tungsten is used for the construction of filament in electric bulb because of its
  - (a) High melting point

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- (b) Low specific resistance
- (c) High light emitting power
- (d) High specific resistance



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- 93. Inactive Nitrogen and Argon gases are usually used in electric bulbs in order to
  - (a) Increase the intensity of light emitted
  - (b) Increase the life of the filament
  - (c) Make the emitted light coloured
  - (d) Make the production of bulb economical
- 94. In the phenomenon of dispersion of light, the light wave of shortest wavelength is
  - (a) Accelerated and refracted the most
  - (b) Slowed down and refracted the most
  - (c) Accelerated and refracted the least
  - (d) Slowed down and refracted the least
- 95. An oscilloscope is an instrument which allows us to see waves produced by
  - (a) Visible light
  - (b) X-rays
  - (c) Sound
  - (d) Gamma rays
- The distribution of electrons into different orbits of an atom, as suggested by Bohr; is 96.
  - (a) 2 electrons in the K-orbit, 6 electrons in the L-orbit, 18 electrons in the M-orbit
  - (b) 2 electrons in the K-orbit, 8, electrons in the L-orbit, 32 electrons in the M-orbit
  - (c) 2 electrons in the K-orbit, 8 electrons in the L-orbit, 18 electrons in the M-orbit
  - (d) 2 electrons in the K-orbit, 8 electrons in the L-orbit, 16 electrons in the M-orbit
- Carbon or Graphite rods are used in atomic reactors as moderators for sustained nuclear chain 97. reaction through nuclear fission process. In this process
  - (a) The neutrons are made fast
  - (b) The protons are made fast
  - (c) The neutrons are made slow
  - (d) The protons are made slow
- 98.



The distance-time graph for an object is shown above. Which one of the following statements holds true for this object?

- (a) The object is moving with uniform speed
- (b) The object is at rest
- (c) The object is having non-linear motion
- (d) The object is moving with non-uniform speed

- **99.** For a harmonic oscillator, the graph between momentum p and displacement q would come out as
  - (a) A straight line
  - (b) A parabola
  - (c) A circle
  - (d) An ellipse

**Direction (100):** The following questions consist of two statements, Statement II. You are to examine these two statements carefully and select the answers to these items using the code given below: Code:

- (a) Both the statements are individually true and Statement II is correct explanation of Statement I.
- (b) Both the statements are individually true, but Statement II is the correct explanation of Statement I.
- (c) Statement I is true, but Statement II is false.
- (d) Statement I is false, but statement II is true.
- **100.** Statement I: When a gun is fired it recoils, i.e., it pushes back, with much less velocity than the velocity of the bullet.

Statement II: Velocity of the recoiling gun is less because the gun is much heavier than the bullet.

- **101.** In an observation,  $\alpha$ -particles,  $\beta$ -particles and  $\gamma$ -rays have same energies. Their penetrating power in a given medium in increasing order will be
  - (a) α, β, γ
  - (b) β, γ, α
  - (c) α, γ, β
  - (d) β, α, γ
- **102.** A person standing 1 m in front of a plane mirror approaches the mirror by 40 cm. The new distance between the person and his image in the plane mirror is
  - (a) 60 cm
  - (b) 1.2 m
  - (c) 1.4 m
  - (d) 2.0 m
- **103.** In respect of the difference of the gravitational force from electric and magnetic forces, which one of the following statements is true?
  - (a) Gravitational force is stronger than the other two.
  - (b) Gravitational force is attractive only, whereas the electric and the magnetic forces are attractive as well as repulsive.
  - (c) Gravitational force has a very short range.
  - (d) Gravitational force is a long range force, while the other two are short range forces.



- **104.** Creation of something from nothing is against the law of
  - (a) Constant proportions
  - (b) conservation of mass-energy
  - (c) Multiple proportions
  - (d) Conservation of momentum
- **105.** An electron and a proton are circulating with same speed in circular paths of equal radius. Which one among the following will happen, if the mass of a proton is about 2,000 times that of an electron?
  - (a) The centripetal force required by the electron is about 2,000 times more than that required by the proton
  - (b) The centripetal force required by the proton is about 2,000 times more than that required by the electron
  - (c) No centripetal force is required for any charged particle
  - (d) Equal centripetal force acts on both the particles as they rotate in the same circular path
- **106.** An object is raised to a height of 3 m from the ground. It is then allowed to fall on to a table 1 m high from ground level. In this context, which one among the following statements is correct?
  - (a) Its potential energy decreases by two-thirds its original value of total energy
  - (b) Its potential energy decreases by one-third its original value of total energy
  - (c) Its kinetic energy increases by two-thirds, while potential energy, increases by one-third.
  - (d) Its kinetic energy increases by one-third, while potential energy increases by one-third
- **107.** Two pieces of conductor of same material and of equal length are connected in series with a cell. One of the two pieces has cross-sectional area double that of the other. Which one of the following statements is correct in this regard?
  - (a) The thicker one will allow stronger current to pass through it.
  - (b) The thinner one would allow stronger current to pass through it.
  - (c) Same amount of electric current would pass through both the pieces producing more heat in the thicker one.
  - (d) Same amount of electric current would pass through both the pieces producing more heat in the thinner one.
- **108.** A wire-bound standard resistor used manganic or constantan. It is because
  - (a) These alloys are cheap and easily available
  - (b) They have high resistivity
  - (c) They have low resistivity
  - (d) They have resistivity which almost remains unchanged with temperature
- **109.** Which one among the following is used in making lead pencils?
  - (a) Charcoal
  - (b) Graphite
  - (c) Coke
  - (d) Carbon black

- **110.** Sodium metal should be stored in
  - (a) Alcohol
  - (b) Kerosene oil
  - (c) Water
  - (d) Hydrochloric acid
- **111.** A body is falling freely under the action of gravity alone in vacuum. Which one of the following remains constant during the fall?
  - (a) Potential energy
  - (b) Kinetic energy
  - (c) Total linear momentum
  - (d) Total mechanical energy
- **112.** X-rays are
  - (a) Deflected by an electric field but not by a magnetic field
  - (b) Deflected by a magnetic field but not by an electric field
  - (c) Deflected by both a magnetic field and an electric field
  - (d) Not deflected by an electric field or a magnetic field
- **113.** The focal length of the lens of a normal human eye is about
  - (a) 25 cm
  - (b) 1 m
  - (c) 2.5 mm
  - (d) 2.5 cm
- **114.** Newton's laws of motion do not hold good for objects
  - (a) At rest
  - (b) Moving slowly
  - (c) Moving with high velocity
  - (d) Moving with velocity comparable to velocity of light
- **115.** Which one of the following statements is not correct?
  - (a) Weight of a body is different on different planets
  - (b) Mass of body on the earth, on the moon and in empty space is the same
  - (c) Weightlessness of a body occurs when the gravitational forces acting on it are counterbalanced.
  - (d) Weight and mass of a body are equal at sea level on the surface of the earth.
- **116.** A brick is thrown vertically from an aircraft flying two kilometers above the earth. The brick will fall with a
  - (a) Constant speed
  - (b) Constant velocity
  - (c) Constant acceleration
  - (d) Constant speed for some time then with constant acceleration as it nears the earth
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- **117.** The outside rearview mirror of modern automobiles is marked with warning "objects in mirror are closer than they appear".
  - Such mirrors are
  - (a) Plane mirrors
  - (b) Concave mirrors with very large focal lengths
  - (c) Concave mirrors with very small focal lengths
  - (d) Convex mirrors
- **118.** Which one of the following statements is not correct?
  - (a) Sounds wave in gases are longitudinal in nature
  - (b) Sounds wave having frequency below 20 Hz are known as ultrasonic waves
  - (c) Sounds waves having higher amplitudes are louder
  - (d) Sounds waves with high audible frequencies are sharp
- **119.** A myopic person has a power of 1.25 diopter, what is the focal length and nature of his lens?
  - (a) 50 cm and convex lens
  - (b) 80 cm and convex lens
  - (c) 50 cm and convex lens
  - (d) 80 cm and concave lens
- **120.** Which one of the following about bar magnet is correct?
  - (a) The pole strength of the north-pole of a bar magnet is larger than that of the south-pole
  - (b) When a piece of bar magnet is bisected perpendicular to its axis, the north and South Pole get separated
  - (c) When a piece of bar magnet is bisected perpendicular to its axis two new bar magnets are formed
  - (d) The poles of a bar magnet are unequal in magnitude and opposite in nature

### **Chemistry**

121. Match List I with List II and select the correct answer using the codes given below the Lists.

					List I				List II	
				(	(Mineral)				(Industries in which larg	gely used)
	A. Limestone				1		Cement			
		B.			Copper		2		Electrical good	s
	(	C.			Bauxite		3		Manufacture of aero	planes
	]	D.		N	langanese		4		Steel	
Ċ	ode	es								
	A	A E	3	С	D					
(a	ı) 3	4	Ł	1	2					
(ł	)1	4	Ł	3	2					
(c	:) 3	2	2	1	4					
(0	ł) 1	2	2	3	4					
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- **122.** The flavor of apple is mainly due to which one of the following?
  - (a) Formalin
  - (b) Ethanol
  - (c) Benzene
  - (d) Benzaldehyde

**123.** Nail varnish remover generally contains which one of the following?

- (a) Acetone
- (b) Benzene
- (c) Methyl alcohol
- (d) Vinegar
- **124.** In which categories did Marie Curie win her two different Nobel prizes?
  - (a) Physics and Chemistry
  - (b) Chemistry and Medicine
  - (c) Physics and Medicine
  - (d) Chemistry and Peace
- **125.** 'Freon' used as refrigerants is chemically known as
  - (a) chlorinated hydrocarbon
  - (b) chlorofluoro hydrocarbon
  - (c) fluorinated hydrocarbon
  - (d) fluorinated aromatic compound
- **126.** German silver is an alloy of
  - (a) gold and silver
  - (b) copper and silver
  - (c) copper, zinc and silver
  - (d) copper, zinc and nickel
- **127.** The tracking of people by trained dogs is based on the recognition of which of the following compounds in the sweat from feet?
  - (a) Salt
  - (b) Uric acid
  - (c) Sugar
  - (d) Carboxylic acids
- **128.** Which of the following metals are present in hemoglobin and chlorophyll, respectively?
  - (a) Fe and Zn
  - (b) Fe and Mg
  - (c) Mg and Zn
  - (d) Zn and Mg



- **129.** Which one of the following is involved for desalination of sea water?
  - (a) Simple osmosis
  - (b) Reverse osmosis
  - (c) Use of sodium aluminum silicate as zeolite
  - (d) Use of ion selective electrodes

**130.** Which of the following isotopes of carbon is/are used in carbon dating?

- (a)  ${}_{6}C^{12}$  only
- (b)  ${}_{6}C^{14}$  only
- (c)  ${}_{6}C^{13}$  only
- (d)  ${}_{6}C^{12}$  and  ${}_{6}C^{14}$
- **131.** An α-particle consists of which of the following?
  - (a) 2 protons and 2 neutrons
  - (b) 1 proton and 1 electron
  - (c) 2 protons and 4 neutrons
  - (d) 1 proton and 1 neutrons
- **132.** Which one of the following substances is made from natural raw materials?
  - (a) Rayon
  - (b) Nylon
  - (c) Polyester
  - (d) Polystyrene

**133.** Which one of the following metals is less reactive than hydrogen?

- (a) Barium
- (b) Copper
- (c) Lead
- (d) Magne<mark>sium</mark>
- **134.** Consider the following statements
  - 1. Nitric acid is used in the production of fertilizers.
  - 2. Sulphuric acid is used in the production of explosives.

Which of the statements given above is/are correct?

- (a) Only 1
- (b) Only 2
- (c) Both 1 and 2
- (d) Neither 1 nor 2
- **135.** What is the purpose of adding baking soda to dough?
  - (a) To generate moisture
  - (b) To give a good flavor
  - (c) To give good color
  - (d) To generate carbon dioxide

- **136.** As which one of the following, does carbon occur in its purest form in nature?
  - (a) Graphite
  - (b) Coal
  - (c) Diamond
  - (d) None of These
- **137.** What is the Jeweller's rouge?
  - (a) Ferric oxide
  - (b) Ferrous oxide
  - (c) Ferrous carbonate
  - (d) Ferric carbonate
- **138.** 'Misch metal' is widely used in the manufacture of which of the following?
  - (a) Material of car brake
  - (b) Cigarette lighters
  - (c) Smoke detectors
  - (d) Emergency lights
- **139.** What is the pH value of pure water?
  - (a) 1
  - (b) 6
  - (c) 7
  - (d) 10
- **140.** Which one of the following is an element?
  - (a) Topaz
  - (b) Diamond
  - (c) Ruby
  - (d) Sapphire

141. Which one of the following substances is used in the manufacture of safety matches?

- (a) Red phosphorus
- (b) White phosphorus
- (c) Phosphorus trioxide (P203)
- (d) Black phosphorus
- **142.** Which one of the following is correct? Butter is
  - (a) a supercooled oil
  - (b) a gel
  - (c) a molecular solid
  - (d) None of these

- **143.** Which one of the following is the softest?
  - (a) Copper
  - (b) Aluminum
  - (c) Iron
  - (d) Sodium

**144.** Which one of the following properties changes with valency?

- (a) Atomic weight
- (b) Equivalent weight
- (c) Molecular weight
- (d) Density
- **145.** Which of the following has maximum density?
  - (a) Chloroform
  - (b) Water
  - (c) Benzene
  - (d) Ice

**146.** Which one of the following is used in the preparation of antiseptic solution?

- (a) Potassium nitrate
- (b) Iodine
- (c) Iodine chloride
- (d) Potassium chloride

**147.** Which one of the following is not a chemical change?

- (a) Burning of coal in air
- (b) Fermentation of sugar cane juice
- (c) Cracking of petroleum
- (d) Crystallization of table salt from sea water
- **148.** Statement I: Addition of water to an aqueous solution of HCLdecreases the PH. Statement II: Addition of water suppresses the ionization of HCL.
  - (a) Both the statements are individually true and Statement II is the correct explanation of Statement I
  - (b) Both the statements are individually true and Statement II is the correct explanation of Statement I
  - (c) Statement I is true, but Statement II is false
  - (d) Statement I is false, but Statement II is true
- **149.** Which one of the following is the secondary source of light in a fluorescent lamp?
  - (a) Neon gas
  - (b) Argon gas
  - (c) Fluorescent coating
  - (d) Mercury vapor

- 150. Which one of the following is correct? Setting of plaster of Pairs is
  - (a) dehydration
  - (b) oxidation with atmospheric oxygen
  - (c) hydration leading to another hydrate
  - (d) combination with atmospheric  $CO_2$
- **151.** Which one of the following is heavy water used in nuclear reactor?
  - (a) Water having molecular weight 18 u
  - (b) Water having molecular weight 20 u
  - (c) Water at 4°C but having molecular weight 19 u
  - (d) Water below the ice in a frozen sea
- **152.** The rusting of iron nail
  - (a) decreases its weight
  - (b) increases its weight
  - (c) does not affect weight but iron is oxidized
  - (d) does not affect weight but iron is reduced
- **153.** Which one of the following when dissolved in  $H_2O$  gives hissing sound?
  - (a) Limestone
  - (b) Slaked lime
  - (c) Soda lime
  - (d) Quicklime
- 154. Commercial vulcanization of rubber involves
  - (a) Sulphur
  - (b) carbon
  - (c) phosphorus
  - (d) selenium
- **155.** Aqua-regia used by alchemists to separate silver and gold is a mixture of
  - (a) hydrochloric acid (concentrated) and nitric acid (concentrated)
  - (b) hydrochloric acid (concentrated) and sulphuric acid (concentrated)
  - (c) nitric acid (concentrated) and sulphuric acid (concentrated)
  - (d) hydrochloric acid (dilute) and sulphuric acid (dilute)
- **156.** Nail polish remover contains
  - (a) acetone
  - (b) benzene
  - (c) formaldehyde
  - (d) acetic acid

- **157.** Statement I: Soaps do not form lather with water containing salts of calcium and magnesium. Statement II: Calcium and magnesium salt of long chain fatty acids are insoluble in water.
  - (a) Both the statements are individually true and Statement II is the correct explanation of statements I.
  - (b) Both the statements are individually true but Statement II is not the correct explanation of Statement I.
  - (c) Statement I is true, but Statement II is false.
  - (d) Carbon monoxide
- **158.** Which one of the following is associated with the formation of brown air in traffic congested cities?
  - (a) Nitrogen oxide
  - (b) Sulphur dioxide
  - (c) Carbon dioxide
  - (d) Carbon monoxide
- **159.** Which one of the following petroleum refinery products has the lowest boiling point?
  - (a) Kerosene
  - (b) Gasoline
  - (c) Diesel
  - (d) Lubricating oil

160. Which one of the following is used as a mordant in dyeing and tanning industry?

- (a) Magnesi<mark>um</mark> oxide
- (b) Magnesium carbonate
- (c) Magnesium chloride
- (d) Magnesium sulphate
- **161.** Which of the following statements about the commonly used automobile battery are true? I. It is usually a lead-acid battery.
  - II. It has six cells with a potential of 2 V each.
  - III. Its cells work as galvanic cells while discharging power.
  - IV. Its cells work as electrolytic cells while recharging.
  - Select the correct answer using the codes given below
  - (a) I, II, III and IV
  - (b) I, II and III
  - (c) II and IV
  - (d) III and IV

## **162.** The light emitted by firefly is due to

- (a) a radioactive substance
- (b) burning of phosphorus
- (c) a photoelectric process
- (d) chemiluminescence process

- **163.** Which one of the following polymeric materials is used for making bullet proof jacket?
  - (a) Nylon-6, 6
  - (b) Rayon
  - (c) Kevlar
  - (d) Dacron
- **164.** The coil in a heater is made of
  - (a) nichrome
  - (b) tungsten
  - (c) copper
  - (d) iron



- **165.** Which among the following elements is abundant on the lunar surface and holds the potential to put an end to the energy crisis of the earth?
  - (a) Helium-I
  - (b) Helium-II
  - (c) Helium-III
  - (d) Helium-IV

**166.** If a limestone piece is dipped in water, a bubble evolves. The bubbling is due to

- (a) hydrogen
- (b) oxygen
- (c) water vapor
- (d) carbon dioxide
- **167.** Which one of the following chemicals is commonly used by farmers to destroy weeds? (a) DDT
  - (b) Malathion
  - (c) 2, 4-D
  - (d) Methyl bromide
- **168.** Some statements about the benefits of organic farming are given below. Indicate whether they are true or false using the codes given below the statements:
  - 1. It reduces  $CO_2$  emission.
  - 2. It does not lead to toxic effect.
  - 3. It improves the water-retention capacity of the soil.

## Codes

(a)	1	2	3
	False	True	False
(b)	1	2	3
	True	False	False
(c)	1	2	3
	False	e True	True
(d)	1	2	3
	False	e True	True

- **169.** Which of the following is the softest?
  - (a) Sodium
  - (b) Iron
  - (c) Aluminum
  - (d) Copper
- **170.** Match List I with List II and select the correct answer using the codes given below the Lists.

	List I		List II	
	(Alloy)		(Constituent)	
A.	Solder	1	Iron and carbon	
B.	Brass	2	Copper and zinc	
C.	Bronze	3	Copper and tin	
D.	Steel	4	Lead and tin	
Codes				

Α	B	С	D
(a) 1	2	3	4
(b) 4	2	3	1
(c) 1	3	2	4
(d) 4	3	2	1

- **171.** The polymeric fiber used as a substitute for wool in making synthetic blankets, sweaters, etc., is
  - (a) nylon
  - (b) Teflon
  - (c) Bakelite
  - (d) orlon
- **172.** The cleaning of dirty clothes by soaps and detergents is due to a type of molecules called surfactants, which are present in soaps and detergents. The surfactant molecules remove the dirt by
  - (a) making the cloth slippery
  - (b) producing some gases between the dirt and the cloth
  - (c) dissolving the dirt
  - (d) forming some aggregates of themselves and take away the dirt in the core of the aggregates
- **173.** Which one of the following is not a mixture?
  - (a) Baking soda
  - (b) Toilet soap
  - (c) Toothpaste
  - (d) Vinegar

**174.** Which one of the following reducing agents can also act as an oxidizing agent?

- (a)  $H_2$
- (b)  $H_2 S$
- (c) *SO*<sub>2</sub>
- (d) HI

- **175.** Consider the following statements regarding the properties and uses of glass wool.
  - I. Glass wool has tensile strength greater than steel.
  - II. Glass wool is fire proof.
  - III. Glass wool has high electrical conductivity and absorbs moisture.
  - IV. Glass wool is used to prepare fibre glass.
  - Which of the statements given above are correct?
  - (a) I and II
  - (b) I, II and IV
  - (c) II and IV
  - (d) I, III and IV
- 176. Which one among the following has been producing / can produce light by a chemical change?(a) Sun
  - (b) Moon
  - (c) Electric bulb
  - (d) Lightning and thunder
- **177.** A woman desire to clean the surface of her gold ornaments by a chemical approach. For this she requires to use
  - (a) concentrated NaOH
  - (b) concentrated  $H_2SO_4$
  - (c) aqua-regia
  - (d) sodium thiosulphate solution

**Direction (178-179):** The following questions consist of two statements. Statement I and Statement II. You are to examine these two statements carefully and select the answers to these items using the codes given below.

- (a) Both the statements are individually true and Statement II is the correct explanation of Statement I.
- (b) Both the statements are individually true but Statement II is not the correct explanation of Statement I.
- (c) Statement I is true, but Statement II is false.
- (d) Statement I is false, but Statement II is true.
- **178.** Statement I: During the setting of cement, the structure has to be cooled by spraying water. Statement II: The constituents of cement undergo hydration during setting of cement and it is an exothermic reaction.
- **179.** Statement I: Superphosphate of lime can be assimilated by plants. Statement II: Superphosphate of lime is soluble in water.
- **180.** Which one of the following is not a periodic property i.e., does not show any trend on moving from one side to the other in the periodic table?
  - (a) Atomic size
  - (b) Valency
  - (c) Radioactivity
  - (d) Electronegativity

- **181.** The law enforcement agencies use a chemical test to approximate a person's blood alcohol level. The person underpinning the test blows into the mouthpiece of a bag containing sodium dichromate solution in acidic medium. A chemical reaction with ethanol changes the colour of the solution from
  - (a) orange to green
  - (b) orange to colourless
  - (c) yellow to orange
  - (d) colourless to orange
- **182.** Scuba divers are at risk due to high concentration of dissolved gases while breathing air at high pressure under water. The tanks used by Scuba divers are filled with
  - (a) air diluted with helium
  - (b)  $0_2$
  - (c) N<sub>2</sub>
  - (d) a mixture of  $N_2$  and helium
- **183.** Which one of the following is not needed in a nuclear fission reactor?
  - (a) Moderator
  - (b) Coolant
  - (c) Accelerator
  - (d) Control device
- **184.** When items or jewellery made of metals such as copper or nickel are placed in a solution having a salt of gold, at thin film of gold is deposited by
  - (a) cooling to below 0°C
  - (b) heating above 100°C
  - (c) passing an electric current
  - (d) just keeping it for 10 min

### **185.** Heavy water implies

- (a) water which is used in heavy industries such as thermal power plants
- (b) water which contains  $SO_4^{2-}$  and  $CI^-$  of calcium and magnesium
- (c) deuterated water
- (d) water which has maximum density
- **186.** Which one among the following is a sin smelling agent added to LPG cylinder to help the detection of gas leakage?
  - (a) Ethanol
  - (b) Thio-ethanol
  - (c) Methane
  - (d) Chloroform

- **187.** A body is charged negatively. It implies that
  - (a) it has lost some of its protons
  - (b) it has acquired some electrons from outside
  - (c) it has lost some of its electrons
  - (d) None of the above
- **188.** Which one among the following metals is used for making boats because it does not corrode by sea water?
  - (a) Tungsten
  - (b) Nickel
  - (c) Antimony
  - (d) Titanium
- **189.** Contact lenses are made from
  - (a) polyvinyl chloride
  - (b) polystyrene
  - (c) lucite
  - (d) Teflon



- **190.** Water is a good coolant and is used to cool the engines of cars, buses, trucks etc. It is because water has a
  - (a) high specif<mark>ic h</mark>eat
    - (b) low surface tension
    - (c) high boiling point
  - (d) Teflon
- **191.** A close bottle containing water at room temperature was taken to the Moon and then the lid is opened. The water will
  - (a) freeze
  - (b) boil
  - (c) decompose into oxygen and hydrogen
  - (d) not change at all
- **192.** Which one among the following substances evolves heat when dissolved in water?
  - (a) Potassium nitrate
  - (b) Sodium chloride
  - (c) Glucose
  - (d) Calcium oxide

**193.** Which one among the following would expand the most on being heated?

- (a) water
- (b) Alcohol
- (c) Glass
- (d) Air

**194.** Match List I with List II and select the correct answer using the codes given below the lists.

	List I		List II
	(Acid)		(Source)
A.	Lactic acid	1	Tamarind
B.	Tartaric acid	2	Orange
C.	Oxalic acid	3	Tomato
D.	Citric acid	4	Sour curd

#### Codes

	Α	В	С	D
(a)	2	3	1	4
(b)	2	1	3	4
(c)	4	3	1	2
(d)	4	1	3	2

**195.** One of the occupational health hazards commonly faced by the workers of ceramics, pottery and glass industry is

(a) stone formation in gall bladder

- (b) melanoma
- (c) silicosis
- (d) stone formation in kidney
- **196.** Sacrificial anode protects iron or ships, underground pipelines etc from rusting, a process known as cathodic protection. Which one of the following metals cannot be used as a sacrificial anode?
  - (a) Tin
  - (b) Zinc
  - (c) Magnesium
  - (d) Aluminum
- **197.** Sodium thiosulphate  $(Na_2S_2O_3)$  solution is used in photography to
  - (a) remove reduced silver
  - (b) reduce silver bromide (AgBr) grain to silver
  - (c) remove undecomposed AgBr as a soluble silver thiosulphate complex
  - (d) convert the metallic silver to silver salt

**Direction (198-200):** The following questions consist of two statements. Statement I and Statement II. You are to examine these two statements carefully and select the answer to these items using the codes given below.

- (a) Both the statements are individually true and statement II is the correct explanation of Statement I.
- (b) Both the statements are individually true but Statement II is not the correct explanation of Statement I.
- (c) Statement I is true, but Statement II is false.
- (d) Statement I is false, but Statement II is true
- **198.** Statement I: Oxides of Sulphur and nitrogen present in high concentration in air are dissolved in rain drops.

Statement II: Oxyacids of Sulphur and nitrogen make rain water acidic.

- **199.** Statement I: On mixing with water, plaster of Paris hardens. Statement II : By combining with water, plaster of Paris is converted into gypsum. CaS04-2Hp Gypsum
- 200. Statement I : All liquids are conductors of electricity. Statement II : Under the condition of low pressure and high voltage, liquids can be made conducting.
- **201.** Gypsum ( $CaSO_4$ .  $2H_2O$ ) is added to clinker during cement manufacturing to
  - (a) decrease the rate of setting of cement
  - (b) bind the particles of calcium silicate
  - (c) facilitate the formation of colloidal gel
  - (d) impart strength to cement
- **202.** Which one among the following will you put into pure water in order to pass electric current through it?
  - (a) Kerosene
  - (b) Mustard oil
  - (c) Lemon juice
  - (d) Sugar
- **203.** From which one among the following water source, the water is likely to be contaminated with fluoride?
  - (a) Ground water
  - (b) River water
  - (c) Pond water
  - (d) Rain water
- **204.** What is the main constituent of a pearl?
  - (a) Calcium carbonate and magnesium carbonate
  - (b) Calcium sulphate only
  - (c) Calcium oxide and calcium sulphate
  - (d) Calcium carbonate only
- **205.** Age of fossil may be found out by determining the ratio of two isotopes of carbon. The isotopes are
  - (a) C-12 and C-13
  - (b) C-13 and C-14
  - (c) C-12 and C-14
  - (d) C-12 and carbon black
- **206.** Which one among the following nontoxic gases helps in formation of enzymes which ripen fruit?
  - (a) Acetylene
  - (b) Ethane
  - (c) Methane
  - (d) Carbon dioxide

- **207.** Vermicompost is an/a
  - (a) inorganic fertilizer
  - (b) toxic substance
  - (c) organic bio fertilizer
  - (d) synthetic fertilizer
- 208. The macro nutrients provided by inorganic fertilizer are
  - (a) carbon, iron and boron
  - (b) magnesium, manganese and Sulphur
  - (c) magnesium, zinc and iron
  - (d) nitrogen, phosphorous and potassium
- **209.** Which one among the following statement **ab**out an atom is not correct?
  - (a) Atoms always combine to form molecules
  - (b) Atoms are the basic units from which molecules and ions are formed
  - (c) Atoms are always neutral in nature
  - (d) Atoms aggregate in large numbers to form the matter that we can see, feel and touch
- **210.** Which one of the following reactions is the main cause of the energy radiation from the Sun?
  - (a) Fusion reaction
  - (b) Fission reaction
  - (c) Chemical reaction
  - (d) Diffusion reaction
- **211.** Which one among the following statements is correct?
  - (a) All bases are alkalis
  - (b) None of the bases is alkali
  - (c) there are no more bases except the alkalis
  - (d) All alkalis are bases but all bases are not alkalis
- 212. The pH of fresh ground water slightly decreases upon exposure to air because
  - (a) carbon dioxide from air is dissolved in the water
  - (b) oxygen from air is dissolved in the water
  - (c) the dissolved carbon dioxide of the ground water escapes into air
  - (d) the dissolved oxygen of the ground water escapes into air
- **213.** Which one among the following polymers is used for making bulletproof material?
  - (a) Polyvinyl chloride
  - (b) Polystyrene
  - (c) Polyethylene
  - (d) Polyamide
- **214.** The elements of a group in the periodic table
  - (a) have similar chemical properties
  - (b) have consecutive atomic numbers
  - (c) are isobars
  - (d) are isotopes
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- **215.** Soaps cannot be used in acidic condition because they lose their cleansing effect due to formation of insoluble
  - (a) esters
  - (b) alcohols
  - (c) hydrocarbons
  - (d) long chain fatty acids
- **216.** In an atomic explosion, release of large amount of energy is due to conversion of
  - (a) chemical energy into nuclear energy
  - (b) nuclear energy into heat
  - (c) mass into energy
  - (d) chemical energy into heat

**Direction (217):** the following question consist of two statements. Statement I and Statement II. You are to examine these two statements carefully and select the answer to this question using the codes given below.

- (a) Both the statements are individually true and Statement II is the correct explanation of Statement I
- (b) Both the statements are individually true but Statement II is not the correct explanation of Statement I
- (c) Statement I is true, but Statement II is false
- (d) Statement I is false, but Statement II is true
- **217.** Statement I: All compounds contain more than one element. Statement II: All compounds are heterogeneous mixtures.
- **218.** The gas which turns lime water milky is
  - (a) carbon dioxide
  - (b) carbon monoxide
  - (c) ammonia
  - (d) nitrogen dioxide
- **219.** On the labels of the bottles, some soft drinks are claimed to be acidity regulators. They regulate acidity using
  - (a) carbon dioxide
  - (b) bicarbonate salts
  - (c) Both (a) and (b)
  - (d) carbon dioxide and lime
- **220.** Antacids are commonly used to get rid of acidity in the stomach. A commonly used antacid is (a) sodium hydrogen phthalate
  - (b) magnesium hydroxide
  - (c) calcium hydroxide
  - (d) manganese acetate

**221.** Consider the following

Enzymes and protein can be correlated with each other in the following ways

- 1. All proteins are enzyme.
- 2. All enzymes are protein.
- 3. All enzymes are not protein.
- 4. All proteins are not enzyme.

Which of the above are correct?

- (a) 2 and 4
- (b) 1 and 4
- (c) 1, 2 and 3
- (d) 2, 3 and 4

**222.** Consider the following statements in respect of thyroid gland.

- 1. It is situated in the neck.
- 2. It is vital to maintain of normal body temperature.

Which of the statements given above is/are correct?

- (a) Only 1
- (b) Only 2
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**223.** Which one of the following is not a constituent of biogas?

- (a) Methane
- (b) Carbon dioxide
- (c) Hydrogen
- (d) Nitrogen dioxide

**224.** A mother of blood group O has a group O child. What could be the blood group of father of the child?

- (a) A or B or O
- (b) Only O
- (c) A or B
- (d) Only AB
- **225.** What does sphygmomanometer measure?
  - (a) Temperature
  - (b) Velocity of fluids
  - (c) Blood pressure
  - (d) Curvature of spherical surfaces

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- **226.** What does water gas comprise of?
  - (a) Carbon dioxide and hydrogen
  - (b) Carbon monoxide and hydrogen
  - (c) Carbon monoxide and methane
  - (d) Carbon dioxide and methane

**227.** Which one of the following causes the chikungunya disease?

- (a) Virus
- (b) Helminthic worm
- (c) Protozoan
- (d) Bacteria

**228.** Which one of the following vitamins is abundant in guava fruits?

- (a) Vitamin-A
- (b) Vitamin-*B*<sub>12</sub>
- (c) Vitamin-D
- (d) Vitamin-C

**229.** Which one of the following vitamins helps in clotting of blood?

- (a) Vitamin-A
- (b) Vitamin- $B_6$
- (c) Vitamin-K
- (d) Vitamin-D

230. Which one of the following glands in the human body stores iodine?

- (a) Parathyroid
- (b) Pituitary
- (c) Thyroid
- (d) Adrenal

**231.** Which one of the following diseases are preventable by vaccine?

- 1. Tetanus
- 2. Polio
- 3. Leprosy
- 4. Pertussis

Select the correct answer using the code given below

- (a) 2 and 4
- (b) 1 and 3
- (c) 1, 2 and 4
- (d) All of these

- 232. In the context of ecology and environment, what does the Red Data Book pertain to?
  - (a) Details of harmful levels of various pollutants
  - (b) A complete list of all endangered plants and animals
  - (c) A description of the consequences of nuclear holocaust
  - (d) A description of the sociological and psychological consequence of genetically modified plants and animals
- **233.** Which of the following is not a bird?
  - (a) Emu
  - (b) Bat
  - (c) Kiwi
  - (d) Ostrich
- **234.** Match the following lists.

	List	I (Sci	entist	t)	List II (Work)		
A	A. F G Banting				1. Vaccination for small pox		
В	B. J Lister				2. Germ theory		
С	C. Louis Pasteur				3. Use of carbolic acid as an antiseptic		
D	. E Jeni	ner			4. Discovery of insulin		
Cod	es						
	Α	В	С	D			
(a)	43	2	1				

235. Which of the following part of blood carry out the function of body defense?

(a) Red blood cells

42

3

1

(b)

(c)

(d)

1

4

4

3

2

3

1

2

- (b) White blood cells
- (c) Platelets
- (d) Hemoglobin's
- **236.** Match the following

List I (Disease)	List II (Part of Human Body Affected)					
A. Conjunctivitis	1. Eyes					
B. Dermatitis	2. Joints					
C. Gout	3. Skin					
D. Meningitis	4. Spinal cord					
Codes						

	Α	В	С	D	
(a)	2	4	1	3	
(b)	1	3	2	4	
(c)	2	3	1	4	
(d)	1	4	2	3	

- **237.** Which one of the following is not an insect borne disease?
  - (a) Kala-azar
  - (b) Beri-beri
  - (c) Malaria
  - (d) Plague

238. Which of the following gases is released from rice fields in the most prominent quantities?

- (a) Carbon dioxide
- (b) Methane
- (c) Carbon monoxide
- (d) Sulphur dioxide
- **239.** Consider the following statements.
  - 1. Cigarette smoking exposes a person to benzene.
  - 2. Benzene is a known carcinogen.
  - Which of the statements given above is/are correct?
  - (a) Only 1
  - (b) Only 2
  - (c) Neither 1 nor 2
  - (d) Both 1 and 2

240. Which one of the following glands produces the growth hormone (somatotropin)?

- (a) Adrenal
- (b) Pituitary
- (c) Pancreas
- (d) Thyroid

241. In the human body, Cowper's glands produce the growth hormone (somatotrophin)?

- (a) Adrenal
- (b) Pancreas
- (c) Pituitary
- (d) Thyroid

242. Cloves, used as a spice, are derived from which of the following plant parts?

- (a) Seeds
- (b) Fruits
- (c) Young leaves
- (d) Flower buds

**243.** Which one among the following kinds of organisms resides in the roots of pulse to do nitrogen fixation?

- (a) Fungi
- (b) Bacteria
- (c) Protozoa
- (d) Virus

- **244.** The persons working in textile factories such as carpet weavers are exposed to which of the following occupational diseases?
  - (a) Asthma and tuberculosis
  - (b) Asbestosis
  - (c) Silicosis
  - (d) Siderosis

**245.** Dim-vision in the evening and night results from the deficiency of which one of the following?

- (a) Vitamin-E
- (b) Vitamin-A
- (c) Vitamin-*B*<sub>12</sub>
- (d) Vitamin-C

**246.** Which of the following nutrients is not a structural component of the plant?

- (a) Nitrogen
- (b) Calcium
- (c) Potassium
- (d) Phosphorus

**247.** Assertion (A): Red blood cells burst when placed in water.

Reason (R): Due to osmosis, water enters into red blood cells.

- (a) Both A and R true and R is the correct explanation of A
- (b) Both A and R are true, but R is not the correct explanation A
- (c) A is true, but R is false
- (d) A is false, but R is true

**248.** Which one of the following is correct? A concrete wall generally?

- (a) only reflects sound
- (b) only ab<mark>sorbs sou</mark>nd
- (c) absorbs and transmits sound
- (d) only transmits sound

**249.** Which color of heat radiation represents the highest temperature?

- (a) Blood red
- (b) Dark cherry
- (c) White
- (d) Salmon

**250.** What does airbag, used in safety of car driver, contain?

- (a) Sodium azide
- (b) Sodium bicarbonate
- (c) Sodium nitrite
- (d) Sodium peroxide

- **251.** The characteristic odour of garlic is due to which one of the following?
  - (a) Chlorine-containing compounds
  - (b) Fluorine-containing compounds
  - (c) Sulphur-containing compounds
  - (d) Nitrogen-containing compounds

**252.** Which of the following plants is not capable of manufacturing its own food?

- (a) Mushroom
- (b) Algae
- (c) Carrot
- (d) Cabbage

**253.** Which one of the following is considered as the easily digestible source of protein?

- (a) Soyabean
- (b) Egg albumin
- (c) Fish flesh
- (d) Red meat

254. In normal adult human, what is the rate of heart beat per minute?

- (a) 70-75
- (b) 72-80
- (c) 80-97
- (d) 82-87

255. The terms lubb and dub relates to which one of the following?

- (a) Eyes
- (b) Heart
- (c) Teeth
- (d) Lungs

**256.** In human body, what is the number of cervical vertebrae?

- (a) 5
- (b) 8
- (c) 7
- (d) 12

**257.** Which of the following is a rich source of energy?

- (a) Protein
- (b) Lipid
- (c) Carbohydrate
- (d) Vitamin

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- **258.** By using which one of the following techniques, is DNA fingerprinting done?
  - (a) ELISA
  - (b) RIA
  - (c) Southern Blotting
  - (d) Northern Blotting

**259.** Which chamber of human heart pumps fully oxygenated blood to aorta and hence to the body? (a) Right auricle

- (b) Left auricle
- (c) Left ventricle
- (d) Right ventricle
- **260.** Which one of the following is a major constituent of biogas?
  - (a) Carbon dioxide
  - (b) Hydrogen
  - (c) Methane
  - (d) Nitrogen dioxide
- **261.** Which one of the following is responsible for converting milk into curd?
  - (a) Fungi
  - (b) Bacteria
  - (c) Virus
  - (d) None of these
- **262.** Sweating during exercise indicates operation of which one of the following processes in the human body?
  - (a) Enthalpy
  - (b) Phagocytosis
  - (c) Homeostasis
  - (d) Osmoregulation

**263.** Malaria in the human body is caused by which one of the following organisms?

- (a) Bacteria
- (b) Virus
- (c) Protozoan
- (d) Mosquito

**264.** Which one of the following diseases is caused by virus?

- (a) Tuberculosis
- (b) Influenza
- (c) Typhoid
- (d) Diphtheria

- 265. Between which one of the following sets of blood groups, is the blood transfusion possible?
  - (a) A and O
  - (b) B and A
  - (c) A and AB
  - (d) AB and O

266. In human beings, the opening of the stomach into the small intestine is called

- (a) caecum
- (b) ileum
- (c) pylorus
- (d) Esophagus
- **267.** Match the following

			List-I			List-II
	(Vit	tamin	)			(Chemic <mark>al Comp</mark> ound)
	Α. Υ	Vitam	in-A			1. Thia <mark>mine</mark>
	В. \	/itami	in- <i>B</i> 1			2. Retinol
	C. V	Vitam	in-C			3. Ascorbic acid
	D. <b>'</b>	Vitam	in-E			4. Tocopherol
(	Code	s				
		Α	В	С	D	
(	(a)	4	1	3	2	
(	(b)	2	3	1	4	
(	(c)	4	3	1	2	
(	(d)	2	1	3	4	
I	Nhic	h one	of the f	ollow	ing is o	considered as the drug of last resort for human beings?
(	a) Pe	enicilli	in			
(	b) Cl	hlorar	nphenio	col		
(	c) Te	etracy	cline			

**269.** Match the following

(d) Streptomycin

List I	List II
(Medicinal Product)	(Source)
A. Quinine	1. Poppy plant
B. Morphine	2. Bacterium
C. Penicillin	3. Cinchona bark
D. Tetracycline	4. Fungus
Codes	

	Α	В	С	D
(a)	3	4	1	2
(b)	2	3	1	4
(c)	3	1	4	2
(d)	2	1	3	4

268.

- **270.** Wavelength of which of the following colour of the visible spectrum of light are maximally absorbed by green plants?
  - (a) Green and Yellow
  - (b) Red and Blue
  - (c) Green and Red
  - (d) Blue and Yellow

**271.** Which one of the following plants is preferred for mixed cropping in order to enhance the bioavailability of nitrogen?

- (a) Wheat
- (b) Gram
- (c) Maize
- (d) Barley

**272.** The plant dye Henna imparts orange-red colour to skin and hairs due to its reaction with which of the following?

- (a) Lipids
- (b) Proteins and amino acid sum
- (c) Carbohydrates
- (d) Nucleic acids

**273.** The genetically engineered 'Golden Rice' is rich in which of the following?

- (a) Vitamin-A and nicotinic acid
- (b)  $\beta$ -carotene and folic acid
- (c)  $\beta$ -carotene and iron
- (d) Vitamin-A and niacin

**274.** Bryophytes are photosynthetic but do not have vascular tissue and true roots. This feature enables them to resemble with of the following?

- (a) Algae
- (b) Fungi
- (c) Pteridophytes
- (d) Angiosperms

**275.** Which one of the following is a free-living bacterium that helps in nitrogen fixation in soil?

- (a) Azotobacter
- (b) Anabaena
- (c) Azolla
- (d) Nostos

**276.** Which one of the following is an example of vestigial organ in man?

- (a) Jaw apparatus
- (b) Ear muscles
- (c) Canine teeth
- (d) Humerus

- 277. Which one of the following characteristics is common among parrot, platypus and kangaroo?(a) Oviparity
  - (b) Homeothermy
  - (c) Toothless jaws
  - (d) Functional postanal tail

**278.** Which one of the following is present in chlorophyll which gives a green colour to plant leaves?

- (a) Calcium
- (b) Magnesium
- (c) Iron
- (d) Manganese
- **279.** Which one of the following is responsible for the stimulating effect of tea?
  - (a) Tannin
  - (b) Steroid
  - (c) Alkaloid
  - (d) Flavonoid
- **280.** Consider the following statement about bioremediation.
  - 1. It may be defined as any process that uses microorganisms or their enzymes to return the environment altered by contaminants to its original condition.
  - 2. Bioremediation may be employed in order to attack specific contaminants, such as chlorinated pesticides that are degraded by bacteria.

Which of the statements given above is/are correct?

- (a) Only 1
- (b) Only 2
- (c) 1 and 2
- (d) Neithe<mark>r 1 nor 2</mark>
- **281.** The branches of this tree root themselves like new trees over a large area. The roots then given rise to more trunks and branches. Because of this characteristic and its longevity, this tree is considered immortal and is an integral part of the myths and legends of India. Which tree is this?
  - (a) Neem
  - (b) Banyan
  - (c) Tamarind (Imli)
  - (d) Peepal
- **282.** Assertion (A): The safety air bags fitted in some cars inflate during head-on impact of the car. Reason (R): The inflation is due to pumping of air into the balloon during the impact.
  - (a) Both A and R are true and R is the correct explanation of A
  - (b) Both A and R are true, but R is not the correct explanation of A
  - (c) A is true, but R is false
  - (d) A is false, but R is true

#### **283.** Match the following

List I	List II
Agent of Transmission	Disease Transmitted
A. Anopheles mosquito	1. Kala-azar
B. Culex mosquito	2. Dengue
C. Aedes	3. Malaria
D. Sand-fly	4. Filaria

Codes

	А	В	С	D
(a) 3	2	4	1	
(b) 1	4	2	3	
(c) 1		2	4	3
(d) 3	4	2	1	

**284.** Primary source of vitamin-D for human beings is

- (a) citrus fruits
- (b) green vegetables
- (c) sun
- (d) yeast

**285.** Anaemia is a common health problem especially in women. Which one of the following deficiencies is most frequently responsible for anaemia in India?

- (a) Calcium
- (b) Iodine
- (c) Iron
- (d) Zinc

286. Which one of the following is considered normal blood pressure in man?

- (a) 120/80 mm water
- (b) 120/80 mm blood
- (c) 120/80 mm mercury
- (d) 120/80 mm air

287. Anthrax is a disease of human and cattle with a potential for biological warfare. It is caused by

- (a) protozoan
- (b) virus
- (c) bacterium
- (d) fungus
- **288.** Which one of the following animals breathe through the skin?
  - (a) Fish
  - (b) Pigeon
  - (c) Frog
  - (d) Cockroach

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289. For which one among the following diseases vaccine is not yet available?

- (a) Tetanus
- (b) Malaria
- (c) Measles
- (d) Mumps

**290.** Which one of the following is not a feature of eutrophic lakes?

- (a) Blooms are frequent in eutrophic lakes
- (b) Plant nutrient flux is high
- (c) Primary productivity is low
- (d) Dominated by blue green algae
- **291.** Quinine is a drug used in the treatment of malaria. From which part of the plant it is obtained? (a) Roots
  - (h) Cham
  - (b) Stem
  - (c) Bark
  - (d) Leaves

**292.** Which among the following oils has the maximum protein content?

- (a) Castor oil
- (b) Sunflower oil
- (c) Soybean oil
- (d) Safflower oil
- **293.** Match the following

V	latch the following			
List I		List II		
(Mineral)		(Major Source)		
	A. Iron 1. Banana, date			
	B. Potassium 2. Palak			
	C. Iodine	3. Iodized common slat		
	D. Calcium 4. Milk, egg			
_				

#### Codes

	Α	В	С	D
(a)	2	1	3	4
(b)	2	3	1	4
(c)	4	3	1	2
(d)	4	1	3	2

- 294. Which one of the following statement regarding potato is correct?
  - (a) It is root
  - (b) It is a normal stem
  - (c) It is a modified stem
  - (d) It is a modified root

**295.** Golden fiber refers to

- (a) hemp
- (b) jute
- (c) cotton
- (d) nylon

**296.** Which one of the following is commonly used as a flavoring agent during the preparation of noodles?

- (a) Saffron
- (b) Cinnamon
- (c) Ajinomoto
- (d) Olive oil

**297.** Which one of the following plants is popularly grown along the road for absorbing vehicular pollutants?

- (a) Nerium
- (b) Neem
- (c) Calotropis
- (d) Bougainvillea

#### **298.** Match the following

Γ		List	t I		List II	
	A. Wine	e			1. Barl <mark>ey</mark>	
	B. Beer				2. Sugarcane juice	
	C. Whis	sky			3. Grapes	
	D. Rum	ı 🦷			4. Molasses	
Co	des					
	Α	В	С	D		
(a)	2	1	4	3		
(b)	3	4	1	2		
(c)	3	1	4	2		
(d)	2	4	1	3		

- **299.** A milkman puts banana leaf in milk jar, because banana leaf
  - (a) gives a fresh flavor to milk
  - (b) makes the milk acidic and resistant to yeast
  - (c) makes the milk basic and resistant to yeast
  - (d) increases the whiteness of milk
- **300.** Which one of the following is not biodegradable?
  - (a) Silver foil
  - (b) Woollen mat
  - (c) Leather bag
  - (d) Jute basket

- **301.** Tips of leaves in grasses and common garden plants show water drops in early morning hours. This water accumulation is obtained from
  - (a) atmosphere
  - (b) stomata
  - (c) vascular bundles
  - (d) hydathodes
- **302.** If excess fertilizer is applied to a plant without water, the plant will
  - (a) be stunted in growth
  - (b) develop modifications
  - (c) die due to plasmolysis
  - (d) remain unaffected
- **303.** Itching due to insect bite is caused by
  - (a) Acetic acid
  - (b) Formic acid
  - (c) Lactic acid
  - (d) Maleic acid
- **304.** Which one among the following is a major source of sugar?
  - (a) Watermelon
  - (b) Beetroot
  - (c) Date
  - (d) Sugarcane

**305.** The vitamins(s), which is/are generally excreted urine, is/are

- (a) Vitamin-A
- (b) Vitamin-B
- (c) Vitamin-E
- (d) Vitamin-D and K

**306.** Which one among the following plants cannot be multiplied by cuttings?

- (a) Banana
- (b) Bryophyllum
- (c) Rose
- (d) Marigold
- **307.** Consider the following statements
  - 1. A person with myopia can see distant objects distinctly but cannot see nearby objects clearly.
  - 2. A person with hypermetropia cannot see distant objects clearly.
  - 3. A person with presbyopia can see nearby objects without corrective glasses.

Which of the statements given above is/are not correct?

- (a) 1, 2 and 3
- (b) 1 and 2
- (c) 1 and 3
- (d) Only 3

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- **308.** Consider the following statements
  - 1. Iodine is necessary for the thyroid gland to make adrenaline.
  - 2. Iodine deficiency leads to goiter in human beings.
  - 3. Iodine is secreted by pancreas and helps in regulating cholesterol level.

Which of the statements given above is/are correct?

- (a) 1, 2 and 3
- (b) 1 and 2
- (c) 1 and 3
- (d) only 2
- **309.** Which among the following are the major reasons behind preferring eucalyptus tree in the planned forestation process?
  - 1. Plantation grows very fast.
  - 2. Plantation makes the soil more fertile.
  - 3. Wood from eucalyptus tree is easily converted into the pulp for paper industry.

Select the correct answer using the codes given below.

- (a) 1 and 2
- (b) 1 and 3
- (c) 2 and 3
- (d) All of these

**310.** Which one of the following plants is used for green manuring in India?

- (a) Wheat
- (b) Cotton
- (c) Sun hemp
- (d) Rice
- **311.** Chemically silk fibers are predominantly
  - (a) Carbohydrate
  - (b) Protein
  - (c) Complex lipid
  - (d) Mixtur<mark>e of polys</mark>accharide and fat
- **312.** Which among the following are the most important raw materials for the manufacturing of soap?
  - (a) Fats and potash
  - (b) Fats and caustic alkali
  - (c) Fats and acid
  - (d) Vegetable oil and potash

**313.** Mosquito can be a vector for the following disease except

- (a) yellow fever
- (b) dengue fever
- (c) kala-azar
- (d) filariasis

- **314.** Consider the following statements
  - 1. Warm-blooded animals can remain active in cold environment in which cold-blooded animals can hardly move.

2. Cold-blooded animals require much less energy to survive than warm-blooded animals.

Which of the statements given above is/are correct?

- (a) Only 1
- (b) Only 2
- (c) Both 1 and 2
- (d) Neither 1 nor 2
- **315.** A deficiency of which one of the following minerals is most likely to lead to an immune deficiency?
  - (a) Zinc
  - (b) Calcium
  - (c) Lead
  - (d) Copper
- **316.** Human body's main organ of balance is in
  - (a) inner part of ear
  - (b) middle part of ear
  - (c) front part of brain
  - (d) top part of vertebral column

317. Human body's main organ of balance is located in

- (a) middle part of ear
- (b) inner part of ear
- (c) front part of brain
- (d) top part of vertebral column

**318.** Which of the following statements correctly describe the properties of hormones?

- 1. They are steroids, proteins, peptides or amino acids derivatives.
- 2. They are not produced by body organs and are mostly taken as supplements.
- 3. They do not influence the working of those organs which have secreted them.
- 4. They act as co-enzymes and help enzymes to perform their function.

Select the correct answer using the code given below

- (a) 1 and 4
- (b) 2, 3 and 4
- (c) 1 and 3
- (d) 1, 2, 3 and 4

- **319.** Which among the following statement about biofertilizers are correct?
  - 1. Azotobacter is one of the nitrogen fixing bacteria used as a biofertilizer.
  - 2. They have to be applied to the leaves of the plant only.
  - 3. They alter the chemical composition of the soil.
  - 4. They can be used along with organic fertilizers.

Select the correct answer using the code given below

- (a) 2 and 3
- (b) 1, 2 and 4
- (c) 1 and 4
- (d) 1, 2, 3 and 4
- **320.** Why are pregnant women recommended substantial intake of green leafy vegetables in their diet, especially in the 1<sup>st</sup> trimester?
  - (a) They are a rich source of chlorophyll
  - (b) They are a rich source of folic acid which is required for DNA synthesis
  - (c) They are a rich source of lecithin
  - (d) They are a rich source of essential fatty acids required for cell anabolism

	Solution	15
	PHYSICS	S
1. (a);	11. (d);	21. (c);
2. (c);	12. (b);	22. (a);
3. (b);	13. (a);	23. (b);
4. (d);	14. (c);	24. (c);
5. (a);	15. (b);	25. (a);
6. (b);	16. (a);	26. (b);
7. (d);	17. (c);	27. (c);
8. (c);	18. (c);	28. (c);
9. (c);	19. (b);	29. (b);
10. (a);	20. (c);	30. (a);
31. (c);		32. (d);
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	106. (a);	
99. (d)		114. (d);
100. (a)	107. (d)	115. (d):
100. (u)	108. (d);	1101 (u))
101. (a);		116. (c);
102 (b):	109. (b);	117 (d)·
10 (0),	110. (b);	117. (u),
103. (b);		118. (b);
104 (b)·	111. (d);	110 (d)·
104. (0),	112. (d);	119. (u),
105. (b);		120. (c);
	113. (a);	

# Chemistry

121.	(d);	133.	(b);	145.	(b);
122.	(b);	134.	(c);	146.	(b);
123.	(a);	135.	(d);	147.	(d);
124.	(a);	136.	(c);	148.	(c);
125.	(b);	137.	(a);	149.	(c);
126.	(d);	138.	(b);	150.	(c);
127.	(d);	139.	(c);	151.	(b);
128.	(b);	140.	(b);	152.	(b);
129.	(b);	141.	(a);	153.	(d);
130.	(b);	142.	(b);	154.	(a);
131.	(a);	143.	(d);	155.	(a);
132.	(a);	144.	(b);	156.	(a);
157.	(a);			158.	(a);



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	Biology	
1. (a);	21. (c);	41. (b);
2. (c);	22. (d);	42. (c);
3. (d);	23. (b);	43. (c);
4. (a);	24. (a);	44. (b);
5. (c);	25. (b);	45. (c);
6. (b);	26. (c);	46. (c);
7. (a);	27. (a);	47. (d);
8. (d);	28. (c);	48. (b);
9. (c);	29. (c);	49. (c);
10. (c);	30. (a);	50. (b);
11. (a);	31. (c);	51. (b);
12. (b);	32. (a);	52. (b);
13. (b);	33. (b);	53. (c);
14. (a);	34. (b);	54. (a);
15. (b);	35. (b);	55. (a);
16. (b)	36. (c);	56. (b);
17. (b);	37. (c);	57. (c);
18. (b);	38. (c);	58. (b);
19. (d);	39. (c);	59. (c);
20. (b);	40. (c);	60. (c);
	61. (b);	

