S1. Ans.(a)
Sol. The liquid surface always acquires minimum surface area due to surface tension so, the small droplet of any liquid is always spherical.

S2. Ans.(d)
Sol. In 1935 by the Japanese physicist Yukawa Hideki, the existence of mesons was confirmed in 1947 by a team led by the English physicist Cecil Frank Powell with the discovery of the pi-meson (pion) in cosmic-ray particle interactions.

S3. Ans.(b)
Sol. The Discovery of Radioactivity. In 1896 Henri Becquerel was using naturally fluorescent minerals to study the properties of x-rays, which had been discovered in 1895 by Wilhelm Roentgen.

S4. Ans.(c)
Sol. The time taken by a pendulum to complete one oscillation is called its Time Period.

S5. Ans.(b)
Sol. Concave and convex are two classes of spherical mirrors. A concave mirror is a spherical mirror in which the reflecting surface and the center of curvature fall on the same side of the mirror. On the other hand, a convex mirror is a spherical mirror in which the reflecting surface and the center of curvature lie on the opposite sides of the mirror.

S6. Ans.(a)
Sol. Drag is a kind of frictional force exerted by fluid which opposes the motion of an object through that fluid. Drag force acts in direction opposite to the direction of motion of the object.

S7. Ans.(d)
Sol. The SI unit of frequency is the hertz (Hz), named after the German physicist Heinrich Hertz; one hertz means that an event repeats once per second.

S8. Ans.(b)
Sol. Wood is a good insulator.
S9. Ans.(b)
Sol. A non-contact force is a force which acts on an object without coming physically in contact with it. The most familiar example of a non-contact force is gravity.

S10. Ans.(b)
Sol. From Newton's second law it follows that, if a constant force acts on a particle for a given time, the product of force and the time interval (the impulse) is equal to the change in the momentum.

S11. Ans.(c)
Sol. Pteridophyte are vascular plants i.e., plants with xylem and phloem, that reproduce and disperse via spores. They are seedless, vascular cryptogams.

S12. Ans.(c)
Sol. Orcas dolphin is also known as killer whales are the largest member of the dolphin family.

S13. Ans.(c)
Sol. Sponges the members of the phylum Porifer, are a basal Metazoa clade as sister of the Diploblasts.

S14. Ans.(c)
Sol. The botanical name of papaya is ‘Carica papaya’. It is rich in carotene, which is a precursor of vitamin A. The papain enzyme presented in papaya is helpful in digestion. The yellow colour of papaya is due to present of caricaxznthin.

S15. Ans.(a)
Sol. Order being a higher category, is the assemblage of families which exhibit a few similar characters.

S16. Ans.(b)
Sol. Anisogamy (also called heterogamy) is the form of sexual reproduction that involves the union or fusion of two gametes, which differ in size and/or form. Sexual reproduction in Algae that takes place through fusion of two dissimilar size gametes is called Anisogamous.

S17. Ans.(c)
Sol. Algae are the most important photosynthesizing organisms on earth. At least half of the total carbon dioxide fixation on earth is carried out by algae through photosynthesis.

S18. Ans.(c)
Sol. The chemical composition of linseed (cotton) is as follows-
    Cellulose – 91.00%
    Water – 7.85%.
S19. Ans.(c)
Sol. Colour blindness is a sex-linked genetic disorder. It does not relate to vitamin D. The deficiency of Vitamin A causes night blindness. Vitamin B₃ is also called niacin. Its deficiency causes pellagra. The deficiency of folic acid causes anaemia.

S20. Ans.(b)
Sol. The pancreas is a mixed gland which secretes digestive enzyme and the beta cells of islets of Langerhans secrete insulin, alpha cells secrete glucagon, delta cells secrete somatostatin hormone. If the pancreas is defective by any of the reason, then the formation of insulin and glucagon are affected badly.

S21. Ans.(b)
Sol. Jhum or Jhoom cultivation is a local name for slash and burn agriculture practised by the tribal groups in the northeastern states of India like Arunachal Pradesh, Meghalaya, Mizoram and Nagaland and also in the districts of Bangladesh like Khagrachari and Sylhet.

S22. Ans.(b)
Sol. Insolation is the solar radiation that reaches the earth's surface. It is measured by the amount of solar energy received per square centimetre per minute. Insolation affects temperature. The more the insolation, the higher the temperature.

S23. Ans.(d)
Sol. Chota Nagpur, plateau in eastern India, in northwestern Chhattisgarh and central Jharkhand states. The Chota Nagpur area has the most valuable concentration of mineral resources in India. It is famous for coal reserve and iron and steel industries.

S24. Ans.(b)
Sol. The Nilgiri Biosphere Reserve is an International Biosphere Reserve in the Western Ghats and Nilgiri Hills ranges of South India. It was constituted as first Biosphere Reserve by UNESCO in September 1986 under Man and Biosphere Programme.

S25. Ans.(d)
Sol. Tripura is a hilly state in northeast India, bordered on 3 sides by Bangladesh.

S26. Ans.(a)
Sol. Thailand is the country which is called the land of White Elephants, as it has a large number of White Elephants and the White Elephants are the symbol of royal power in Thailand.

S27. Ans.(d)
Sol. Melghat was declared a tiger reserve and was among the first nine tiger reserves notified in 1973-74 under the Project Tiger. It is located at in northern part of Amravati District of Maharashtra State in India.
S28. Ans.(c)
Sol. The ozone layer or ozone shield is a region of Earth's stratosphere that absorbs most of the Sun's ultraviolet (UV) radiation. Stratosphere contains high concentrations of ozone (O₃) in relation to other parts of the atmosphere.

S29. Ans.(b)
Sol. The godavari river is the largest river of south India, it has length of 1465 Kilometers, it originates from Triambakeshwar in Maharashtra.

S30. Ans.(b)
Sol. Panthera Tigris is the scientific name of Tiger.