S1. Ans.(a)
Sol. The Fundamental Rights are claimed mostly against the state and its instrumentalities and not against private bodies. Article 13 (2) bars the state from making any law infringing the Fundamental Rights guaranteed under Part III of the Indian Constitution. The actions of any of the bodies comprised within the term ‘state’ as defined in Article 12 can be challenged before the courts under Article 13 (2) on the ground of violating Fundamental Rights.

S2. Ans.(c)
Sol. Article 25 says that all person are equally entitled to freedom of conscience and right to freely profess, practice and propagate religion. However these right are subject to public order, morality, health and other provisions relating to fundamental right.

S3. Ans.(d)
Sol. The Constitution (Eighty-sixth Amendment) Act, 2002 inserted Article 21-A in the Constitution of India to provide free and compulsory education of all children in the age group of six to fourteen years as a Fundamental Right. It is the Right to Education.

S4. Ans.(c)
Sol. PAC examines the three audit reports of CAG submitted to President viz. audit report on appropriation accounts, audit report on finance accounts and audit report on public undertakings.

S5. Ans.(d)
Sol. Article 19 embodies the six basic freedoms. The six freedoms are freedom of speech to assemble peaceably and without arms, to form associations or unions or cooperative societies, to move freely throughout the territory of India, to reside and settle in any part of the territory of India, to practice any profession, or to carry on any occupation, trade or business.

S6. Ans.(d)
Sol. Article 57 defines the eligibility for re-election of president office and other condition for eligibility for re-election.

S7. Ans.(b)
Sol. Zero Hour begins immediate after the question hours without giving any prior notice before it. At the very time, any member irrespective of any parties may ask the questions and seeks immediate answers. It generally contains very important topics which is essential to be asked. since the the time starts from 12 noon, it is called Zero Hour.
S8. Ans.(a)
Sol. Part VIII of the constitution deals with Union territories from article 239 to 242.

S9. Ans.(a)
Sol. The Constitution had left to the parliament to decide by law how representatives of people from Union territories will be elected. Parliament enacted the Union Territories (Direct Election to the House of the People) Act, 1965, by which the members of Lok Sabha from the union territories are also chosen by direct election.

S10. Ans.(d)
Sol. Meira Kumar is an Indian politician and five-time Member of Parliament who was the United Progressive Alliance nominee for President of India in the 2017 election. She was elected unopposed as the first woman Speaker of Lok Sabha and served from 2009 to 2014.

S11. Ans.(c)
Sol. The constellation Ursa Majoris known as the Great Bear.

S12. Ans.(a)
Sol. Ecology is the study of the relationships between plants, animals, people, and their environment, and the balances between these relationships.

S13. Ans.(a)
Sol. Green Revolution impact is mostly felt on wheat. The Green Revolution in India refers to a period when agriculture in India improved due to the adoption of novel methods and technology in agriculture.

S14. 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.

S15. Ans.(b)
Sol. Panthera Tigris is the scientific name of Tiger.

S16. Ans.(a)
Sol. Uttarakhand capital is Dehradun.

S17. Ans.(b)
Sol. Gir Forest National Park is a wildlife sanctuary in Gujarat, western India. It was established to protect Asiatic lions.

S18. Ans.(b)
Sol. Global warming, also referred to as climate change, is the observed century-scale rise in the average temperature of the Earth's climate system and its related effects. Carbon dioxide is a one of the Green House gas which causes global warming. Carbon dioxide is not produced by Global warming.
S19. Ans.(a)
Sol. Jupiter has 69 moons with known orbits, of which 60 have confirmed orbits and have thus received permanent designations; of these, 51 have been named.

S20. Ans.(d)
Sol. Oslo is the capital and the most populous city in Norway.

S21. Ans.(b)
Sol. A pinhole camera is a simple camera without a lens and with a single small aperture, effectively a light-proof box with a small hole in one side. Light from a scene passes through this single point and projects, an inverted image on the opposite side of the box. This is similar to that principle due to which circular patches of light is seen under a tree during day time.

S22. Ans.(a)
Sol. When a beam of light is passed through a colloidal solution, then scattering of light is observed. This is known as the Tyndall effect. This scattering of light illuminates the path of the beam in the colloidal solution.

S23. Ans.(c)
Sol. The angle of incidence i is smaller than the angle of refraction r. Total internal reflection occurs when the incident angle i is larger than the critical angle c. The path of light when a mirage happens Its formation is a result of the refraction and the total internal reflection of light in the air.

S24. Ans.(d)
Sol. The phenomenon of light associated with the appearance of blue colour of the sky is scattering of light. The sky appears blue because in the sun light, the blue colour of light is scattered maximum and this scattered blue light enters our eyes and therefore, the sky appears blue in appearance.

S25. Ans.(b)
Sol. The Latin name for lentil is lens culinaris, and this is the origin of the modern word, "lens". In addition to crown glass and flint glass, modern day lens makers use quartz crystals and acrylic plastic. These materials may be used in combination.

S26. Ans.(a)
Sol. Originally designed for recovery of valuable industrial-process materials, electrostatic precipitators are used for air pollution control, particularly for removing particles from waste gases at industrial facilities and power-generating stations.

S27. Ans.(d)
Sol. In mirrors, the back surface is coated with a thin layer of silver nitrate.
S28. Ans.(a)
Sol. a parallel beam of incident light is reflected as a parallel beam in one direction. In this case, parallel incident rays remain parallel even after reflection and go only in one direction and it occurs from smooth surfaces like that of a plane mirror or highly polished metal surfaces.

S29. Ans.(c)
Sol. Measuring the Speed of Light with Jupiter's Moons. The first real measurement of the speed of light came about half a century later, in 1676, by a Danish astronomer, Ole Römer, working at the Paris Observatory.

S30. Ans.(a)
Sol. Parabolic reflectors are used to collect energy from a distant source (for example sound waves or incoming star light). In optics, parabolic mirrors are used to gather light in reflecting telescopes and solar furnaces, and project a beam of light in flashlights, searchlights, stage spotlights, and car headlights.