

## General Science Mega Quiz for RRB NTPC (Solutions)

### S1. Ans.(b)

Sol.

Phrenology	– Study of human skull
Floriculture	– Study of flowers
Agrostology	– The study of grasses
Palynology	– Study of pollen grains and other spores

### S2. Ans.(a)

Sol. Ethnology – Science dealing with different races of mankind

Ethnography – A study of specific culture.

Ethology – Study of the animal behavior.

Ethics – Study of ethical duties.

### S3. Ans.(c)

Sol. The constituents of an atom are protons, neutrons and electrons. The protons and neutrons (nucleons) are found in the nucleus of atoms. The nucleus of an atom is surrounded by electrons.

### S4. Ans.(c)

Sol. The particles that are smaller than the atoms are called subatomic particles. The three main subatomic particles that form an atom are protons, neutrons and electrons. Deuteron contains a proton and a neutron.

### S5. Ans.(d)

Sol. In particle physics, an elementary particle or fundamental particle is a subatomic particle with no sub-structure, thus not composed of other particles. Particles currently thought to be elementary include the fundamental fermions (quarks, leptons, antiquarks and antileptons) as well as fundamental bosons.

### S6. Ans.(b)

Sol. The ionosphere is a region of earth's upper atmosphere from about 65 km. to 400 km altitude. It is ionized by solar radiation. It has particle importance because among other functions, it influences radio propagation to distant places on earth.



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**S7. Ans.(a)**

**Sol.** In physics, radiation is the emission or transmission of energy in the form of waves or particles through space or through a medium. Electromagnetic radiations such as radio waves, microwaves, infrared, visible light, X-rays and gamma rays do not require a medium. On the other hand heat transmission by convection and conduction requires a medium.

**S8. Ans.(d)**

**Sol.** Shorter the wavelength, greater is the energy. In reference to energy, the sequence of the energy of electromagnetic rays is as follows:

Radio waves < Microwaves < Infrared < Visible light < Ultraviolet rays < X-rays < Gamma rays.

It is clear that among the given options, the X-rays have the maximum amount of energy than others.

**S9. Ans.(b)**

**Sol.** Ultraviolet radiations are mainly divided into three groups: - UV-A radiations: the long wave UV – A radiations having the wavelength of 320 – 400 nm( $4 \times 10^{-7}$ m). They strike the surface of the earth as the part of the rays of the sun.

UV-B radiations: the medium wave UV-B radiation has the wavelength of 280-320 nm. It is mostly absorbed by the ozone layer, but some do reach the earth's surface.

UV-C radiations – it has a wavelength of 100 – 280 nm. It is completely absorbed ozone layer and atmosphere.

**S10. Ans.(a)**

**Sol.** The nucleus is a very dense region consisting of protons and neutrons at the centre of an atom. It was discovered in 1911 as a result of Ernest Rutherford's interpretation of the 1909 Geiger – Marsden gold foil experiment.

**S11. Ans.(b)**

**Sol.** Melanin is the pigment that gives human skin, hair and eyes their color. Dark skinned people have more Melanin in their skin than light skinned people have. Melanin is produced by cells called Melanocytes.

**S12. Ans.(b)**

**Sol.** The total number of living organisms, both plants and animals, in a given area is called Biomass.

**S13. Ans.(c)**

**Sol.** The first woman to win a Nobel Prize was Marie Curie, who won the Nobel Prize in Physics in 1903 with her husband, Pierre Curie, and Henri Becquerel. Curie is also the only woman to have won multiple Nobel Prizes; in 1911, she won the Nobel Prize in Chemistry.

**S14. Ans.(b)**

**Sol.** The World Hypertension Day is globally celebrated each year on May 17th to promote the public awareness of the importance of monitoring blood pressure with being aware of its natural levels. This year's theme is 'Know Your Number'.

**S15. Ans.(c)**

**Sol.** Vitamin K refers to a group of fat-soluble vitamins that play a role in blood clotting, bone metabolism, and regulating blood calcium levels. The body needs vitamin K to produce prothrombin, a protein and clotting factor that is important in blood clotting and bone metabolism.

**S16. Ans.(d)**

**Sol.** Rhodopsin is found in specialized light receptor cells called rods. As part of the light-sensitive tissue at the back of the eye (the retina), rods provide vision in low light. Other light receptor cells in the retina, called cones, are responsible for vision in bright light.

**S17. Ans.(b)**

**Sol.** The term "mitochondria" was coined by Carl Benda in 1898.

**S18. Ans.(c)**

**Sol.** Sir William Crookes, British chemist and physicist noted for his discovery of the element thallium and for his cathode-ray studies, fundamental in the development of atomic physics.

**S19. Ans.(c)**

**Sol.** Electron was discovered in the year 1897 by J J Thomson.

**S20. Ans.(c)**

**Sol.** Curium is a transuranic radioactive chemical element with the symbol Cm and atomic number 96. This element of the actinide series was named after Marie and Pierre Curie – both were known for their research on radioactivity.

**S21. Ans.(b)**

**Sol.** After scouring and bleaching, cotton is 99% cellulose. Cellulose is a macromolecule -- a polymer made up of a long chain of glucose molecules linked by C-1 to C-4 oxygen bridges with elimination of water (glycoside bonds).

**S22. Ans.(d)**

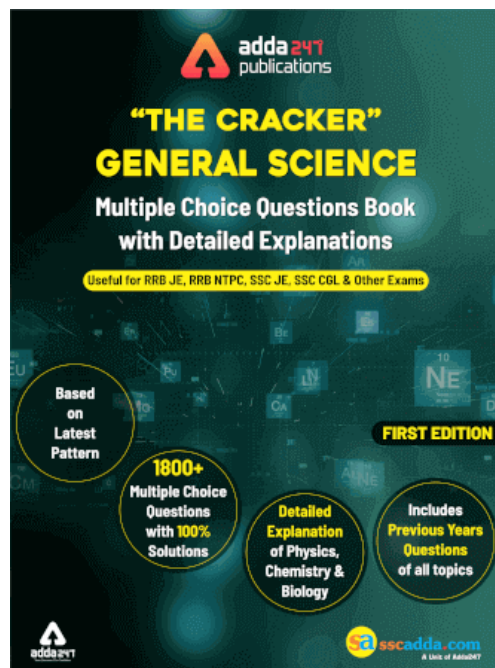
**Sol.** Condensation is the process by which water vapor in the air is changed into liquid water. Condensation is crucial to the water cycle because it is responsible for the formation of clouds.

**S23. Ans.(d)**

**Sol.** Dolomite is an anhydrous carbonate mineral composed of calcium magnesium carbonate, ideally  $\text{CaMg}(\text{CO}_3)_2$ .

**S24. Ans.(d)**

**Sol.** Pascal's law is a principle in fluid mechanics given by Blaise Pascal that states that a pressure change at any point in a confined incompressible fluid is transmitted throughout the fluid such that the same change occurs everywhere.



**S25. Ans.(c)**

**Sol.** Blood pressure is measured using two numbers. The first number, called systolic blood pressure, measures the pressure in your blood vessels when your heart beats. The second number, called diastolic blood pressure, measures the pressure in your blood vessels when your heart rests between beats.

**S26. Ans.(c)**

**Sol.** An otoscope or auriscope is a medical device which is used to look into the ears. Health care providers use otoscopes to screen for illness during regular check-ups and also to investigate ear symptoms.

**S27. Ans.(a)**

**Sol.** The femur is the longest bone found in the human body. It is almost 19.9 inches long and is commonly known as the thigh bone.

**S28. Ans.(b)**

**Sol.** The Nobel Prize in Physics 1921 was awarded to Albert Einstein "for his services to Theoretical Physics, and especially for his discovery of the law of the photoelectric effect."

**S29. Ans.(b)**

**Sol.** Waterborne diseases are caused by drinking contaminated or dirty water. Contaminated water can cause many types of diarrheal diseases, including Cholera, and other serious illnesses such as Guinea worm disease, Typhoid, and Dysentery. Mumps is a viral disease.

**S30. Ans.(b)**

**Sol.** The unit of pressure in the SI system is the pascal (Pa), defined as a force of one Newton per square meter.

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