

**Question 1:** Radiocarbon is produced in the atmosphere as a result of

- collision between fast neutrons and nitrogen nuclei present in the atmosphere
- action of ultraviolet light from the sun on atmospheric oxygen
- action of solar radiations particularly cosmic rays on carbon dioxide present in the atmosphere
- lightning discharge in atmosphere

Answer: 1

**Question 2:** It is easier to roll a stone up a sloping road than to lift it vertical upwards because

- work done in rolling is more than in lifting
- work done in lifting the stone is equal to rolling it
- work done in both is same but the rate of doing work is less in rolling
- work done in rolling a stone is less than in lifting it

Answer: 4

**Question 3:** The absorption of ink by blotting paper involves

- viscosity of ink
- capillary action phenomenon
- diffusion of ink through the blotting
- siphon action

Answer: 2

**Question 4:** Siphon will fail to work if

- the densities of the liquid in the two vessels are equal
- the level of the liquid in the two vessels are at the same height
- both its limbs are of unequal length
- the temperature of the liquids in the two vessels are the same

Answer: 2

**Question 5:** Large transformers, when used for some time, become very hot and are cooled by circulating oil. The heating of the transformer is due to

- the heating effect of current alone
- hysteresis loss alone
- both the heating effect of current and hysteresis loss
- intense sunlight at noon

Answer: 3

**Question 6:** Nuclear sizes are expressed in a unit named

- Fermi
- angstrom
- newton

- tesla

Answer: 1

**Question 7:** Sound waves in air are

- transverse
- longitudinal
- electromagnetic
- polarised

Answer: 2

**Question 8:** Magnetism at the centre of a bar magnet is

- minimum
- maximum
- zero
- minimum or maximum

Answer: 3

**Question 9:** It is more difficult to walk on a sandy road than on a concrete road because

- sand is soft and concrete is hard
- the friction between sand and feet is less than that between concrete and feet
- the friction between sand and feet is more than that between concrete and feet
- the sand is grainy but concrete is smooth

Answer: 2

**Question 10:** Find the maximum velocity for the overturn of a car moving on a circular track of radius 100 m. The co-efficient of friction between the road and tyre is 0.2

- 0.14 m/s
- 140 m/s
- 1.4 km/s
- 14 m/s

Answer: 4

**Question 11:** Of the following properties of a wave, the one that is independent of the other is its

- amplitude
- velocity
- wavelength
- frequency

Answer: 1

**Question 12:** The nucleus of an atom consists of

- electrons and neutrons
- electrons and protons

- protons and neutrons
- All of the above

Answer: 3

**Question 13:** The number of moles of solute present in 1 kg of a solvent is called its

- molality
- molarity
- normality
- formality

Answer: 1

**Question 14:** The most electronegative element among the following is

- sodium
- bromine
- fluorine
- oxygen

Answer: 3

**Question 15:** The metal used to recover copper from a solution of copper sulphate is

- Na
- Ag
- Hg
- Fe

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Answer: 4

**Question 16:** The number of d-electrons in  $\text{Fe}^{2+}$  ( $Z = 26$ ) is not equal to that of

- p-electrons in Ne ( $Z = 10$ )
- s-electrons in Mg ( $Z = 12$ )
- d-electrons in Fe ( $Z = 26$ )
- p-electrons in Cl ( $Z = 17$ )

Answer: 4

**Question 17:** The metallurgical process in which a metal is obtained in a fused state is called

- smelting
- roasting
- calcinations
- froth floatation

Answer: 1

**Question 18:** The oldest rocks in the earth's crust were once molten, and came from deep inside the earth. The molten rock, called magma, spewed out in volcanic eruptions during the earth's early life and solidified into hard rock's called

- granite

- basalt
- igneous rocks
- sedimentary rocks

Answer: 3

**Question 19:** The law which states that the amount of gas dissolved in a liquid is proportional to its partial pressure is

- Dalton's law
- Gay Lussac's law
- Henry's law
- Raoult's law

Answer: 3

**Question 20:** The gas present in the stratosphere which filters out some of the sun's ultraviolet light and provides an effective shield against radiation damage to living things is

- helium
- ozone
- oxygen
- methane

Answer: 2