

**1. Which of the following could act as a propellant for rockets?**

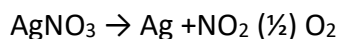
- (1) Liquid oxygen + liquid argon
- (2) Liquid hydrogen + liquid oxygen
- (3) Liquid nitrogen + liquid oxygen
- (4) Liquid hydrogen + liquid nitrogen

**Solution:**

Oxygen is a strong supporter of combustion. Liquid hydrogen has low mass and high enthalpy of combustion. Liquid hydrogen and liquid oxygen are used as excellent fuel for rockets. Hence option (2) is the answer.

**2. Which one of the following nitrates will leave behind a metal on strong heating?**

- (1) Copper nitrate
- (2) Manganese nitrate
- (3) Silver nitrate
- (4) Ferric nitrate

**Solution:**

Hence option (3) is the answer.

**3. Insulin production and its action in the human body are responsible for the level of diabetes. This compound belongs to which of the following categories?**

- (1) A co-enzyme
- (2) An antibiotic
- (3) An enzyme
- (4) A hormone

**Solution:**

Insulin is a hormone.

Hence option (4) is the answer.

**4. The distillation technique most suited for separating glycerol from spent-lye in the soap industry is:**

- (1) Distillation under reduced pressure
- (2) Simple distillation
- (3) Fractional distillation
- (4) Steam distillation

**Solution:**

The distillation technique most suited for separating glycerol from spent-lye in the soap industry is distillation under reduced pressure. The boiling point of glycerol is  $290^\circ\text{C}$  at atmospheric pressure. At

this temperature, it decomposes before it distils. Therefore, the distillation is carried out under reduced pressure by applying vacuum which decreases the boiling temperature of glycerol and thus preventing its decomposition.

Hence option (1) is the answer.

**5. Which one of the following types of drugs reduces fever?**

- (1) Analgesic
- (2) Antipyretic
- (3) Antibiotic
- (4) Tranquiliser

**Solution:**

Antipyretics are used to reduce the temperature.

Hence option (2) is the answer.

**6. Which of the following is an anionic detergent?**

- (1) Sodium stearate
- (2) Sodium lauryl sulphate
- (3) Cetyltrimethyl ammonium bromide
- (4) Glyceryl oleate

**Solution:**

$\text{CH}_3(\text{CH}_2)_{10}\text{CH}_2\text{OSO}_3^-\text{Na}^+$  is sodium lauryl sulphate. It is an anionic detergent.

Hence option (2) is the answer.

**7. Which of the following compounds is not an antacid?**

- (1) Aluminium hydroxide
- (2) Cimetidine
- (3) Phenelzine
- (4) Ranitidine

**Solution:**

Phenelzine is used as antidepressant. Aluminium hydroxide, Cimetidine and ranitidine are now used as antacids.

Hence option (3) is the answer.

**8. Aspirin is known as**

- (1) Acetyl salicylic acid
- (2) Phenyl salicylate
- (3) Acetyl salicylate
- (4) Methyl salicylic acid

**Solution:**

Aspirin is known as Acetyl salicylic acid.

Hence option (1) is the answer.

**9. Regular use of which of the following fertilizers increases the acidity of soil?**

- (1) Potassium nitrate
- (2) Urea
- (3) Superphosphate
- (4) Ammonium sulphate

**Solution:**

Ammonium sulphate is a salt of strong acid and weak base. It produces  $H^+$  ions on hydrolysis. This helps to increase the acidity of the soil.

Hence option (4) is the answer.

**10. What is DDT among the following?**

- (1) Greenhouse gas
- (2) A fertilizer
- (3) Biodegradable
- (4) Non-biodegradable pollutant

**Solution:**

DDT is non-biodegradable pollutant.

Hence option (4) is the answer.

**11. A red solid is insoluble in water. However it becomes soluble if some KI is added to water. Heating the red solid in a test tube results in liberation of some violet coloured fumes and droplets of metal appear on the cooler parts of the test tube. The red solid is**

- (1)  $HgI_2$
- (2)  $HgO$
- (3)  $Pb_3O_4$
- (4)  $(NH_4)_2Cr_2O_7$

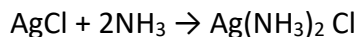
**Solution:**

On heating  $HgI_2$  decomposes as  $HgI \rightarrow Hg + I_2$

Hence option (1) is the answer.

**12. Which one of the following statements is correct?**

- (1) From a mixed precipitate of  $AgCl$  and  $AgI$ , ammonia solution dissolves only  $AgCl$
- (2) Ferric ions give a deep green precipitate on adding potassium ferrocyanide solution
- (3) On boiling at solution having  $K^+$ ,  $Ca^{2+}$  and  $HCO_3^-$  we get precipitate of  $K, Ca(CO_3)$ .
- (4) Manganese salts give a violet borax bead test in the reducing flame.

**Solution:**

Hence option (1) is the answer.

**13. Which of the following nuclear reactions will generate an isotope?**

- (1) neutron particle emission
- (2) positron emission
- (3)  $\alpha$ -particle emission
- (4)  $p$ -particle emission

**Solution:**

Neutron particle emission will generate an isotope.

Hence option (1) is the answer.

**14. The reason for “drug induced poisoning” is**

- (1) Binding reversibly at the active site of the enzyme
- (2) Bringing conformational changes in the binding site of enzyme
- (3) Binding at the allosteric sites of the enzyme
- (4) Binding irreversibly to the active site of the enzyme

**Solution:**

Binding at the allosteric sites of the enzyme is the reason for drug-induced poisoning.

Hence option (3) is the answer.

**15. Which of the following is a bactericidal antibiotic?**

- (1) Ofloxacin
- (2) Tetracycline
- (3) Chloramphenicol
- (4) Erythromycin

**Solution:**

Ofloxacin is a bactericidal antibiotic.

Hence option (1) is the answer.