



I. Choose the correct answer

[10 × 1 = 10]

- Man-made radioactivity is also known as _____
 - Induced radioactivity
 - Spontaneous radioactivity
 - Artificial radioactivity
 - a & c
- Unit of radioactivity is _____
 - roentgen
 - curie
 - becquerel
 - all the above
- $H_{2(g)} + Cl_{2(g)} \rightarrow 2HCl_{(g)}$ is a
 - Decomposition Reaction
 - Combination Reaction
 - Single Displacement Reaction
 - Double Displacement Reaction
- Photolysis is a decomposition reaction caused by _____
 - heat
 - electricity
 - light
 - mechanical energy
- The chemical equation
 $Na_2SO_{4(aq)} + BaCl_{2(aq)} \rightarrow BaSO_{4(s)} \downarrow + 2NaCl_{(aq)}$ represents which of the following types of reaction?
 - Neutralisation
 - Combustion
 - Precipitation
 - Single displacement
- The 'use and disuse theory' was proposed by _____.
 - Charles Darwin
 - Ernst Haeckel
 - Jean Baptiste Lamarck
 - Gregor Mendel
- The term Ethnobotany was coined by
 - Khorana
 - J.W. Harshberger
 - Ronald Ross
 - Hugo de Vries
- The spores which are extraterrestrial origin is _____
 - Sporangiospore
 - Microspore
 - Macrospore
 - Panspermia
- The miracle rice which saved millions of lives and celebrated its 50th birthday is _____
 - IR 8
 - IR 24
 - Atomita 2
 - Ponni
- In a hexaploid wheat ($2n = 6x = 42$) the haploid (n) and the basic(x) number of chromosomes respectively are
 - $n = 7$ and $x = 21$
 - $n = 21$ and $x = 21$
 - $n = 7$ and $x = 7$
 - $n = 21$ and $x = 7$

II. Answer any ten of the following questions

[10 × 2 = 20]

11. Write any three features of natural and artificial radioactivity.
12. State Soddy and Fajan's displacement law.
13. Give any two uses of radio isotopes in Archaeological research.
14. Define combination reaction. Give one example for an exothermic combination reaction.
15. Differentiate reversible and irreversible reactions.
16. When an aqueous solution of potassium chloride is added to an aqueous solution of silver nitrate, a white precipitate is formed. Give the chemical equation of this reaction.
17. What is biogenesis?
18. What is evolution?
19. Mention the theories of Lamarck.
20. What is Green revolution? Name the scientists connected with green revolution.
21. What is biofortification? Give examples.
22. Differentiate between out breeding and inbreeding.
23. Mention the methods and aims of plant breeding.

III. Answer any four of the following questions

[4 × 5 = 20]

24. List out the uses of radioactivity under (i) Agriculture (ii) Medicine (iii) Industry.
25. Compare the properties of alpha, beta and gamma radiations.
26. Explain the types of double displacement reactions with examples.
27. What are called thermolysis reactions?
28. Natural selection is a driving force for evolution-How?
29. Define Ethnobotany and its importance.
30. What is gene therapy? Explain the types.