

SCIENCE – KEY ANSWERS

SECTION – I one marks

1. One egg and one sperm
2. Polio
3. Thyroid gland
4. Aggregate fruit
5. Camel
6. All the above
7. Methane
8. Colloidal solution
9. A and B
10. 5
11. Ethene
12.  $1.496 \times 10^{11}$  m
13. It is measured using spring balance
14. Black
15. Both concave
- 16.

Section – II Two marks

17. i) Gene                      ii) Allele
18. i) Vitamin                ii) Stem Cell
19. Charles Darwin proposed the theory of natural selection  
Principles: 1. Struggle for existence and survival of the fittest  
2. Variation leads to genetic diversity which forms the evolution.

19. i) BCG    II) Tuberculosis

20. a) Bipolar            b) Multipolar

21. A – Anther        B – Filament

22.

23. i) Leucocytes    ii) diastole

24.

25

26.

- |    |                  |   |                      |
|----|------------------|---|----------------------|
| 27 | a) protozoa      | - | Contractile vacuolar |
|    | b) Coelenterates | - | Cell membrane        |
|    | c) Flat worm     | - | Excretory tube       |
|    | d) Annelids      | - | Nephridia            |

28. I)  $\text{CO}_2$     ii) Starch

29) i) Petroleum    ii) scabies

30)

- |    |               |          |             |              |
|----|---------------|----------|-------------|--------------|
| 31 | Renewable     | Hydrogen | wind        | solar energy |
|    | Non renewable | Coal     | Natural gas | Petroleum    |

- 32) i) Unsaturated Solution – 16 more grams of salt can be dissolved  
 ii) Saturated Solution – No more salt can be dissolved
- 33) The Phenomenon by which colloidal particles scatter light is called Tyndall Effect.
- 34) gram molecular mass of  $\text{CO}_2 = 44\text{g}$   
 Number of particles = (Avogadro number x given mass) / gram molecular mass  
 Number of molecules =  $(6.023 \times 10^{23} \times 11) / 44 = 1.51 \times 10^{23}$  molecules
35.  $\text{OH}^- = 10^{-8}$        $\text{p}^{\text{OH}} = -\log_{10}(10^{-8})$        $\text{p}^{\text{OH}} = 8$        $\text{p}^{\text{H}} = 14 - 8 = 6$
- 36) i) Baking powder is a mixture of baking soda and tartaric acid  
 ii) Carbonic acid is used in aerated drinks
- 37) i) Assertion and reason are correct and relevant to each other.
- 38
- 39
- 40) i) positive      ii) negative
41. i) One Newton is the force that produces an acceleration of  $1\text{ms}^{-2}$  in an object of **1 Kilogram** mass  
 ii) Action and reaction always acts on two different bodies
42. i) Electric fuse    ii) Joule's Heating effect
- 43 Symbols 1-3 , 2-4, 3-1,4-2
- 44)
- 45  $u = -20\text{cm}$      $f = -10.5\text{ cm}$        $v = ?$   
 $1/f = 1/v - 1/u$        $1/v = 1/f + 1/u = -1/10.5 - 1/20 = -(20+10.5/210) = -6.9\text{CM}$
- 46) i) Electromagnet      ii) Dioptre
47. i) used in torches, search-lights and vehicles head lights to get powerful parallel beams of light.  
 ii) Shaving mirrors to see a magnified image of the face.  
 iii) The dentists use concave mirrors to see large images of the teeth of patients.

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