

X - QUARTERLY EXAM. SCIENCE - KEY -2016 SEP.

**By T.SAMPATHKUMAR, B.T.ASST.
S.M.H.H.S.S. - SIRKALI. NAGAI DT.**

SECTION - I

- | | |
|---------------------------|----------------------------|
| 1.DNA | 9. Helium - oxygen |
| 2.Euglena | 10. green to black |
| 3. Bacteria | 11. Sorenson |
| 4. HIV | 12. Sun |
| 5.Thymosin hormone | 13. 392N |
| 6. Grass | 14. Electric energy |
| 7. Ovule | 15. greater than 82 |
| 8. 20g | |

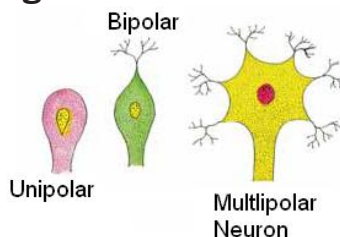
SECTION - II

- 16) **i) Genes ii) Alleles**
- 17) Phenotype: Morphological expressions of character.
Genotype: Expression of gene of an individual for a particular trait.
- 18) **Unmatched pair is Interferon - anti proteins of bacteria**
- 19) **The vaccine i.e. DPT we give for the prevention of three different diseases is called triple antigen. Three diseases are 1) Diptheria 2) Pertusis 3) Tetanus.**
- 20) i) Tuberculosis is caused by Mycobacterium tuberculosis bacteria. - **True**
iii) Malaria is caused by Plasmodium vivax. - **True**
- 21)

	Diseases	Causative pathogens
1	Typhoid	Salmonella typhi
2.	Amoebiasis	Entamoeba histolytica

- 22) **The dorsal portion of the midbrain consists of four hemispherical bodies called corpora quadrigemina, Functions: It controls and regulates the various visual reflexes and optical orientation.**

- 23) Only A is True but R is false.
24)



25)

	ASEXUAL REPRODUCTION	SEXUAL REPRODUCTION
1.	It takes place in <i>lower plants</i> .	It takes place in <i>higher plants</i> .
2.	It takes place by means of <i>spores</i> .	It takes place by means of <i>two gametes</i> . (male and female)

- 26) i) **Whole inflorescence** ii) **Aggregate**

- 27) A) **Gynoecium** B. **Fruit . Ovary is modified into fruit.**
- 28) **Phytoplankton** → **zooplankton** → **small fishes** → **kingfisher**
- 29) Wood, paper, and grasses : **Bio - degradable wastes**
 Plastic : **Non - bio - degradable wastes.**

- 30) 1. Internal combustion engines 2. Electricity, compressed air or fuel cells.
 3. Compressed natural gas used by natural gas vehicles.

31) **Weight percentage** = $\frac{\textit{Weight of the solute}}{\textit{wt.of solute+wt.of solvent}} \times 100$
 = $30 / 30 + 50 \times 100 = 37.5$

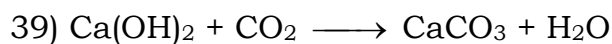
- | | |
|-------------------------|-----------------------------|
| 32) True solutions | Suspension |
| 1). Homogeneous | 1) Heterogeneous |
| 2) Not diffuses rapidly | 2) Diffuses does not occur. |
| 3) Transparent | 3) Opaque |
- 33) The phenomenon by which the colloidal particles are in continuous random motion.
- 34) The solution in which any liquid other than water acts as a solvent is called non-aqueous solution. Ex. Benzene, carbondisulphide.
- 35) a) An atom may or maynot exist freely. b) H₂O is **hetero** atomic molecule.

36) Gram molecular mass of H₂O = 2 (H) + 1 (O)
 = 2 (1) + 1 (16 = 18 g

37) $\textit{Atomicity} = \frac{\textit{Molecularmass}}{\textit{Atomicmass}} = \frac{28}{14} = 2$

So, nitrogen is a diatomic molecule and are written as N₂

38) $\text{pOH} = 3$
 $\text{pH} + \text{pOH} = 14$
 $\text{pH} = 14 - \text{pOH}$
 $\text{pH} = 14 - 3 = 11$



- 40) i) Silver Bromide ii) Double decomposition.
- 41) 2kg of mass at 4ms⁻²
- 42) Salute - 6, Salute - 7
- 43) **i)** One newton is the force that produces an acceleration of 1 ms⁻² in an object of 1 **kilogram** mass.
ii) Action and reaction always act on **two different** body.
- 44) 1)The wind speed should be higher than 15km/hr.
 2)It is not possible in all the seasons.
 3)Cost of establishment is high.

45) lead dioxide, zinc.

46) $R_1, R_2, R_3, R_4, R_5 = 5\Omega$ $R_{P1}, R_{P2}, R_{P3}, R_{P4} = 10\Omega$

$R_A, R_B, R_C, \& R_D$ are in parallel.

R_1 and R_2 are in series $R = 5 + 5 = 10$; $R + R_{P1} =$

$$\frac{1}{R} + \frac{1}{R_{P1}} = \frac{1}{10} + \frac{1}{10} = \frac{2}{10} = \frac{1}{5} \quad R_A = 5$$

R_A and R_3 are in series $R = 5 + 5 = 10$; $R + R_{P2} =$

$$\frac{1}{R} + \frac{1}{R_{P2}} = \frac{1}{10} + \frac{1}{10} = \frac{2}{10} = \frac{1}{5} \quad R_B = 5$$

R_B and R_4 are in series $R = 5 + 5 = 10$; $R + R_{P3} =$

$$\frac{1}{R} + \frac{1}{R_{P3}} = \frac{1}{10} + \frac{1}{10} = \frac{2}{10} = \frac{1}{5} \quad R_C = 5$$

R_C and R_4 are in series $R = 5 + 5 = 10$; $R + R_{P4} =$

$$\frac{1}{R} + \frac{1}{R_{P4}} = \frac{1}{10} + \frac{1}{10} = \frac{2}{10} = \frac{1}{5} \quad R_D = 5$$

The equivalent resistance between A and B = 5Ω

- 47) 1) Lead aprons and lead gloves are to be used while working in hazardous area.
2) Nuclear devices can be operated using remote control system.
3) Clean up contamination in the work area promptly.

SECTION – III

PART –I

- 48) Life cycle – description - 3 marks
Schematic diagram - 2 marks
- 49) Endocrine glands and their location - 2 marks
Description of any two - 3 marks ($1\frac{1}{2} \times 2$)

PART –II

- 50) i) Dehiscent and indehiscent fruit - 2 marks
ii) Aggregate and multiple fruits comparison – 3 marks
- 51) i) Green chemistry definition – 1 mark
ii) Principles any two - 2 marks
iii) alternates to petroleum - 2 marks

PART –III

- 52) i) findings of modern atomic theory - 3 marks
ii) No. of moles 2 - 2 marks
- 53) i) relation between vapour density and molecular mass – 3 marks
ii) calculation - 2 marks

PART –IV

- 54) i) Newton's law of gravitation - 3 marks
ii) Mass and weight differentiation - 2 marks
- 53) $R = -30\text{cm}$ $h = 5\text{cm}$ $u = -10\text{cm}$
Radius of curvature = 2 x focal length; $f = R / 2$; $-30 / 2 = -15$
- 54) i) Achievements of Chandrayan – 3 marks
ii) Space stations - 2 marks