

QUARTERLY COMMON EXAMINATION – 2015  
SCIENCE – ANSWER KEY  
SECTION – I

- |                              |   |
|------------------------------|---|
| 1. Beta                      | 9. Base                                 |
| 2. Using utensil of patients | 10. Decomposition reaction              |
| 3. Pancreas                  | 11. Zero                                |
| 4. Seed                      | 12. It is measured using spring balance |
| 5. Potassium iodide          | 13. Greater than 82                     |
| 6. Colloidal solutions       | 14. Electric energy                     |
| 7. Colloidal solutions       | 15. 4V                                  |
| 8. Suspension                |   |

SECTION – II

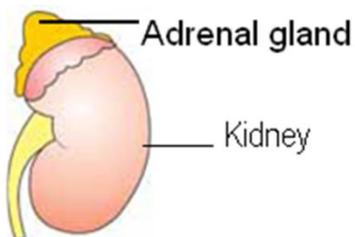
16. a. Intra specific                      b. Inter specific
17. Expression of **morphological characters** as tall or dwarf plants, violet or white flower is called Phenotype. The expression of **gene** (or genetic make up) of an individual for a particular trait is called Genotype.

18. Match:

Nif genes	Nitrogen Fixation
tt	Alleles
Bio-chips	Biological computer manufacturing
Stem cells	Unspecialized mass of cells

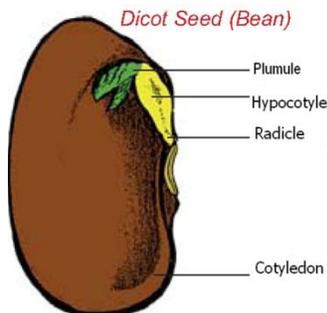
19. a. Primitive man evolved in **Africa**.  
b. Between **75,000** – 10,000 years the modern Homo sapiens arose.
20. Monoclonal anti -bodies are the **anti bodies produced by cloned cells**.  
It is used for **treatment of cancer**.
21. **Night blindness**. It is caused due to **vitamin A deficiency**. Others are **genetic disorders**.
22. Water borne:                      Typhoid  
Air borne:                              Tuberculosis, Pneumonia  
Sexual contact:                      AIDS.

23.



24. Both A and R are true and R explains A.

25.



26.

Fission	Protozoans	Bacteria
Budding	Bryophyllum	Yeast
Fragmentation	Spirogyra	Flatworms

27. i) autogamy ii) embryo (option is not given)

28. i) CO<sub>2</sub> ii) Carbohydrate

29. Producers: Shoe flower

Consumers: Primary - Gross – hopper, Secondary – Calotes

Decomposers: Nitrobacteria

30. Phytoplanktons → Zooplanktons → Small fish → King fisher

31. No. No more solute can be dissolved in a definite amount of solvent at the same temperature. But if temperature increased then some more solute can be dissolved. Reason: Solubility increases with the temperature increases.

32. a) CO<sub>2</sub> b) Solubility can be increased by increasing pressure.

33. a) Yes. It is an exothermic reaction so solubility of calcium oxide decreases with increase in temperature.

b) Yes. It is due to increase the molecular motion. The solubility of KNO<sub>3</sub> increases with increase in temperature.34. a)  $2 \times \text{Vapour density} = \text{Molecular mass}$ b) An atom may or may not exist independently.

35.  $\text{pOH} = -\log_{10}(\text{H}^+)$        $\text{pOH} = -\log_{10}(0.001)$   
 $\text{pOH} = -\log_{10}(10^{-3})$        $= -(-3)\log_{10} 10$       ( $\log 10 = 1$ )  
 $\text{pOH} = 3$   
 $\text{pH} = 14 - 3 = 11$

36.  $\text{Fe} + \text{CuSO}_4 \longrightarrow \text{FeSO}_4 + \text{Cu}$ 

Iron is more reactive than copper.

Iron displaces copper from CuSO<sub>4</sub> solution.37. a) The pH of acid is lesser than 7.b) Carbonic acid is used in aerated drinks.

38. a) momentum = mass x velocity

b) Liquid Helium is used in MRI.39. i) One newton is the force that produces an acceleration of 1 ms<sup>-2</sup> in an object of 1 **kilogram** mass.ii) Action and reaction always act on the **two different** body.

40. Positive, Negative

41. i) A good source of energy would be one which would do a **large** amount of work per unit volume of mass.ii) Any source of energy we use to do work is consumed and **cannot** be used again.

42. a) α and β radiations.

b) They are electromagnetic radiation.      - γ  
 They have high penetrating power.      - γ  
 They are electrons.      - β  
 They contain neutrons.      - α

43.

+ ve electrode	Lead acid accumulator	<b><u>Lead Oxide</u></b>
- ve electrode	Lechlanche cell	<b>Zinc</b>

44. a) Serial lights were connected in a series. So  
The Potential difference across each bulb is  $= \frac{\text{Total Potential Difference}}{\text{No. of bulbs}} = \frac{240}{12} = 20V$
- b) If the bulbs were connected in parallel the potential difference across each bulb is 240 V.
45.  $i_1 + 2A = 3A$ ,  $i_1 = 3A - 2A = 1A$   
 $3A = 1A + i_2$ ,  $i_2 = 3A - 1A = 2A$   
 $i_2 = i_3 - 1.5A$ ,  $2A - 1.5A = 0.5A$   
 Therefore  $i_1 = 1A$ ,  $i_2 = 2A$   $i_3 = 0.5A$

## SECTION – III

## PART - I

46. What is immunity? Write a note on the various types of immunity.

**Immunity: It is the body's defence against or specific resistance exhibited towards the infectious organisms.----- 2 mark**

**Types of immunity: -----3 marks**

47. **Diagram with parts: 2 marks**

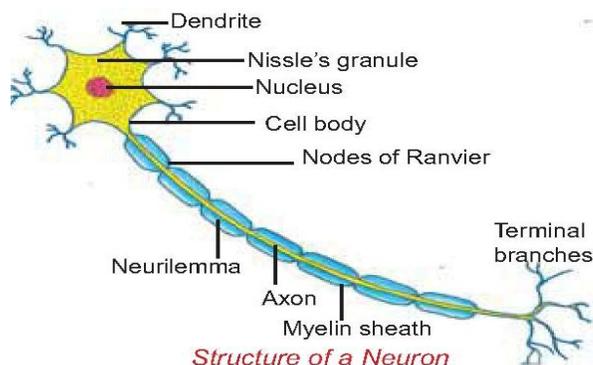
**Structure: ----- 3 marks**

**Nerve cells**

**Cell body**

**Dendrites**

**Axon**



## PART – II

48. Pollination and Fertilization. ----- 1 mark

**A) Discuss the first event and write the types.**

The transfer of pollen grains from the anther to the stigma of a flower is called pollination. 1. Self pollination 2. Cross pollination -----2 marks

**B) Mention the advantages and the disadvantages of that event. ----- 2 marks**

49. This situation not good for health. ----- 1 mark

REASON: Any five points -----4 marks

## PART – III

50. a) 2 moles ----- 1 mark



Mass of sodium bi carbonate is No. of moles x molecular mass

$$= 2 \times 84 = 168 \text{ gram} \text{ ---- 3 marks}$$

- c) 1 mole ----- 1 mark

51. a) Three findings of modern atomic theory -----3 marks

- b) Two differences atoms and molecules ----- 2 marks

## PART – IV

52. a) First law of motion ----- 2 marks

Justification ----- 1 mark

- b) Problem: Acceleration of the mass ----  $F = ma$  ----- 1 mark

$$a = F/m = 5 / 2.5 = 2\text{ms}^{-2} \text{ ----- 1 mark}$$

53. Any five achievements ----- 5 marks

By

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