

**S.S.L.C. PUBLIC EXAMINATION April 2014**

**SCIENCE ENGLISH MEDIUM**

**KEY ANSWER**

Maximum Marks : 75

**SECTION - I**

**15x1 =15**

1.	Charles Darwin	9.	bauxite
2.	Tuberculosis	10.	carbon
3.	Endosperm	11.	490N
4.	Ethanol	12.	$9 \times 10^{16} \text{J}$
5.	Coal	13.	Cow-dung
6.	Scattering	14.	Convex
7.	Decomposition	15.	Magnetic field
8.	froth floatation		

**SECTION - II**

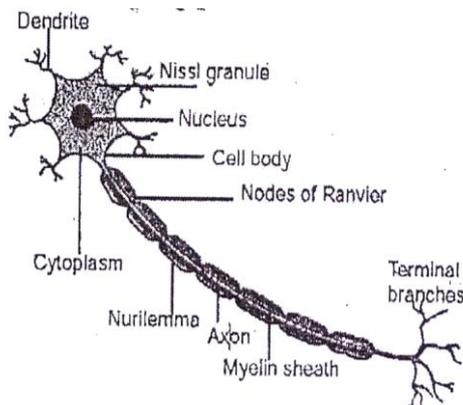
**20x2=40**

**(Any Twenty)**

16.		2Mark
	1 Intra Specific	Inter Generic

17. The Symptoms are correct in case of Kwashiorkor, but not for Marasmus. In Marasmus the child loses weight and suffers severe diarrhea and it will appear as though bones are covered by skin. In kwashiorkor the child develops an enlarged belly with swelling in face and feet.

18.



19. Pachytene

20. Leptotene → Zygotene → Pachytene → Diplotene → Diakinesis

21. a) Correct

b) Fruits like Balsam burst with a sudden jerk and disperse the seeds by an explosive mechanism. If all these seeds were directly below the parent plant, the seedlings would have to compete for space, water, oxygen, minerals and sunlight, leading to competition. When the seedlings are grouped together at one place, they could easily be destroyed by grazing animals. So in order to eliminate the unhealthy competitive struggle that would arise from overcrowding, and to ensure the successful establishment of a species on the earth, the seeds fall off far away from the mother plant.

22. A) Hair, bristle, quills
23. Kidney, It maintains the chemical composition of blood.
24. (Hemoglobin) Carriage of Oxygen  
(Leucocytes) - Phagocytosis (Engulfing the germs)
25. Autotrophs → Chlorophyll → Hibiscus  
Parasites → Haustoria → Cuscuta  
Saprophytes → Mycorrhiza → Monotropa
26. a) 1. Photosynthesis - 3. Respiration  
b) In this process plants absorb CO<sub>2</sub> and H<sub>2</sub>O and convert them into carbohydrates in the presence of sunlight and chlorophyll.
27. a) Dengue fever, Chikungunya  
b) Sewage water should be properly Maintained.  
Mosquitoes repellents are used. using mosquito net.
28. Renewable → Hydrogen → Wind → Solar energy  
Non-Renewable → Coal → Natural Gas → Petroleum
29. 1. Bio-Alcohol, 2. Green Diesel, 3. Bio Diesel, 4. Vegetable Oil  
5. Bio-ethers 6. Bio -gas
- 30.

Saturated Solution	Unsaturated Solution
A solution in which no more solute can be dissolved in a definite amount of solvent at a given temperature is called a saturated solution	A solution in which the solute is in lesser amount in comparison with the solvent is called unsaturated solution. In this, addition of solute is possible till the solution reaches the point of saturation
36g NaCl in 100g water at room temperature is saturated solution	16g NaCl in 100g water at room temperature in unsaturated solution

31. Reflection, Scattering
32. Atomicity =  $\frac{\text{Molecular mass}}{\text{Atomic mass}} = \frac{28}{14} = 2$
33. Copper is displaced by iron and iron sulphate is formed . Due to this, the blue colour of copper sulphate is changed to green. Iron is more reactive than copper.
34.  $\text{pOH} = -\log_{10} (\text{OH}^-)$   
 $= -\log_{10} (1.0 \times 10^{-8})$   
 $= -\log_{10} 1 + \log_{10} 10^{-8}$   
 $= -(0 - 8 \log_{10} 10)$   
 $= -(0 - 8 \times 10)$   
 $= 8$   
 $\text{pOH} = 8$   
 $\text{pH} + \text{pOH} = 14$   
 $\text{pH} = 14 - 8$   
 $= 6$   
 $\text{pH} = 6$

35. 1. Pig iron is used in making stoves, radiators, railings, man hole covers and drain pipes.  
 2. Steel is used in the construction of buildings, machinery, transmission and T.V.towers and in making alloys.  
 3. Wrought iron is used in making springs, anchors and electromagnets.
36. It is a powerful reducing agent
37. 1.  $\text{CH}_3\text{COOH}$       Acetic acid      Ethanoic acid  
 2.  $\text{HCHO}$       Formaldehyde      Methanal
38. It is measured using spring balance
39. a) One Newton is the force that produces an acceleration of  $1 \text{ ms}^{-2}$  in an object of 1kilo gram mass.  
 b) Action and reaction are always acting on the different body.
40. Given,  $R_1=5\Omega$ ,  $R_2 = 10\Omega$ ,  $R_3=30\Omega$  . These resistances are connected parallel.

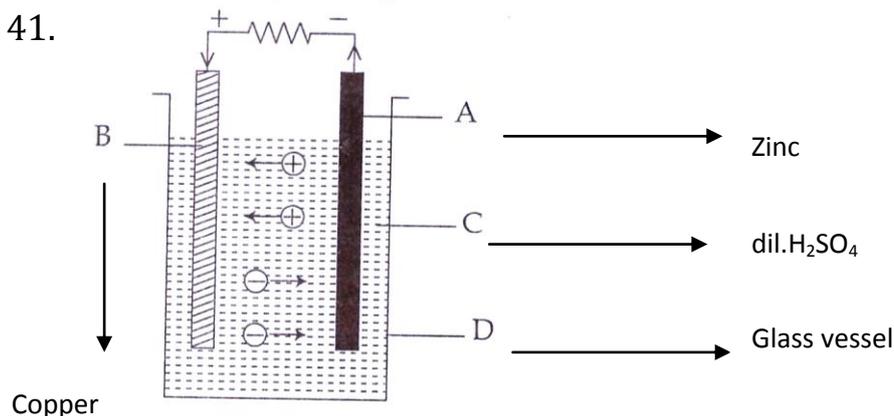
Therefore,

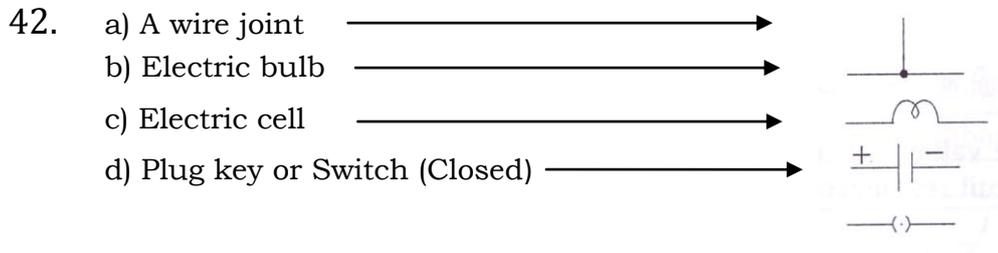
$$\frac{1}{R_p} = \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}$$

$$\frac{1}{R_p} = \frac{1}{5} + \frac{1}{10} + \frac{1}{30}$$

$$\frac{1}{R_p} = \frac{10}{30}$$

@ $R_p = 3\Omega$





43. a) Electromagnet  
 b) Dioptre

44. a) Iris  
 b) Retina

45. Focal length of Concave lens  $f = -2\text{m}$   
 Power of lens  $= 1/f = 1/2 = -0.5$  dioptre

46. a) Genetic engineering is the modification of the genetic information of living organisms by manipulation of DNA by adding, removing or repairing part of genetic material (DNA) and changing the phenotype of the organism. It is also known as gene manipulation or recombinant DNA Technology

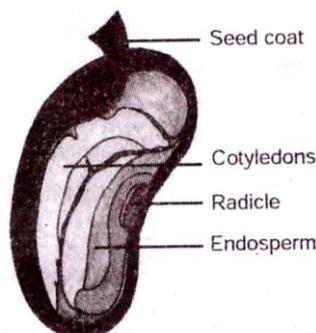
b) Understanding of the gene structure and function through basic research.

Production of large quantities of insulin, interferon, human growth hormones, proteins and vaccines for foot and mouth disease of cattle etc.

This technique is also employed in the transfer of genes involved in Nitrogen fixation. This will help the cultivator to increase productivity.

47. a) Immunization schedule 3Marks  
 b)Curing as per as schedule 2Marks

48. Diagram – 2 marks  
 Description – 3 marks



Dicot Seed (Bean)

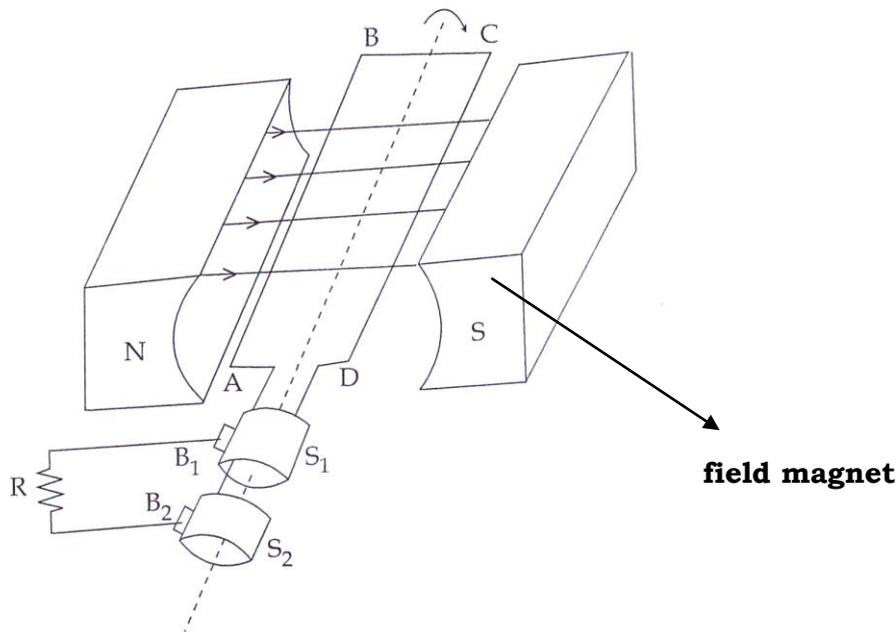
49. NO. Harmful effects (any 4 points) 1 + 4 marks  
 50. Findings of Modern atomic theory 3Marks  
 Applications 2Marks

51. Define “Esterification” 2Marks  
 Three uses of Ethanol 3Marks

52. a) Space Station are used to study the effects of long-space flight on the human body justification 2Marks

b) Every object in the universe attracts every other object with a force which is directly proportional to the product of the masses and inversely proportional to square of the distance between them. The force acts along the line joining the centres of two objects.

53



- (a) Redraw the above diagram
- (b) This diagram represents **AC Generator**
- (c) Label the parts of the diagram - **B1 B2 brushes, R – resistance, S1 S2 – slip rings**
- (d) Electromagnetic induction

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*IF you can't fly then run  
If you can't run then walk  
If you can't walk then crawl  
But whatever you do  
You have to keep moving forward*

- Martin Luther King, Jr.