SSLC SEPTEMBER - 2017 - SCIENCE

Time Allowed :2 ½ Hours **Maximum Marks:75**

Note :This question paper contains three sections.

SECTION – I

Note: (i) Answer all the 15 Questions. **15x1=15**

(ii) Choose the correct answer from the alternatives given in the brackets.

1. Mendel observed 7 pairs of contrasting characters in Pisum Sativum. Which one of the following is not a part of that? (Tall and dwarf, Yellow and green seed colour, Terminal and axial flower, Smooth and rough stem)
2. An example of protozoan infecting our intestine is ……. (Plasmodium vivax, Entamoeba histolytica, Trypanosoma gambience, Tennia solium)
3. The part of brain which controls emotional reactions in our body is …… (Cerebellum, Cerebrum, Thalamus, Hypothalamus)
4. Which of the following is correctly matched? (False fruit-mango, multiple fruit – apple, Aggregate fruit – polyalthia, Caryopsis – banana)
5. Mitral valve is found between …….. (Right auricle and right ventricle, Left auricle and left venticle, Right ventricle and pulmonary artery, Left ventricle and aorta)
6. The phloem in the plants is responsible for …..(transport of water, transport of food, transport of minerals, transport of oxygen)
7. An example of water –borne disease is ….. (Scabies, Dracunculiasis, Trachoma, Typhoid)
8. In an exothermic process, solubility increases with ……..in temperature. (increase / decrease)
9. Vinegar is present in acetic acid. Curd contains ……. acid. (Lactic acid / Tartaric acid)
10. Any metal mixed with mercury is called amalgam. The amagam used for dental filling is ……..(Ag-sn amalgam / Cu-Sn amalgam)
11. IUPAC name of the first member of alkene is …… (Ethene / Ethyne)
12. One light year is equal to ……(365.25 x 24 x 60 x 60 x 3 x 10^8m, 1 x 24 x 60 x 60 x 3x 10^8m, 360 x 24 x 60 x 60 x 3 x 10^8m)
13. The mass of a person in 5 kg. The weight of that person on the surface of the earth will be ……. (50N, 35 N, 49N, 490N)
14. The atomic number of natural radioactive element is …(greater than 82, less than 82, not defined, atleast 92)
15. An object placed 20cm from a convex lens whose focal length is 10cm. The image distance is ……. (50cm, 20cm, 6.66cm, 10cm)

SECTION – II (Marks:40)

Note: Answer any twenty questions. **20x2=40**

16. Match the following.

Character	Dominant Trait	Recessive Trait
Seed shape	Wrinkled	Round
Seed colour	Green	Yellow
Stem height	Tall	Dwarf
Flower position	Terminal	Axial

17. The inheritable characters vary in different species and within the same species. Name the variation in the following cases. i) The eye colour among the human beings are varied as blue, black, brown, green etc. This is called……as variation. ii) The definition in the rabbit and the elephant are not the same. This called as ……..variation.
18. In dogs, the barking trait is dominant over the silent trait. Using punnet square, work out the possible puppies born to two barking parents with genotype (Rr)
19. Match the following.

Disease	Symptoms
i) Amoebiasis	a) Chills, shivering and rise in temperature.

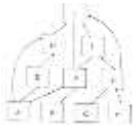
ii) Tuberculosis	b) Patches on skin and nails with itching sensation
iii) Ringworm	c) Abdominal pain with blood and mucus in stools
iv) Malaria	d) Persistent cough and loss of body weight

20. Assertion (A) : All spinal nerves are mixed nerves
Reason (R) : Each spinal nerve has a sensory root and a motor root.
i) Both (A) and (R) are true and (R) explains (A) ii) Both (A) and (R) true, but (R) doesn't explains (A)
iii) Only (A) is true but (R) is false iv) (A) is false but (R) is true.
21. Draw the given diagram and label the following parts.
i) Exine ii) Tube nucleus

22. Copy the diagram and label any two parts.
23. Mention any four adaptations see in the camel so that it can live successfully in deserts.
24. i) Social attachments among animals is called …..(Imprinting / Cross fostering)
ii) Case study of Mr. Arun Venkatraman was about …….. (Dog / Dholes)
25. Sugar solution is converted into alcohol. In the above reaction.
i) What kind of process takes place? ii) Which micro – organism is involved?
26. Match the following.

i) Ammonotelic	a) Annelids
ii) Ureotelic	b) fish
iii) Uricotelic	c) Mammal
iv) Nephridia	d) Birds

27. Describe the change that occurs in a touch-me-not plant when it is touched?
28. Observe the following Food web.



i) Find out the wrong statement:
a) 'A' is a producer b) 'F' is a herbivore iii) 'H' is an omnivore d) 'I' is a climax carnivore
ii) Find out how many food chains are present in the above food web.
29. Pick out the appliances that can conserve electric energy. Florescent bulbs, copper choke, solar water heater, tungsten bulbs, electronic choke.
30. Fossil fuels formed by decomposition of biomass buried under the earth over millions of years ago.
i) Name any one fossil fuel. ii) Which is used in the production of fertilizers.
31. Find the odd one out.
a) Bioalcohol, Green diesel, Bioethers, Petroleum b) cholera, typhoid, scabies, dysentry
32. Beaker 'A' has chalk powder mixed with water and Beaker 'B' has protein dissolved in water.
i)Which soloution shows Brownian movement? ii) Identify the solution that has particle size greater than 2000 A^0 iii) Which beaker contains colloidal solution? iv) Say whether colloidal solution is homogeneous or heterogeneous.
33. Take 10g of common salt and dissolve it in 40g of water. Find the concentration solution in terms of weight percent.
34. Give a single term substitute for each of the following:
i) 6.023×10^{23} molecules ii) 22.4 litres of gas at STP
iii) $1/12^{th}$ part of the mass of one atom of carbon – 12 iv) Half of relative molecular mass
35. Correct the wrong statement. i) Hydrocholoric acid is an organic acid. ii) The ideal pH of blood is 5.5
36. When lead powder is added to copper chloride solution a displacement reaction occurs and solid copper is formed. i) Write the equation for the reaction. ii) Why does the displacement reaction occur?
37. Assertion: In thermite welding, aluminium powder and Fe_2O_3 are used.
Reason: Aluminium powder is a strong oxidising agent. Does the reason satisfy the assertion?
38. Guess who am I? i) I am a constituent of blood pigment. When I am less in quantity, the person is anaemic. ii) I am formed when matrix and flux react.
39. An organic compound A is widely as a preservative in pickle and ahas a molecular formula $C_2H_4O_2$. This compound reacts with ethanol to form a sweet smelling compound B.
i) Identify the compounds A and B ii) Name the process and write the corresponding chemical equation.
40. The important use of cryogenics is cryogenic fuels. What do you mean by cryogenic fuels?

41. Give any two differences between Mass and Weight.
42. Complete the table chossing the right terms within the brackets. (Zinc, Copper, Carbon, Lead dioxide, aluminium)

+ve electrode	Lead acid accumlator	-------
-ve electrode	Lechlanche cell	-------

43. Correct the mistakes, if any, in the following statements.
    i) A good source of energy would be one which would do a small amount of work per unit volume of mass. ii) Any source of energy we use to do work is consumed and can be used again.
44. Draw the schematic diagram of an electric circuit consisting of a battery of two cells of 1.5 V each, three resistence of 5 ohm, 10ohm and ohm respected and a plug key all connected in series.
45. Correct the mistakes, if any in the following statements.
    i) The magnetic field is a quantity that has magnitude only.
    ii) Outside the bar magnet, the magnetic field lines emerge from the south pole and merge at the north pole.
46. Write down the names of the specified parts of the human eye.
    i) Dark muscular diaphragm that controls the pupil. ii) The screen where the image is formed by the eye lens.
47. A needle placed at 30 cm from the lens forms an image on a screen placed 60 cm on the other side of the lens. Identify the type of lens and determine the focal length.

SECTION – III (Marks: 20)

Note : (i) Answer any four questions by choosing one question from each part. 4x5=20
(ii) Each question carries five marks.(iii) Draw diagram wherever necessary.

PART – I

48. What is immunity? Write a note on the various types of Immunity.
49. Name the endocrine glands and their location in the human body. Describe any two of them in detail.

PART –II

50. What is self-pollination? Mention its merits and demerits.
51. In your locality people are affected due to water scarcity. What measures will you take to deal with the problem of water scarcity? (any 5)

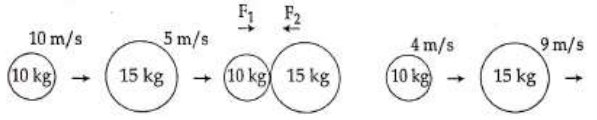
PART –III

52. Find how many moles of atoms are there in:
    i) 2g og nitrogen ii) 23g sodium iii) 40g of calcium iv) 1.4g of lithium v) 32g of sulphur
53. Complete the following table.

Molecular formula	Common Name	IUPAC Name
$CH_3CH_2CH_2CH_2OH$	-------	-----
---------	Dimethyl Ketone	-----
--------	--------	Propanal
HCOOH	--------	--------
--------	------	Butanone

PART –IV

54. i) Newton's first law of motion gives a qualitative definition of force. Justify.
    ii) The figure represents two bodies of masses 10kg and 15 kg, moving with an initial velocity of $10ms^{-1}$ and $5ms^{-1}$ respectively. they collide with each other. After collision, they move with velocities $4ms^{-1}$ and $9ms^{-1}$ respectively. The time of collision is 2s. Now calculate F_1 and F_2.



55. i) The optical prescription of a pair of spectacle is: Right eye : -3.5 D Left eye: -4.00 D
    a) Name the defect of the eye. b) Are these lenses thinner at the middle or at the edges?
    c) Which lens has a greater focal length? ii) Define power of lens and give its unit.