GENIUS TUITION CENTRE- SPECIAL QUESTION PAPER 2016

Class: Xth STD   Subject: **SCIENCE**   Marks: 75   Time: 2:30 hrs.

SECTION - A   (15 x 1 = 15)

(i)   Answer all the questions. (ii) Choose and write the correct answer.

1. Primitive man evolved in _____
   (Africa,   America,   Australia,   India)

2. The first vaccine injected into a just born baby is _____
   (Oral polio,   DPT,   DPT and Oral polio,   BCG)

3. An endocrine gland which is both exocrine and endocrine is the ____
   (Pancreas,   pituitary,   thyroid,   adrenal)

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 ventricle, Right
   ventricle and pulmonary artery, Left ventricle and aorta)

6. The product obtained in the anaerobic respiration of yeast is _____
   (Lactic acid, Pyruvic acid, Ethanol,   Acetic acid)

7. _____ is used in seeding clouds.
   (Potassium iodide, calcium carbonate, sulphurdioxide, ammonium
   phosphate)

8. Which is a non-renewable resource?
   (Coal,   petroleum,   natural gas,   all the above)

9. The mixture of gases used by deep-sea divers is ___ (helium-oxygen,
   oxygen- nitrogen)

10. A reddish brown coloured element 'X' on heating in air, becomes a
    black coloured compound 'Y'. X and Y are ___ and ___ (Cu, Cuo / Pb,
    Pbo)

11. Gold does not occur in the combined from. It does not react with air
    or water. It is in the _____ state. (native / combined)

12. Buckminster fullerene is the allotropic from of _____ (Nitrogen /
    Carbon / Sulphur)

13. The mass of an object is 5 kg. what is its weight on the earth _____
    (49 N,   0.49 N,   4.9 N,   0.049 N)

14. The atomic number of natural radioactive element _____
    (greater than 82, less than 82, not defined,   atleast 92)

15. The field of view is maximum for _____ (plane mirror, concave mirror, convex mirror)

SECTION – B   (20 x 2 = 40)

(i)   Answer any twenty questions.

16. Sequentially arrange the different species of man from primitive to modern man.

   (Neanderthal man, Homo habilis, Homo erectus, Homo sapiens)

17. What are monoclonal antibodies? Mention its use.

18. Find the unmatched fairs.

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

19. Name the tests done for the diagnosis and confirmation of AIDS.

20. Copy the diagram and label the parts with the help of the clues given.
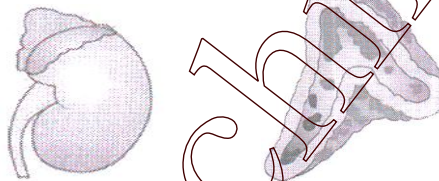
    (i)   It is otherwise called supra renal gland.
    (ii)   It secretes two hormones namely aldosterone and cortisone.

21. Use words from the given list to complete the following paragraph.
    (The words may be used once / more than once / not at all)
    Raja went to the field along with his father. He showed mustard seeds in the soil. After a few days he observed the process of _____. The seeds grew into plants and produced _____. On maturity, these flowers produced pollen grains that were transferred to the stigma by _____. The male gametes fused with the female gametes during the process of _____

22. Which blood cells are without nuclei? What is the advantage of this condition?

23. Mention the various valves and their location in the human heart?

24. (a) Primary excretory organ : _____
    (b) River of life   : _____

25. What is photosynthesis? Write a balanced equation for this bio-

chemical reaction?

26. Describe the change that occurs in a touch-me-not plant when it is touched?

27. Match the methods of nutrition of special organs with suitable examples?

Autotrophs	Mycorrhiza	Cuscutta
Parasites	Chlorophyll	Monottopa
Saprophytes	Haustoria	Hibicus

28. Fill in the blanks.

(a) Animals give out _____ through respiration.

(b) In the presence of sunlight, plants prepare _____

29. A non-renewable resource is a natural resource, if it is replaced by natural process at a rate equal to or faster than its rate of consumption by humans.

Read this statement and say whether it is correct or incorrect. If it is incorrect, give the correct statement.

30. What are diseases that have a greater risk of spread in high population density places like bus stand or school?

31. Find the odd one out. (i) bio-alcohol, green diesel, bio-ethers, petroleum. (ii) cholera, typhoid, scabies, dysentry.

32. Porkodi prepared a solution which could be separated by filtration.
    a. Name the type of solution.
    b. Is the solution transparent or opaque?
    c. Mention the nature of the solution.

33. Find the concentration of solution in terms of weight percent if 20 gm of common salt is dissolved in 50 g of water?

34. Calculate the number of water molecules present in one drop of water which weigh 0.18 g.

35. Identify the wrong statements and correct them.
    (a) Sodium benzoate is used in food preservative.
    (b) Nitric acid is not used as fertilizer in agriculture.
    (c) The p^H of acid is greater than 7.

36. Why does the colour of copper sulphate change when an iron nail is kept in it? Justify your answer.

37. Assertion: A greenish layer appears on copper vessels, if left uncleaned.

Reason: It is the due the formation of layer of basic copper carbonate. Give the correct option:

a) Assertion and reason are correct and relevant to each other.
b) Assertion is true but reason is not relevant to the assertion.

38. The design the body of an aircraft, aluminium alloys are used. Give reasons.

39. Write down the possible isomers and give their IUPAC names using the formula C_4H_{10}

40. Kanishka is standing in a dinning line 6.38×10^3 km from the centre of the earth. The mass of the earth is 6×10^{23} kg.
    (i)   Find the acceleration due to gravity.
    (ii)   Will the value change after she finishes her lunch?

41. Correct the mistakes, if any, in the following statements.
    (a) A good source of energy would be one which would do a small amount of work per unit volume of mass.
    (b) Any source of energy we use to do work is consumed and can be used again.

42. What is bio-mass? What can be done to obtain bio-energy using bio-mass?

43. The figure is a part of closed circuit. Find the currents i_1, i_2 and i_3

44. Complete the table choosing the right terms from within the brackets. (Zinc, copper, carbon, lead oxide, aluminium)

+ve electrode	Daniel cell	
-ve electrode	Leclanche cell	

45. Does magnetic monopole exists? Give reasons.

46. How can you identify the three types of mirrors without touching them? Give reasons.

47. Light enters from air to kerosene having refractive index of 1.47. What is the speed of light in kerosene, if the speed of light in air is 3×10^8 m/s?

SECTION – C   (4 x 5 = 20)

(i) Answer any four questions by choosing one question from each part.
(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. Describe the structure of a dicot seed.

51. In your locality people are affected due to water scarcity. What measures will you take to deal with the problem of water scarcity?

PART – III

52. Sodium bicarbonate breaks down on heating.

    $2NaHCO_3 \quad ---\rightarrow \quad Na_2Co_3 + H_2O + CO_2$

    (Atomic mass of Na = 23, C = 12, H = 1, O = 16)

    a. How many moles of sodium bicarbonate are there in the equation?
    b. What is the mass of sodium bicarbonate?
    c. How many moles of carbon dioxide are there in the equation?

53. Organic compound 'A' of molecular formula C_2H_6O liberates hydrogen gas with sodium metal. 'A' gives 'B' of formula $C_4H_{10}O$, when it reacts with concentrated H_2SO_4 at 410K. At 440K with concentrated H_2SO_4 'A' gives compound 'C' of formula C_2H_4. This compound 'C' decolourises bromine water. What are 'A', 'B' and 'C'?

PART – IV

54. State Newton's law of gravitation. Write an expression for acceleration due to gravity on the surface of the earth. If the ratio of acceleration due to gravity of two heavenly bodies is 1 : 4 and the ratio of their radii is 1 : 3, what will be the ratio of their masses?

55.
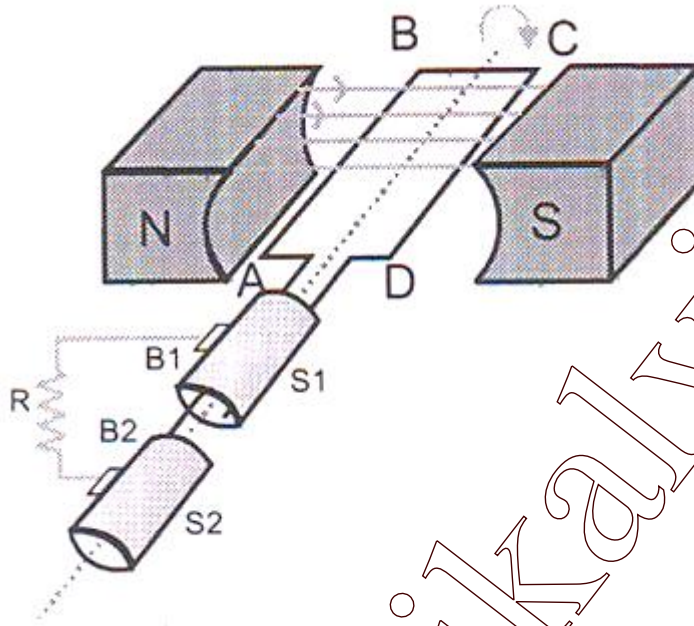
    a. Redraw the above diagram.
    b. This diagram represents _____
    c. Label the parts of the diagram.
    d. Mention the principle used in the device denoted by this diagram?

ALL THE BEST

Prepared by

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"ஆசிரியப் பணியே அறப்பணி என்றும் அறப்பணியில் என்றென்றும் அன்புடன் அரசு".