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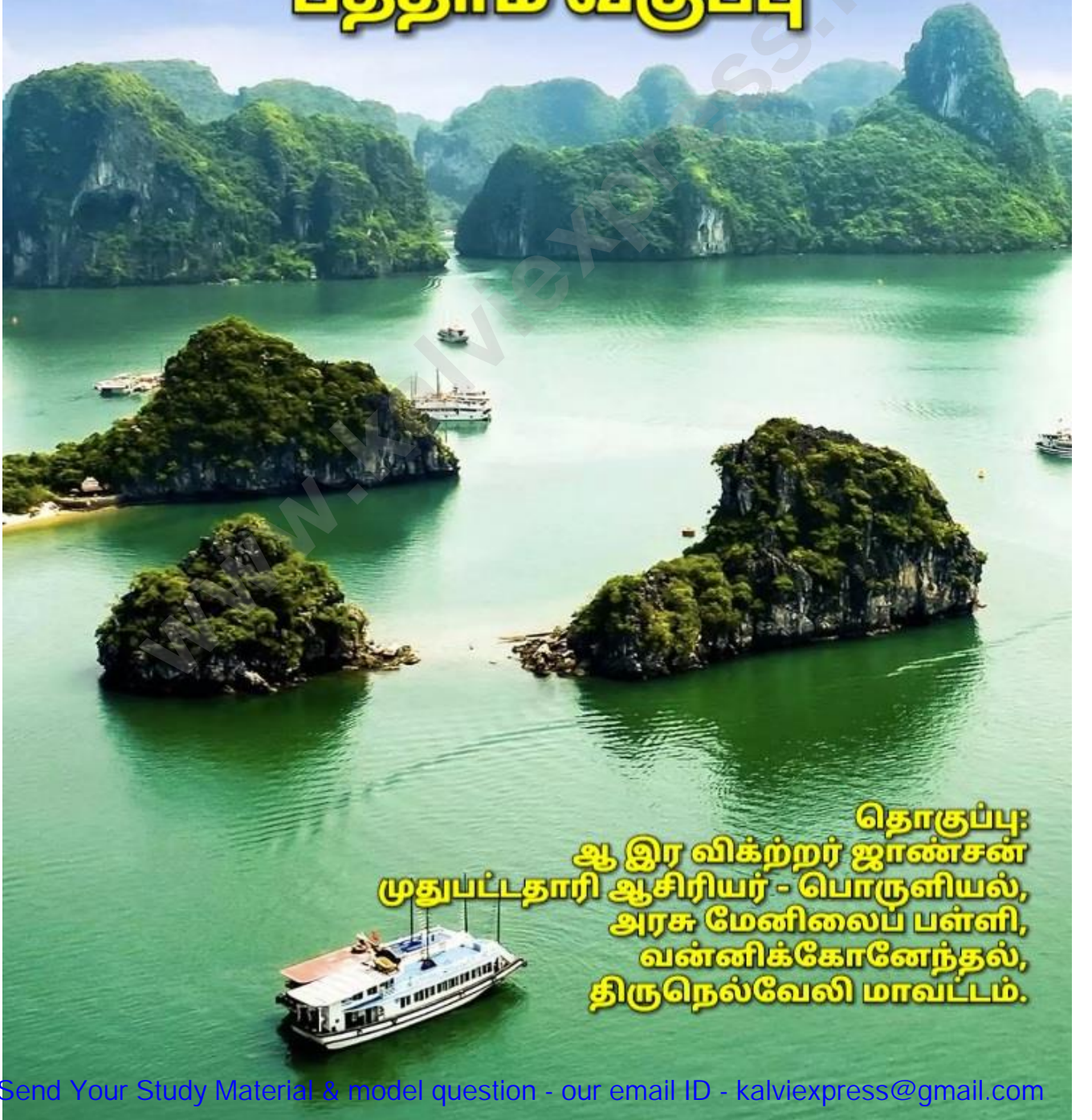
தொகுப்பு:
ஆ. இர விக்ற்றர் ஜாண்சன்
முதுபட்டதாரி ஆசிரியர் - பொருளியல்,
அரசு மேனிலைப் பள்ளி,
வன்னிக்கோனேந்தல்,
திருநெல்வேலி மாவட்டம்.

X-TH STANDARD SCIENCE

QUESTION BANK

TWO MARKS

1. State Rayleigh"s law of scattering?

2. What are the causes of myopia?

3. Define inertia. Give one example

4. Define moment of couple.

5. Define Relative atomic mass.

6. Write the difference between atoms and molecules.

7. Calculate the number of moles in 1.51×10^{23} molecules of NH4cl.

8. How are arteries and veins structurally different from one another?

9. Draw and Label the structure of oxysomes.

10. Write the reaction for photo synthesis?

11. List out the parasitic adaptation in leech.

12. Mention the three regions present in the rabbit"s brain?

13. Differentiate the two types of circulatory system.

14. What are the functions of mitochondria?

15. In the circuit diagram given below, three resistors R1, R2 and R3 of 5 Ω, 10 Ω and20 Ω respectively are connected as shown.
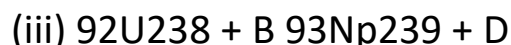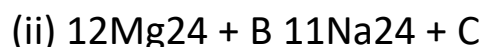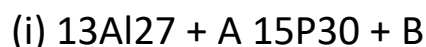
EDUNEWS   MULLAKKADU

16. Calculate:

a) The total current in the circuit

b) Total resistance in the circuit

17. State Ohm's law.

18. Give the laws of reflection of sound waves.

19. Identify A, B, C, and D from the following nuclear reactions.

(i) $_{13}Al^{27} + A$ $_{15}P^{30} + B$

(ii) $_{12}Mg^{24} + B$ $_{11}Na^{24} + C$

(iii) $_{92}U^{238} + B$ $_{93}Np^{239} + D$

20. In Japan, some of the new born children are having congenital diseases. Why?

21. Give 4 uses of ethanol.

22. Name the simplest ketone and give its structural formula.

23. Why does the reaction rate of a reaction increase on raising the

temperature?

24. Name three improved characteristics of wheat that helped India to

achieve high productivity.

25. What is adult onset diabetes?

26. What is Van Mahotsav?

27. List the environmental concern of shale gas.

28. Distinguish file and folder.

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29. State the law of purity of gametes or the law of segregation.

30. Write a note on development of Dolly.

31. Why does sound travel faster on a rainy day than on a dry day?

32. Calculate the current and the resistance ofa 50 W, 250 V electric bulb in an electric circuit.

33. Why is tungsten metal used in bulbs, but not in fuse wires?

34. True or false:- (If false give the reason)

i). Sound can travel through solids, gases, liquids and even vacuum.

ii). Waves created by Earth Quake are Infrasonic.

35. Define combination reaction. Give one example for an exothermic combination reaction.

36. Can a nickel spatula be used to stir copper sulphate solution? Justify your answer.

37. Define endothermic reaction. Give an example.

38. What is Nucleolar organizer?

39. Mention the symptoms seen in the case of down "s syndrome.

40. How the telomeres act as aging clock in every cell?

41. How can you determine the age of the fossils?

42. Why is archaeopteryx considered to be a connecting link?

43. State the applications of DNA finger printing technique.

44. Define heredity and variation.

45. Define one calorie.

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46. What is co-efficient of cubical expansion?

47. What are the effects of heat energy

48. A is a reddish brown metal, which combines with O2 at < 1370 K gives B, a black coloured compound. At a temperature > 1370 K, A gives C which is red in colour. Find A,B and C with reaction.

49. What is rust? Give the equation for formation of rust

50. What is aqueous and non-aqueous solution? Give an example.

51. Find the mass of potassium chloride would be needed to form a saturated solution in 60 g of water at 303 K? Given that solubility of the KCl is 37/100 g at this temperature.

52. What is EEG?

53. Define reflex arc.

54. What is a neurotransmitter?

55. Why is cotisol known as life saving hormone?

56. Write the differences between endocrine and exocrine glad.

57. Mention any two ways of maintaining toilet hygiene.

58. State whether the following statements are true or false: If false, correct the statement

I Plutonium -239 is a fissionable material.

II Elements having atomic number greater than 83 can undergo nuclear fusion.

iii. Nuclear fusion is more dangerous than nuclear fission.

iv. Natural uranium U-238 is the core fuel used in a nuclear reactor.

59. Define critical mass.

60. Mass number of a radioactive element is232 and its atomic number is 90. When this element undergoes certain nuclear reactions, it transforms into an isotope of lead with a mass number 208 and an atomic number 82. Determine the number of alpha and beta decay that can occur.

61. Calculate the amount of energy released when a radioactive substance undergoes fusion and results in a mass defect of 2 kg.

62. Give any two uses of radio isotopes in the field of medicine?

63. Define esterification with example.

64. How is ethanoic acid prepared from ethanol? Give the chemical equation.

65. Differentiate soaps and detergents.

66. Write a note on symptoms of diabetes mellitus.

67. Differentiate malignant and non- malignant tumour.

68. How can we prevent child sexual abuse?

69. What are psychotropic drugs?

70. a. Solar cell is made of _____.

b. burning of plastic produce _____.

71.c. _____ is a test to confirm presence of HIV.

72. Differentiate non-renewable and renewable energy sources.

73. What are the effects of heat energy?

74. What do you mean by apparent expansion of the liquid?

75. State avogadro's law.

76. What is rust? Give the equation for formation of rust.

77.1 Atomic radius

2 Ionisation energy

3 Electro Negativity

4 Ionic radius

78. True or False. (If false give the correct statement)

a. The molecular formula of green vitriol is $MgSO_4.7H_2O$.

b. Solution which contains three components is called 'binary solution'.

79. All solutions are mixtures; but all mixtures are not solutions. Why?

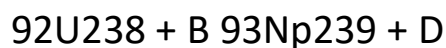80. Define triple fusion.
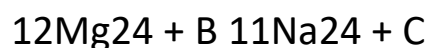
81. Draw and label thyroid gland.

82. What is bolting? How can it be induced artificially?

83. Draw the structure of neuron and label its parts.

84. Name the parts of Hind brain.

85. Write the functions of Cerebrospinal Fluid.

86. Identify A, B,C,D from the following equations.

$13Al27 + A$ $15P30 + B$

$12Mg24 + B$ $11Na24 + C$

$92U238 + B$ $93Np239 + D$

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87. Write few difference between nuclear fission and nuclear fusion.

88. Calculate the amount of energy released when a radioactive substance undergoes fusion and results in a mass defect of 2kg.

89. Give Advantages of detergents over soap.

90. What is homologous series? Give any three of its characterstics.

91. Give the balanced chemical equations of the following reactions.

i. Neutralisation of NaOH with ethanoic acid.

ii. Evolution of carbondioxide by the action of ethanoic acid

with $NaHCO_3$.

iii. Oxidation of ethanol by acidified Potassium dichromate.

iv. Combustion of ethanol.

92. Differentiate soaps and detergents.

93. What are the consequences of deforestation? undergoes fusion and results in a mass defect of 2 kg.

94. Enumerate the importance of forest.

95. How can create files ?

96. Suggest measures to overcome the problems of an alcoholic .

97. List the prevention and control measures of AIDS.

98. Differentiate mass and weight.

99. If a 5 N and a 15 N forces are acting opposite to one another. Find the resultant force and the direction of action of the resultant force

 100 . Why are traffic signals red in colour?

EDUNEWS   MULLAKKADU

101 . What does real expansion means?

102. State-the law of volume

103. What are heterodiatomic molecules give any two examples

104. What are amalgams

105. 16 grams of NaOH is dissolved in 100 grams of water at 25°C to form a saturated solution. Find the mass percentage of solute and solvent.

106. What is starch sheath?

107. What is diastema?

108. What is plasmolysis?

109. Why does mammalian RBC lack of cell organelles and nucleus?

110. Name the cerebral lobe.

111. What is melatonin?

FOUR MARKS

1. State the universal law of gravitation and device it mathematical expression.

2. The ratio of masses of two planets is 2:3 and ratio of their radii is 4: 7.

3. Find the ratio of their accelerations due to gravity.

4. Draw ray diagram for object placed at C by using convex lens.

5. Derive Lens makers" formula.

EDUNEWS   MULLAKKADU

6. Explain about Hypermetropia with diagram?

7. a. All compounds are molecules but, all molecules are not compound, why?

b. Write the applications of Avogadro"s Law?

8. Device the relationship between Relative molecular mass and vapor density.

9. a. Calculate the number of moles in 27g. of Al.

b. Calculate the number of water molecule present in one drop of water which weighs 0.18g.

10. Draw the ground plan of T.S of monocle root and label the parts.

11. Explain the male reproductive system of rabbit with a labelled diagram.

12. How do plants absorb water? Explain.

13. Explain the structure of chloroplast.

14. Why are leucocytes classified as granulocytes and granulocytes? Name each cell and mention its functions

15. Give the differences between resistance and conductance.

16. Give a brief account of chain reaction and its types.

17. Define.

i. Nuclear fusion.

ii. Conditions necessary for nuclear fusion.

iii. Stellar energy.

EDUNEWS   MULLAKKADU

.18. Explain the conditions necessary for hearing echo.

19. Explain the manufacture of ethanol.

20. Give the general characteristics of organic compounds.

21. The hydroxide ion concentration of a solution is $1 \times 10^{-11}M$. What is the pH of the solution?

22. Describe mutation breed with an example.

23. The sex of the new born child is a matter of chance and neither of the parents may be considered responsible for it. What would be the possible fusion a gametes to determine the sex of the child.

24. What is diabetes? Explain the type.

25. a. How are chromosomes classified based on the position of centromere?

b. Dolly was developed by _____.

26. a. Write a note an solar cells.

b. _____ is known as the father of Indian paleobotany.

27. Define electric potential and potential difference.

28. What is a LED bulb, List the merits of LED bulb over a normal

incandescent bulb.

29. Three resistors of resistances 5 ohm, 3 ohm and 2 ohm are connected in parallel with 10 V battery. Calculate their effective resistance and the current flowing through the circuit.

30. Define any 3 properties of sound with unit.

31. Differentiate light and sound waves.

<mark>EDUNEWS   MULLAKKADU</mark>

32. Define decomposition reactions write the main classes of decomposition reaction.

33. A solid compound „A" decomposes on heating into „B" and a gas „C". On passing the gas „C" through water, it becomes acidic. Identify A, B and C and write the entire reaction.

34. Differentiate reversible and irreversible reactions.

35. Distinguish between:

a. Somatic gene therapy and germ line gene therapy.

b. Undifferentiated cells and differentiated cell.

36. With a neat labelled diagram explain techniques involved in gene cloning.

37. Write a note on DNA replication.

38. Why are genetically modified organisms produced? Explain the purpose and advantages.

39. a. what is punnet square?

b. Write a note on vestigial organs?

40. Calculate the coefficient of cubical expansion of a zinc bar. Whose volume is increased 0.25 m3 from 0.3 m3 due to the change in its temperature of 50K.

41. Write short notes on the different types of expansion of solid due to the effect of heat

42. State the three fundamental laws of gases

<mark>EDUNEWS   MULLAKKADU</mark>

43. Metal A belongs to period 3 and group 13. A in red hot condition reacts with steam to form B. A with strong alkali forms C. Find A,B and C with reactions.

44. Define the terms

a. electro negativity, b. electron affinity c. Ionisation energy

45. Explain the types and uses of Iron

46. In what way hygroscopic substances differ from deliquescent substances.

47. List the function of cerebrospinal fluid.

48. Describe the structure of spinal cord.

49. Write a note on thyroid Dysfunctions.

50. Explain the physiological effects of auxins.

51. With a neat labelled diagram describe the parts of a typical angiospermic ovule.

52. Explain atom bomb.

53. Give a brief comparison between natural and artificial radioactivity.

54. Give a brief account of alpha, beta and gamma decay.

55. Give the balanced chemical equations of the following reactions.

i. Neutralisation of NaOH with ethanoic acid.

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with NaHCO3.

iii. Oxidation of ethanol by acidified Potassium dichromate.

iv. Combustion of ethanol. EDUNEWS   MULLAKKADU

56. Give 4 chemical properties of ethanol.

57. Characteristics of homologous series.

58. Obtain the IUPAC name of the following compounds systematically:

a. CH3CHO (b) CH3CH3COCH3

b. ClCH2-CH2-CH2-CH3 (d) C2H5OH

59. Explain the waste water treatment process.

60. What are the sources of solid wastes? How are solid wastes managed?

61. a. What is sprite?

 b.What is scratch

62. Write a note on biogas.

63. Enumerate the importance of forest.

64. Explain the process of Linear expansion.

65. Calculate the co-efficient of cubical expansion of zinc bar. Whose volume is increased 0.25m3 from 0.3 m3 due to the change in its temperature of 50K.

66. State charle's law? Derive expression for it.

67. a. State the reason for addition of caustic alkali to bauxite ore during purification of bauxite.

b. Along with cryolite and aluminium, another substance is added to the electrolyte mixture. Name the substance and give one reason for the addition.

68. a. Name the acid that renders aluminium passive. Why?

b. Identify the bond between H and F in HF Molecule.

c. What property forms the basis of Identification?

d. How does the property changes in periods and in groups?

69. In what way hygroscopic substances differ from deliquescent substances.

70. a. Define solubility with formula.

b. 15g of solute is dissolved in 75g of water to form a saturated solution

 at 298k. Find out the solubility of the solute at given temperature.

71. Differentiate between the unipolar neurons and bipolar neurons.

72. What is Thyroglobulin? Write the functions of thyroid hormones.

73. Write a essay on the parts of a typical flower.

74. Write a physiological effects of gibberellins.

75. Explain UTI.

76. Identify A, B,C,D from the following equations.

13Al27 + A 15P30 + B

12Mg24 + B 11Na24 + C

92U238 + B 93Np239 + D

77. Write few difference between nuclear fission and nuclear fusion.

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81. Give the balanced chemical equations of the following reactions.

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82. Differentiate soaps and detergents.

83. What are the consequences of deforestation?

84. Enumerate the importance of forest.

85. How can create files ?

86. Suggest measures to overcome the problems of an alcoholic .

87. List the prevention and control measures of AIDS

88. Two blocks of masses 8 kg and 2 kg respectively lie on a smooth

horizontal surface in contact with one other. They are pushed by a

horizontally applied force of 15 N. Calculate the force exerted on

the 2 kg mass.

89. Discuss the 4 cases ofapparent weight of a person in a moving lift

90. Give a brief account of types and advantages of telescope

91. Explain the experiment to measure real and apparent expansion of liquid

EDUNEWS   MULLAKKADU

92. Consolidate the major difference between atoms and molecules.

a) Identify the bond between H and F in HF molecule.

b) What property forms the basis of identification?

c) How does the property vary in periods and in groups

93. Explain the types of solutions based on the amount of solute

94. Draw a transverse section of dicot leaf and label the parts.

95. a. how does locomotion take place in leech

b. Thyroid gland requires _____ of iodine everyday for the

production of thyroxine.

96. How nerve impulses are transferred from one neuron to next neuron?

97. Write a note on contraceptive method.

98. a. Differentiate simple reflexes and conditional reflexes.

b. What is parthenocarpy?

EDUNEWS   MULLAKKADU

SEVEN MARKS

1. Explain working process of NUCLEAR REACTOR.

(Or)

Can you identify

   a. The place where the atom bomb released world war II.
   b. What type of rays released ?
   c. c. What principle involved in atom bomb?
   d. d. What is your opinion about above incidence.

2. Explain the mechanism of cleaning action of soap.

   (Or)

   a. Write the characteristics of hydrocarbons.

   b. Explain the test to identify saturated and unsaturated compounds.

3. Describe the Smoking Hazards and Effects of Tobacco.

       (Or)

   a. Write the Aims of Wild life management

    b. Describe the Organisations involved in conservation of Wildlife.

 4. Explain Conventional Wastewater Treatment with neat labelled

   diagram.

       (Or)

       a. Explain the Methods of Rain Water harvesting.
       b. What is Biogas? Write the Uses and Advantages of biogas.

5. Derive the ideal gas equation.

       (Or)
       Explain the experiment of measuring the real and apparent
       expansion of liquid with neat diagram.

6. a.Explain smelting process.

    b. A is a silvery white metal. A combines with O2 to form B at 8000C.

      alloy of A is used in making the aircraft. Find A and B.

(Or)

   a. Write a note on various factors affecting on solubility.
       EDUNEWS   MULLAKKADU

   b. What happens when MgSO4.7H2O is heated? Write the appropriate equation.

7. Illustrate the structure and function of brain.

   (Or)

   Describe the structure of spinal card.

8. Enumerate the steps involved in Foetal development.

   (Or)
   a. What are the phases of menstrual cycle?
   b. Indicate the changes in the ovary and uterus.

9.   i. State and prove the law of conservation of linear momentum.

   ii. State Newton's laws of motion?
   (Or)
   a. Explain the 6 cases of refraction through a convex lens
   i   Object at infinity
   ii. Object placed beyond C (>2F)
   iii. Object placed at C
   iv. Object placed between F and C
   v. Object placed at the principal focus F
   vi. Object placed between the principal focus F and optical centre O
   b. i. Relative Atomic Mass (RAM)
    ii. Give the salient features of "Modern atomic theory".
   b. Give a detailed report of
   i. Terminology in metallurgy
   ii. Deliquescence substances

9.   a. Write a note on the agents of cross pollination.

b. What is Imbibition? EDUNEWS   MULLAKKADU

(Or)

a. Write a note an ABO blood grouping.

b. What is Guttation?

10. a. Describe and name three stages of cellular respiration that

aerobic organism use to obtain energy from glucose.

b. What is implantation?

(Or)

a. Write a note on ascent of sap.

b. Differentiate xylem and phloem

11. An object of height 3cm is placed at 10cm from concave lens of total

length 15 cm. Find size of the image.

(Or)

Write sign Convention rules?

12. a. Give the Salient features of "Modern atomic theory".

13. b. Calculate the % of each element in calcium carbonate

(Atomic mass:- C-12, 0-16, ca- 40).

(Or)

a. Calculate molar mass of H2O and co2.

b. Calculate the % relative abundance of B- 10 and B- 11, if its average atomic

mass is 10.804 amu.

14. Enumerate the functions of blood

(Or)

Differentiate the following

a. Monocot root and Dicot root

b. Aerbic and Anaerobic respiration

15. Draw and explain the structure of Mitochondria.

    (Or) Differentiate dicot and monocot stem.

16. Explain in detail

    (i) Heating effect of current
    (ii) Joules heating law
    (iii) Applications of heating effect of current
    (Or)
    b. Give a detailed account of alpha, beta, gamma decay with their properties and radioactive displacement law.

17. a. Explain in detail the chemical properties of ethanoic acid and ethanol

    (Or)
    (i) Give a detailed account of
    i. Double displacement reactions.
    ii. 3 types of decomposition reactions with examples.

18. a. How do you differentiate homologous organs from analogous organs?

    b. What are living fossils?
    c. What are psychotropic drugs are referred as _____.
    (Or)

a. Write a note an renewable and non- renewable energy resource.

    b. Which is goldilocks zone for life? Why?

19. a. Natural selection is a driving force for evolution. How?

    b. Write a note on cancer treatment?

(Or)

   a. Biofortification may help in removing hidden hunger. How?

   b. The degenerated wings of a kiwi an acquired character. Why is it an acquired character.

21. With the help of a circuit diagram derive the formula for the

   resultant resistance of three resistances connected:

   a. in series and b. in parallel

   (Or)

22. Explain the conditions for no Doppler effect and applications of Doppler effect.

23. Explain the factors influencing the rate of a Reaction.

   (Or)

   How does pH play an important role in everyday life?

24. a. Write a note on selection.

   c. What is rDNA?

   d. Mention two characteristics of stem cells.

   (Or)

   a. How does fossilization occur in plants?

   b. Explain atavism?

   c. What is theory of cosmic origin?

25. a. Write a note on mutation.

   c. The enzyme _____ separates the two strands of DNA during replication.

   (Or)

a. Explain with an example the inheritance of dihybrid cross. How is it different from monohybrid cross?

b. _____ is the chemical used for doubling the chromosomes.

c. A protein rich wheat variety is _____.

26. Derive ideal gas equation.

(Or)

Give a brief account of scale of temperatures and it"s conversions (Kelvin,

celsius, farenhiet)

27. List out the physical and chemical properties of iron

(Or)

Write a note on various factors affecting on solubility.

28. Illustrate the structure and functions of brain.

(Or)

Describe an experiment which demonstrates that growth stimulating

hormone is produced at the Tip of coleoptile.

29. a. What will you do if someone pricks your hand with a needle? Elucidate the pathway of response with a neat labelled diagram.

b. Junction between two neurons is called _____

c. Myelin sheath breaks at intervals called _____.

(Or)

a. What are the phases of menstrual cycle? Indicate the change in the ovary & uterus.

b. Cleavage results in formation of _____.

c. An oocyte remains alive for _____ hours.

30. (i) Tabulate the features of nuclear fission and nuclear fusion.

(ii) Stellar energy . EDUNEWS   MULLAKKADU

(iii) Controlled and uncontrolled chain reaction.

(Or)

Give a detailed account of types, components and uses of a nuclear Reactors.

31. Explain in detail the manufacture, physical properties and uses of

ethanoic acid.

(Or)

Explain the cleansing action of soap with the advantages and disadvantages of detergents over soaps.

32. a. Write a note on prevention and control of AIDS.

b. What is neoplasm?

(Or)

a. Write a note on smoking hazards and effects of tobacco.

b. What is metastasis?

33. a. Suggest measure to overcome the problems of an alcoholic.

b. What are the consequences of deforestation?

(Or)

a. How does rainwater harvesting structures recharge ground water?

b. List some ill effects of e-wastes.

A.R.VICTOR JOHNSON

P. G. TEACHER,

GOVERNMENT HIGHER SECONDARY SCHOOL,

VANNICONENDAL

TIRUNELVELI DISTRICT