Padasalai's Telegram Groups!

(தலைப்பிற்கு கீழே உள்ள லிங்கை கிளிக் செய்து குழுவில் இணையவும்!)

- Padasalai's NEWS - Group
https://t.me/joinchat/NIfCqVRBNj9hhV4wu6_NqA

- Padasalai's Channel - Group
https://t.me/padasalaichannel

- Lesson Plan - Group
https://t.me/joinchat/NIfCqVWwo5iL-21gpzrXLw

- 12th Standard - Group
https://t.me/Padasalai_12th

- 11th Standard - Group
https://t.me/Padasalai_11th

- 10th Standard - Group
https://t.me/Padasalai_10th

- 9th Standard - Group
https://t.me/Padasalai_9th

- 6th to 8th Standard - Group
https://t.me/Padasalai_6to8

- 1st to 5th Standard - Group
https://t.me/Padasalai_1to5

- TET - Group
https://t.me/Padasalai_TET

- PGTRB - Group
https://t.me/Padasalai_PGTRB

- TNPSC - Group
https://t.me/Padasalai_TNPSC

SCIENCE CENTUM COACHING

X STD 75 MARKS

CYCLE 1
UNIT: 1,2,7,8,12,13,14

PART –A 12x 1=12

1. Mechanics is the branch of physics that deals with the effect of ____ on bodies
   a) Force b) Acceleration c) Pressure d) Energy

2. Plotting a graph for momentum on the X-axis and time on Y-axis. slope of momentum-time graph gives
   a) Impulsive force b) Acceleration c) Force d) Rate of force

3. Power of a lens is –4D, then its focal length is
   a) 4m b) –40m c) –0.25 m d) –2.5 m

4. The volume occupied by 1 mole of a diatomic gas at S.T.P is
   a. 11.2 litre b. 5.6 litre c. 22.4 litre d. 44.8 litre

5. Third period (Atomic number 11 to 18): This is also a short period.
   a) (Sodium to Argon). b) (Sodium to potassium) c) (Potassium to Krypton) d) (Rubidium to Xenon).

6. The Valency of all the alkali metals is ---. a) 4 b) 0 c) 1 d) 2

7. The body of leech has
   a) 23 segments b) 33 segments c) 38 segments d) 30 segments

8. The animals which give birth to young ones are
   a) Oviparous b) Viviparous c) Ovoviviparous d) All the above

9. The endarch condition is the characteristic feature of
   a) root b) stem c) leaves d) flower

10.Cortex lies between _____ And Glycolysis takes place in _____

11.The wall of human heart is made of

a) Endocardium b) Epicardium c) Myocardium d) All of the above

12. During transpiration there is loss of

a) carbon dioxide b) oxygen c) water d) none of the above

PART – B 22 COMPULSARY LIKANACH (ANY 7) 7X2=14

13.Define moment of the Force

14.At what height from the centre of the Earth the acceleration due to gravity will be 1/4th of its value as at the Earth.

15.Give any two examples for heterodiatomic molecules.

16.Write the different types of isotopes of oxygen and its percentage abundance.

17.Predict the nature of the bond in the following molecules. (i)NaCl (ii) NaBr

18.Explain the reaction off iron with chlorine

19.Draw and label the structure of oxysomes.

20.What is respiratory quotient?

21.Why are the rings of cartilages found in trachea of rabbit?

22.A ball of mass 1 kg moving with a speed of 10 $^{ms-1}$ rebounds after a perfect elastic collision with the floor. Calculate the change in linear momentum of the ball.

PART-C 33 COMPULSARY LIKANACH (ANY 7) 7x4=28

23. Light rays travel from vacuum into a glass whose refractive index is 1.5. If the angle of incidence is 30°, calculate the angle of refraction inside the glass

24. State Snell's law. AND Draw a ray diagram to show the image formed by a convex lens when the object is placed between F and 2F.

25.Why does the sky appear in blue colour and Why are traffic signals red in colour?

26.Calculate the number of moles in

i) 27g of Al ii) 1.51×10^{23} molecules of NH_4Cl

27.Explain the Conversion of bauxite into alumina – Baeyer's Process

28.Why is the teeth of rabbit called heterodont and How does leech suck blood from the host and How does leech respire?
29.Where do the light dependent reaction and the Calvin cycle occur in the chloroplast?
30.How do plants absorb water? Explain.
31.Enumerate the functions of blood.
32. How are arteries and veins structurally different from one another?
33. 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

PART D (ANY 1 FROM EACH) 3x7=21

34 A)Differentiate the eye defects: Myopia and Hypermetropia

B)The eyes of the nocturnal birds like owl are having a large cornea and a large pupil. How does it help them?

(or)
C) Explain three Newton's law

D) Explain types of inertia .

35
A) Derive the relationship between Relative molecular mass and Vapour density
B) Calculate the % of oxygen in $Al_2(SO_4)_3$. (Atomic mass: Al-27, O-16, S -32)

(or)

C) State the reason for addition of caustic alkali to bauxite ore during purification of bauxite.
D) Along with cryolite and alumina, another substance is added to the electrolyte mixture. Name the substance and give one reason for the addition.
Name the acid that renders aluminium passive. Why?

36

A) How is the circulatory system designed in leech to compensate the heart structure ?

(or)

B) Describe and name three stages of cellular respiration that aerobic organisms use to obtain energy from glucose.

ALL THE BEST DEARS

DEDICATION + DETERMINATION →DISTINCTION

D. HIFZUR RAHMAN MSc.,MPhil.,

TGT – SCIENCE

SCIENCE CENTUM COACHING

X STD 75 MARKS

CYCLE 2

UNIT : 3,4,9,10,15,16,17,23

PART –A 12x 1=12

1. If a substance is heated or cooled, the linear expansion occurs along the axis of

a) X or –X b) Y or –Y c) both (a) and (b) d) (a) or (b)

2. Ideal gas equation, also called as equation of state is PV = RT. Here, R is known as universal gas constant whose value is _____

a) 8.31 J $mol^{-1}K^{-1}$ b) 3.81 J $mol^{-1}K^{-1}$ c) 8.51 J $mol^{-1}K^{-1}$ d) none of these

3. Electric current is oft en termed as 'current' and it is represented by the symbol

a) 'I' b) 'EC' c) 'Q/T' d) 'A'

4. Solubility of NaCl in 100 ml water is 36 g. If 25 g of salt is dissolved in 100 ml of water how much more salt is required for saturation _____.

a. 12g b. 11g c. 16g d. 20g

5. Complete the reaction :- $SiO_{2(s)} + CaO_{(s)} \rightarrow$ _____

6. Vomiting centre is located in

(a) medulla oblongata (b) stomach (c) cerebrum (d) hypothalamus

7. Nerve cells do not possess

(a) neurilemma (b) sarcolemma (c) axon (d) dendrites

8. Cytokinins are the plant hormones that_____ cell division

(a) promote (b) divides (c) exhaust (d) destroyes

9. LH is secreted by

a) Adrenal gland b) Thyroid gland c) Anterior pituitary d) Hypothalamus.

10. Asexual reproduction takes place through budding in _____ .

a) Amoeba b) Yeast c) Plasmodium d) Bacteria

11. 'Scratch' is a software used to create

a)Script b) Bullets c) Stage d) Animations

12. Which is used to build scripts?

a) Script area b) Block palette c)Stage d)Sprite

PART – B 22 COMPULSARY LIKANACH (ANY 7) 7 x 2=14

13. State Boyle's law
14. state ideal gas equation
15. Explain SI unit of electric current
16. Two components) are called binary solutions. Explain it with example.
17. Find the amount of urea which is to be dissolved in water to get 500 g of 10% w/w aqueous solution?
18. Define Physiological effects of auxins
19. What are chemical messengers?
20. → → → → → →
21. What is folder?
22. A container whose capacity is 70 ml is filled with a liquid up to 50 ml. Then, the liquid in the container is heated. Initially, the level of the liquid falls from 50 ml to 48.5 ml. Then we heat more, the level of the liquid rises to 51.2 ml. Find the apparent and real expansion.

. Identify the parts A, B, C and D

<u>PART-C</u> 33 COMPULSARY LIKANACH (ANY 7) 7x4=28

23. Derive the ideal gas equation.
24. Distinguish between linear, arial and superficial expansion.
25. An electric heater of resistance 5 Ω is connected to an electric source. If a current of 6 A flows through the heater, then find the amount of heat produced in 5 minutes.
26. 3.5 litres of ethanol is present in 15 litres of aqueous solution of ethanol. Calculate volume percent of ethanol solution.
27. Write in detail on the major classes of double displacement reactions.
28. Calculate the pH of 1×10^{-4} molar solution of NaOH.

29. Differentiate between Voluntary and involuntary actions.
30. Which hormone requires iodine for its formation? What will happen if intake of iodine in our diet is low?
31. With a neat labelled diagram describe the parts of a typical angiospermic ovule.
32. Define triple fusion. And Write the characteristics of insect pollinated flowers.
33. 'A' is a blue coloured crystaline salt. On heating it loses blue colour and to give 'B'. When water is added, 'B' gives back to 'A'. Identify A and B, write the equation.

PART - D (ANY 1 FROM EACH) 3x7=21

34

A) Explain the experiment of measuring the real and apparent expansion of a liquid with a neat diagram

B) If you keep ice at 0° C and water at 0°C in either of your hands, in which hand you will feel more chillness? Why?

(or)

C) Why is tungsten metal used in bulbs, but not in fuse wires?
D) What is the role of the earth wire in domestic circuits?
E) a) State Joule's law of heating.
b) An alloy of nickel and chromium is used as the heating element. Why?
c) How does a fuse wire protect electrical appliances?

35

A) Write notes on i) saturated solution ii) unsaturated solution
B) Write notes on various factors affecting solubility.

(or)

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

D) Solve the following problems

1. Lemon juice has a pH 2, what is the concentration of H^+ ions?
2. What is the pH of 1.0×10^{-5} molar solution of KOH?
3. The hydroxide ion concentration of a solution is 1×10^{-11}M. What is the pH of the solution?

36

A) Describe the structure of spinal cord.

B) How nerve impulses are transferred from one neuron to next neuron? Classify neurons based on its

(or)

C) Name the gaseous plant hormone. Describe its three different actions in plants.

D) Which hormone is known as stress hormone in plants ? Why?

ALL THE BEST DEARS

DEDICATION + DETERMINATION → DISTINCTION

D. HIFZUR RAHMAN MSc.,MPhil.,

TGT – SCIENCE

SCIENCE CENTUM COACHING

X STD 75 MARKS

CYCLE 2

UNIT : 5,6,11,18,19,20,21,22

PART –A 12x 1=12

1.Sound waves travel in air with a speed of about at NTP.
a. 340 ms^{-1} b. 330 ms^{-1} c. 440 ms^{-1} d. 430 ms^{-1}

2. The frequency, which is audible to the human ear is
a. 50 kHz b. 20 kHz c. 15000 kHz d. 10000 kHz

3. Unit of radioactivity is _____
a. roentgen b. curie c. becquerel d. all the above

4. The number of carbon compounds found in nature and man-made, is much____ that of any other element in the periodic table
a) lower than b) higher than c) equal than d) all of these

5. TFM in soaps represents _____ content in soap
a. mineral b. vitamin c. fatty acid d. carbohydrate

6. The IUPAC name of an organic compound is 3-Methyl butan-1-ol. What type compound it is?
a. Aldehyde b. Carboxylic acid c. Ketone d. Alcohol

7. Erwin Chargaff states that in, the proportion of adenine is always equal to that of thymine.
a. DNA b. RNA c. rDNA d. rRNA

8. The term Ethnobotany was coined by
a. Khorana b. J.W. Harsbberger c. Ronald Ross d. Hugo de Vries

9. We can cut the DNA with the help of
a. scissors b. restriction endonucleases c. knife d. RNAase

10. Which type of cancer affects lymph nodes and spleen?
a. Carcinoma b. Sarcoma c. Leukemia d. Lymphoma

11. A highly poisonous chemicals derived from tobacco is ____ and Blood cancer is called _____

12. Soil erosion can be prevented by

a) deforestation b) afforestion c) over growing d) removal of vegetation

PART – B **22 COMPULSARY LIKNACH** (ANY 7) 7 x 2=14

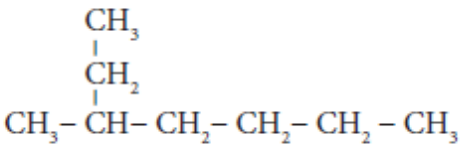
13. Write down the speed of sound waves in different media.

14. Why does an empty vessel produce more sound than a filled one?

15. Explain the reaction

$_1H^2 + _1H^2 \rightarrow {}_2He^4 + Q$ (Energy)

16. Write the test to identify saturated and unsaturated compounds.



17. Write the IUPAC name →

18. What are Okazaki fragments?

19. Why is Archaeopteryx considered to be a connecting link?

20. Expand the following abbreviations 1. IDDM 2. HIV

21. What are the environmental effect caused by sewage?

22. A source and listener are both moving towards each other with a speed v/10 where v is the speed of sound. If the frequency of the note emitted by the source is f, what will be the frequency heard by the listener?

PART-C **33 COMPULSARY LIKNACH** (ANY 7) 7x4=28

23. What are the factors that affect the speed of sound in gases?

24. a) $_{88}$ **Ra^{226}** experiences three **α -** decay. Find the number of neutrons in the daughter element.

b) What is stellar energy?

25. What is called homologous series? Give any three of its characteristics?

26. **A)** Explain the structure of a chromosome. **B**) How is the structure of DNA organised?

27. How does fossilization occur in plants?

28. **A)** Distinguish between somatic gene therapy and germ line gene therapy

B) 'P' is a gene required for the synthesis of vitamin A. It is integrated with genome of 'Q' to produce genetically modified plant 'R'.

i. What is P, Q and R? **ii**. State the importance of 'R' in India.

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

30. What precautions can be taken for preventing heart diseases ?

31. **A)** How is a cancer cell different from a normal cell ?

B) Differentiate between Type-1 and Type-2 diabetes mellitus

32. Enumerate the importance of forest.

33. The molecular formula of an alcohol is $C_4H_{10}O$. The locant number of its –OH group is 2.

(i) Draw its structural formula.

(ii) Give its IUPAC name.

(iii) Is it saturated or unsaturated?

PART - D (ANY 1 FROM EACH) 3x7=21

34 **A)**

a) What do you understand by the term 'ultrasonic vibration'?

b) State three uses of ultrasonic vibrations.

c) Name three animals which can hear ultrasonic vibrations.

B) What will be the frequency sound having 0.20 m as its wavelength, when it travels with a speed of 331 m s–1?

(or)

C) Explain the process of controlled and uncontrolled chain reactions

D) Cell phone towers should be placed far away from the residential area – why?

35

A) differentiate between soap and detergent.

B) Explain the mechanism of cleansing action of soap.

(or)

C) Arrive at, systematically, the IUPAC name of : $CH_3–CH_2–CH_2–OH$.

D) Write down the common table of functional groups and substitute compounds

36

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

B) State the applications of DNA fingerprinting technique.

(or)

C) Changes in lifestyle is a risk factor for occurrence of cardiovascular diseases. Can it be modified ? If yes, suggest measures for prevention.

D) How does rainwater harvesting structures recharge ground water.

ALL THE BEST DEARS

DEDICATION + DETERMINATION ➡ DISTINCTION

D. HIFZUR RAHMAN MSc.,MPhil.,

TGT – SCIENCE