GREEN GARDEN MATRIC.HR.SEC.SCHOOL, PERUNDURAI R.S MODEL QUESTION PAPER- I

Std : X

SCIENCE

Time : 3.00 Hours

Max. Marks: 75

Instruction :

- 1. Check the question paper for fairness of printing. If there is any lack of fairness, inform the Hall supervisor immediately.
- 2. Use Blue (or) Black ink to write and underline and use pencil to draw diagrams. This question paper contains four parts.
- Note :

<u>PART – I</u>

Note : i) Answer all the questions

ii) Choose the most suitable answer and write the code with corresponding answer.

b) conductivity

d) electrical power

- The refractive index of four substances A, B, C and D are 1.31, 1.43, 1.33, 2.4 respectively. The speed of light is maximum in

 a) A
 b) B
 c) C
 d) D

 Kilowatt hour is the unit of
 - a) resistivity
 - c) electrical energy
- 3. The value of universal gas constant
 - a) $3.81 \text{ J} \text{ mol}^{-1} \text{ K}^{-1}$ c) $1.38 \text{ J} \text{ mol}^{-1} \text{ K}^{-1}$ b) $8.03 \text{ J} \text{ mol}^{-1} \text{ K}^{-1}$ d) $8.31 \text{ J} \text{ mol}^{-1} \text{ K}^{-1}$
- 4. Which of the following is a triatomic molecule?

	a) Glucose	b. Helium
	c) Carbon dioxide	d. Hydrogen
5.	The process of coating the surface of metal	with a thin layer of zinc is called
	a) painting	b) thinning
	c) galvanization	d) electroplating
6.	Venilla beans solution is made up of	and
	a) Methanol + H_2O	b) Ethanol + H_2O
	c) Methanol + HCl	b) Ethanol + HCl
7.	Which is formed during anaerobic respiration	on?
	a) Carbohydrate	b) Ethyl alcohol
	b) Acetyl CoA	d) Pyruvate

12 x *1* = *12*

8.	Avena coleoptile test was conducted by						
	a) Darwin	b) N. Smit					
	c) Paal	d) F.W. Went					
9.	is a gaseous plant hormone.						
	a) Auxin	b) Ethylene					
	c) Cytokinin	d) Abscisic acid					
10	In leeches sperms are stored in						
	a) Epididymis	b) Vas deferens					
	c) Testis	d) Ejaculatory duct					
11.	acts as relay center.						
	a) Pons	b) Hypothalamus					
	c) Cerebrum	d) Cerebellum					
12	AIDS affects the system						
	a) Circulatory	b) Nervous					
	c) Immune	d) Digestive					
	<u>PART – II</u>						
	Note : Answer any seven questions. [Q. No. 22 is compulsory] $7 \ge 14$						
13	State snell's law.						
14	Define electric potential and potential differ	rence.					
15	'A' is a silvery white metal. 'A' combines w	with O_2 to form B at 800°C, the alloy of 'A' is used in					
	making the aircraft parts. Identify A and B						
16	Assertion : An uncleaned copper vessel is a	covered with greenish layer.					
	Reason : copper is not attacked by alkali						
	i) A and R are correct, R explains the A						
	ii) A is correct, R is wrong.						
	iii) A is wrong, R is correct.						
	iv) A and R are correct, R doesn't explains	А.					
17.	17. What is aqueous and non-aqueous solution? Give an example.						
18	What is respiratory quotient?						

19. Draw and label the structure of mitochondria

20. State the Biogenetic law.

- 21. What is the signification of colostrums?
- 22. Identify A, B, C and D from the following nuclear reactions.

 $i)_{13}Al^{27} + A \longrightarrow_{15}P^{30} + B$ $ii)_{12}Mg^{24} + B \longrightarrow_{11}Na^{24} + C$ $iii)_{92}U^{238} + B \longrightarrow_{93}Np^{239} + D$

<u> PART – III</u>

Note : Answer any seven questions. [Q. No. 32 is compulsory]

- 23. Describe rocket propulsion.
- 24. Explain the rules for obtaining images formed by a convex lens with the help of ray diagram.
- 25. a) What are the factors that affect the speed of sound in gases?
 - **b)** Write a short note on gears.
- 26. State and write the applications of Avogadro's law.
- 27. *a*) How is zinc blende concentrated? Explain it with a neat diagram

b) Name the simplest ketone and give its structural formula

- 28. What is transpiration? Give the importance of transpiration.
- 29. With a neat labelled diagram explain the techniques involved in gene cloning.
- 30. Describe the types of neuron on the basis of their structure.
- 31. Write the functions of lymphatic system.
- 32. *a*) Calculate the volume occupied by 14g of nitrogen gas.
 - **b)** Explain the Bessemerisation in copper.

<u>PART – IV</u>

Note : *i*) *Answer all the questions.*

ii) Each question carries seven marks.

iii) Draw diagrams wherever necessary.

 $3 \ge 7 = 21$

33. a) i) Deduce the equation of a force using Newton's second law of motion.

ii) List any five properties of light.

Or

b) What is a nuclear reactor? Explain its essential parts with their functions.

34. a) Derive the relationship between Relative molecular mass and Vapour density.

Or

b) An organic compound 'A' is widely used as a preservative and has the molecular formula

 $C_2H_4O_2$. This compound reacts with ethanol to form a sweet smelling compound 'B'.

(i) Identify the compound 'A'.

- (ii) Write the chemical equation for its reaction with ethanol to form compound 'B'.
- (iii) Name the process.
- c) Explain the types of double displacement reactions.

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

Or

b) Write a note on hormones of posterior pituitary with examples.

c) Differentiate malignant and non – malignant tumour.

1.	2.	3.	4.	5.	6.	7.
а	с	d	с	с	b	b
8.	9.	10.	11.	12.	9 '9 E E E E E E E E E E E E E E E E E E	400 400 400 400 400 400 400 400 400 400
d	b	a	a	с		

 $7 \ge 4 = 28$

GREEN GARDEN MATRIC.HR.SEC.SCHOOL, PERUNDURAI R.S MODEL QUESTION PAPER-II

Std : X

Max. Marks: 75

SCIENCE

Time : 3.00 Hours

Instruction :

- 1. Check the question paper for fairness of printing. If there is any lack of fairness, inform the Hall supervisor immediately.
- 2. Use Blue (or) Black ink to write and underline and use pencil to draw diagrams.

Note : This question paper contains four parts.

<u>PART – I</u>

Note : i) Answer all the questions

- ii) Choose the most suitable answer and write the code with corresponding answer.
- 1. If the Earth shrinks to 50% of its real radius its mass remaining the same, the weight of a body on the Earth will
- a) Decrease by 50% b) Increase by 50% c) Decrease by 25% d) Increase by 300% 2. If a sound wave travels with a frequency of 1.25×10^4 Hz at 344 ms⁻¹, the wavelength will be b) 275.2 m a) 27.52 m c) 0.02752 m d) 2.752 m 3. In the Given diagram, the possible direction of heat energy transformation is 303 K b) $A \rightarrow B, A \rightarrow C, B \rightarrow C$ a) $A \leftarrow B, A \leftarrow C, B \leftarrow C$ 305 K c) $A \rightarrow B, A \leftarrow C, B \rightarrow C$ d) $A \leftarrow B, A \rightarrow C, B \leftarrow C$ 4. Rectified spirit is an aqueous solution which contains about ______ of ethanol b) 75.5 % a) 95.5 % d) 45.5 % c) 55.5 % 5. In the reaction $Zn + 2HCl \rightarrow ZnCl_2 + H_2 \uparrow$ is an example of a) Combination Reaction b) Double Displacement Reaction
 - c) Displacement Reaction d) Decomposition Reaction
- 6. Which of the following is hygroscopic in nature?
 - a) Ferric chlorideb) Copper sulphate penta hydratec) Silica geld) None of the above

12 x *1* = *12*

7.	The endarch condition is the characteristic feature of			
	a) Root	b) Stem		
	c) Leaves	d) Flower		
8.	Water which is absorbed by roots is transpo	rted to aerial parts of the plant through		
	a) Cortex	b) Epidermis		
	c) Phloem	d) Xylem		
9.	How many parts are there in the scratch edit	tor?		
	a) 4	b) 2		
	c) 3	d) 1		
10	. Node of Ranvier is found in			
	a) Muscles	b) Axons		
	c) Dendrites	d) Cyton		
11	or sediments fill the hollow	depression and forms a cast.		
	a) Rocks	b) Sand		
	c) Soil	d) Minerals		
12	from anterior Pituitary stimul	ates milk secretion.		
	a) Oxytocin	b) Prolactin		
	c) Progesterone	d) Oestrogen		

<u>PART – II</u>

Note : Answer any seven questions. [Q. No. 22 is compulsory] $7 \ge 2 = 14$

- 13. Write the applications of convex lenses.
- 14. Define one roentgen.
- 15. How is ethanoic acid prepared from ethanol? Give the chemical equation.
- 16. What is rust? Give the equation for formation of rust.
- 17. 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.
- 18. What are okazaki fragments?

19. Match the following:

- 1. Autosomes Trisomy 21
- 2. Diploid 9:3:3:1
- 3. Allosome 22 pairs of chromosomes
- 4. Down's syndrome 2n
- 5. Dihybrid ratio 23rd pair of chromosome
- 20. What are the structures involved in the protection of brain?
- 21. Define Ethnobotany.

22. The resistance of a wire of length 10 m is 2 ohm. If the area of cross section of the wire is $2 \times 10^{-7} \text{ m}^2$, determine its

(i) Resistivity (ii) Conductance (iii) Conductivity

<u>PART – III</u>

Note : Answer any seven questions. [Q. No. 32 is compulsory] 7 x 4 = 28

- 23. Explain the experiment of measuring the real and apparent expansion of a liquid with a neat diagram.
- 24. *a*) Draw a ray diagram to show the image formed by a convex lens with the object placed between F and 2F.

b) List the merits of LED bulb.

- 25. *a*) What is meant by electric current?
 - **b)** Name and define its unit .
 - c) Which instrument is used to measure the electric current? How should it be connected in a circuit?
- 26. Write the methods of preventing corrosion.
- 27. a) In what way hygroscopic substances differ from deliquescent substances.

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

- 28. Discuss the importance of biotechnology in the field of medicine.
- 29. How will you prevent soil erosion?
- 30. Differentiate between Type-1 and Type-2 diabetes mellitus
- 31. Explain chemical evolution of life.
- 32. a) Write the IUPAC name for the following

i) $CH_3 - C \equiv C - CH_3$

 $ii) \quad \mathrm{Cl} - \mathrm{CH}_2 - \mathrm{CH}_2 - \mathrm{CH}_3$

iii) $CH_3 - CH_2 - CH_2 - CHO$

iv) CH₃ - CH₂ - CH - CH₂ - CH₂ - COOH CH₂ CH₃

b) Calculate the pH of a solution in which the concentration of the hydrogen ions is 1.0×10^{-8} mol litre⁻¹.

PART – IV

Note : i) Answer all the questions.

ii) Each question carries seven marks.

iii) Draw diagrams wherever necessary.

3 x 7 = 21

33. *a) i)* Differentiate the eye defects: myopia and hypermetropia.

ii) Give the applications of universal law of gravitation.

Or

b) With the help of a circuit diagram derive the formula for the resultant resistance of three

resistances connected: *i*) in series

ii) in parallel

34. *a*) Write the salient features of modern atomic theory.

b) Classify the following compounds based on the pattern of carbon chain and give their structural formula *i*) benzene *ii*) Furan

Or

c) What is called homologous series? Give any four of its characteristics.

d) What is ionic product of water?

e) State two conditions necessary for rusting of iron.

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

Or

b) Describe the structure of spinal cord.

c) How can we prevent child sexual abuse?

1.	2.	3.	4.	5.	6.	7.
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d	с	d	d	b		

GREEN GARDEN MATRIC.HR.SEC.SCHOOL, PERUNDURAI R.S MODEL QUESTION PAPER-III

Std : X

Max. Marks: 75

SCIENCE

Time : 3.00 Hours

Instruction :

- 1. Check the question paper for fairness of printing. If there is any lack of fairness, inform the Hall supervisor immediately.
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Note :

PART – I

Note: i) Answer all the questions

ii) Choose the most suitable answer and write the code with corresponding answer.

1. Proton - Proton chain reaction is an example of ______

- a) Nuclear fission b) α decay
- c) Nuclear fusion d) β decay

2. The mass of a body is measured on planet Earth as M kg. When it is taken to a planet of radius half that of the Earth then its value will be kg

b) 2M

d) Mechanical energy

b) 1- Butene

d) Pentene

- a) 4 M
- c) $\frac{M}{4}$ d) M
- 3. The eye defect 'presbyopia' can be corrected by
- a) Convex lens
 b) Concave lens
 c) Convex mirror
 d) Bi focal lenses
 4. Which of the following is used for making pressure cookers?
 a) Brass
 b) Magnalium

c) Duralumind) Bronze5. Photolysis is a decomposition reaction caused by

a) Heat b) Electricity

c) Light

6. The IUPAC name of $CH_3 - CH = CH - CH_3$

a) Propene

c) 2- Butene

 $12 \ge 12 = 12$

7. To increase the sugar production in sugarcanes they are sprayed with					
a) Auxin	b) Cytokinin				
c) Gibberellins	d) Ethylene				
8. Syngamy results in the formation	on of				
a) Zoospores	b) Conidia				
c) Zygote	d) Chlamydospores				
9 is a hybrid of wh	eat and rye.				
a) Triticale	b) Raphano brassica				
c) Bananas d) Water methos					
10. The neurons which carries impulse from the central nervous system to the muscle fibre.					
a) Afferent neurons	b) Association neuron				
c) Efferent neuron	d) Unipolar neuron				
11. PNS is formed of	pairs of spinal nerves in rabbit.				
a) 12	b) 31				
c) 37	d) 21				
12. Where does alcohol effect immediately after drinking?					
a) Eyes	b) Auditory region				
c) Liver	d) Central nervous system				

<u>PART – II</u>

Note : Answer any seven questions. [Q. No. 22 is compulsory]	$7 \ge 2 = 14$
13. State Newton's second law.	
14. State the law of volume.	

15. Define atomicity.

16. Give a chemical test to identify saturated and unsaturated compounds.

17. 3.5 litres of ethanol is present in 15 litres of aqueous solution of ethanol. Calculate the volume percent of ethanol.

18. Fill in the blanks:

- *a)* During anaerobic respiration ______ is converted into ethanol or lactic acid.
- b) An inheritable change in the amount or the structure of a gene or a chromosome is called _____
- 19. What are synthetic auxin? Give example.
- 20. What is Myxoedema?
- 21. Why is Archaeopteryx considered to be a connecting link?
- 22. A person with myopia can see objects placed at a distance of 4m. If he wants to see objects at a distance of 20m, what should be the focal length and power of the concave lens he must wear?

PART	– III	

Note : Answer any seven questions. [Q. No. 32 is compulsory]

- 23. *a*) What is an echo?
 - b) State two conditions necessary for hearing and echo.
 - c) What are the medical applications of echo?
- 24. a) State Soddy and Fajan's displacement law.
 - b) Compare any four properties of alpha, beta and gamma radiations.

25. *a*)Match the following:

i) Fuel	-	lead
ii) Moderator	-	heavy water
iii) Control rods	-	cadmium rods
iv) Shield	-	uranium

- b) Write the characteristic features of heat energy transfer.
- 26. Differentiate soap and detergent.
- 27. What is chemical equilibrium? Write the characteristics of chemical equilibrium.
- 28. Write the difference between Aerobic and Anaerobic respiration.
- 29. A pure tall plant (TT) is crossed with pure dwarf plant (tt), what would be the F₁ and F₂ generations? Explain.
- 30. What is diaphragm?
- 31. What is the significance of caecum in rabbit?
- 32. *a*) Find the amount of urea which is to be dissolved in water to get 500g of 10% w/w aqueous solution.
 - b) Calculate the number of water molecule in one drop of water which weighs 0.18g.

PART – IV

Note : i) Answer all the questions. ii) Each question carries seven marks. iii) Draw diagrams wherever necessary.

3 x 7 = 21

 $7 \ge 4 = 28$

- 33. *a*) What is meant by reflection of sound? Explain:
 - *i*) Reflection at the boundary of a rarer medium.
 - *ii)* Reflection at the boundary of denser medium.
 - iii) Reflection at curved surfaces.

(**O**r)

b) Derive the ideal gas equation.

34. *a) i)* Explain the smelting process of Iron.

ii) What is anode mud?

(**O**r)

- b) '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 reactions.
- *c)* Define rate of a reaction.
- *d*) Write the differences between reversible and irreversible reactions.

35. a) What are the sources of solid wastes? How are solid wastes managed?

(Or)

b) What is a dental formula for rabbit?

c) Write a note on smoking hazards and effects of Tobacco.

1.	2.	3.	4.	5.	6.	7.
с	d	d	b) с	с	с
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с	a	c	c	d		