

FTJ

QUARTERLY EXAMINATION - 2023

CLASS : 10

SCIENCE

TIME : 2.30 hrs

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MARKS : 75

PART - I

I Note : i) Answer all the questions. ii) Choose the most appropriate answer from the alternatives.

12 X 1 = 12

- Impulse is equal to
 - rate of change of momentum
 - rate of force and time
 - rate of change of mass
 - change of momentum
- Where should an object be placed so that a real and inverted image of same size is obtained by a convex lens
 - f
 - 2f
 - infinity
 - between f and 2f
- One horse power is equal to
 - 646 watts
 - 746 watts
 - 846 watts
 - 946 watts
- Which of the following is triatomic molecule?
 - Glucose
 - Helium
 - Carbon di oxide
 - Hydrogen
- Chemical formula of rust is
 - $\text{FeO} \cdot \text{X H}_2\text{O}$
 - $\text{FeO}_4 \cdot \text{X H}_2\text{O}$
 - $\text{Fe}_2\text{O}_3 \cdot \text{X H}_2\text{O}$
 - FeO
- Identify the non - aqueous solution
 - Sodium chloride in water
 - Glucose in water
 - Copper sulphate in H_2O
 - Sulphur in carbon - di - sulphide
- Which is formed during anaerobic respiration
 - Carbohydrate
 - Ethyl alcohol
 - Acetyl COA
 - Pyruvate
- Four chambered heart is present in
 - Fishes
 - Frog
 - Snake
 - Crocodile
- The longest cell in our body
 - Nephron
 - Neuron
 - Egg
 - Cyton
- is a gaseous hormone involved in abscission of organs and acceleration of fruit ripening
 - Auxin
 - Ethylene
 - Absciscic acid
 - Gibberellin
- Male gamets in angiosperms are formed by the division of
 - generative cell
 - vegetative cell
 - microspore mother cell
 - microspore
- Okasagi fragments are joined together by
 - Helicare
 - DNA polymerase
 - RNA primer
 - DNA ligase

PART - II

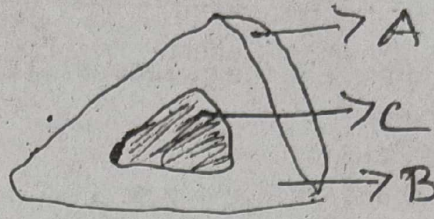
II Note : Answer any 7 of following. (Q.NO.22 is compulsory)

7 X 2 = 14

- Classify the types of force based on their application.
- Why does the sky appear in blue colour?
- Distinguish between ideal gases and real gases.
- Match the following.

1. Electric current	-	a) Joule
2. Electric power	-	b) Ohm meter
3. Electric energy	-	c) Watt
4. Specific resistance	-	d) Ampere
- State Ohm's law.

18. Which instrument is used to measure the electric current? How should it be connected in a circuit?
19. Differentiate atoms and molecules.
20. State Henry's law.
21. What is Respiratory quotient?
22. Draw the diagram and label the parts.



PART - III

III Note : Answer any 7 of the following questions. (Q.No.32 is compulsory) 7 X 4 = 28

23. Describe Rocket Propulsion.
24. List any five properties of light.
25. **State True or False. If false correct the statement.**
 - a) 1. Thermal energy always flows from a system at lower temperature to a system, at higher temperature.
 2. The SI unit of potential difference is Watt.
26.
 - a) Define Atomicity.
 - b) What is Avagadro number? State any three application of Avagadro's law.
27. How does locomotion takes place in leech?
28. Enumerate the functions of blood.
29.
 - a) What is photosynthesis and where in a cell it occurs?
 - b) is the ATP factory of the cell.
30. Differentiate aerobic respiration and an aerobic respiration?
31.
 - a) Why are thyroid hormones referred as personality hormone?
 - b) Define triple fusion.
32. A solution is prepared by dissolving 45 g of sugar in 180 g of water. Calculate the mass percentage of solute.

PART - IV

IV Answer all the questions.

3 X 7 = 21

33.
 - a) i) State and prove the law of conservation of linear momentum.
 - ii) State Snell's law.

(OR)

 - b) i) State Avagadro's law.
 - ii) Derive the ideal gas equation.
34.
 - a) i) Define Relative atomic mass.
 - ii) Give the salient features of "Modern Atomic Theory".

(OR)

 - b) i) In what way hygroscopic substances differ from deliquescent substances.
 - ii) What is rust? Give the equation for formation of rust?.
35.
 - a) i) Write the events involved in the sexual reproduction of a flowering plant.
 - ii) Discuss the first event and write the types.
 - iii) What is bolting. **(OR)**
 - b) i) Explain the structure of a neuron with a neat labelled diagram.
 - ii) What are Okazaki fragments?