VGR COACHING CENTER

CLASS-10TH SCIENCE - 1,2,7,12,14 MARK-75

PART-1

CHOOSE THE CORRECT ANSWER 14×1=14

1. One kilogram force equals to
   a) 9.8 dyne b) 9.8 × 10^4 N c) 98 × 10^4 dyne d) 980 dyne
2. In which of the following sport the turning of effect of force used
   a) swimming b) tennis c) cycling d) hockey
3. 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%
4. Magnification of a convex lens is
   a) Positive b) negative c) either positive or negative d) zero
5. A convex lens forms a real, diminished point sized image at focus. Then the position of the object is at
   a) focus b) infinity c) at 2f d) between f and 2f
6. The eye defect 'presbyopia' can be corrected by
   a) convex lens b) concave lens c) convex mirror d) Bi focal lenses
7. Mass of 1 mole of Nitrogen atom is
   a) 28 amu b. 14 amu c. 28 g d. 14 g
8. The gram molecular mass of oxygen molecule is
   a. 16 g b. 18 g c. 32 g d. 17 g
9. The endarch condition is the characteristic feature of
   a) root b) stem c) leaves d) flower
10. Which is formed during anaerobic respiration
    a) Carbohydrate b) Ethyl alcohol b) Acetyl CoA d) Pyruvate
11. The wall of human heart is made of
    a) Endocardium b) Epicardium c) Myocardium d) All of the above
12. 'Heart of heart' is called
    a) SA node b) AV node c) Purkinje fibres d) Bundle of His

PART-II

WRITE ANY SEVEN QUESTION Q.NO 22 IS COMPULSORY 7×2=14

13. Match the following

Column I	Column II
a. Newton's I law -	propulsion of a rocket
b. Newton's II law -	Stable equilibrium of a body
c. Newton's III law -	Law of force
d. Law of conservation of Linear momentum -	Flying nature of bird

14. Why a spanner with a long handle is preferred to tighten screws in heavy vehicles?
15. State Snell's law.
16. Write the different types of isotopes of oxygen and its percentage abundance
17. What is photosynthesis and where in a cell does it occur?
18. Match the following

1. 8 g of O2	-	4 moles
2. 4 g of H2	-	0.25 moles
3. 52 g of He	-	2 moles
4. 112 g of N2		- 0.5 moles
-		13 moles

19. Why are traffic signals red in colour?
20. What is respiratory quotient?
21. What is the importance of valves in the heart?
22. Calculate the number of moles in

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

PART-III

WRITE ANY SEVEN QUESTION Q.NO 32 IS COMPULSORY 7×4=28

23. What are the types of inertia? Give an example for each type.
24. a. State the universal law of gravitation and derive its mathematical expression (2)

    b. Give the applications of universal law gravitation (2)

25. List any five properties of light

26. Explain the rules for obtaining images formed by a convex lens with the help of ray diagram.

27. Give the salient features of "Modern atomic theory

28. . a. Differentiate convex lens and concave lens. (2)

b. Why does the sky appear in blue colour? (2)

29. Differentiate the following

i. Monocot root and Dicot root (3)

ii. Draw and label the structure of oxysomes (1)

30. What is transpiration? Give the importance of transpiration.

31. Enumerate the functions of blood.

32. How many grams are there in the following?

I. 2 moles of hydrogen molecule, H_2

II. 3 moles of chlorine molecule, Cl_2

III. 5 moles of sulphur molecule, S_8

IV. 4 moles of phosphorous molecule, P_4

PART-IV

ANSWER ALL QUESTION 3×7=21

33. a. State and prove the law of conservation of linear momentum (5)

b. Differentiate mass and weight (2)

OR

a. Differentiate the eye defects: Myopia and Hypermetropia (3)

b. An object is placed at a distance 20cm from a convex lens of focal length 10cm. find the image distance and nature of the image (2)

c. The ratio of masses of two planets is 2:3 and the ratio of their radii is 4:7 Find the ratio of their accelerations due to gravity . (2)

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34. a. Derive the relationship between Relative molecular mass and Vapour density. (5)

b. Differentiate atom and molecules (2)

OR

a. Calculate the % of each element in calcium carbonate. (Atomic mass: C-12, O-16, Ca -40) (2)

b. **Define: Atomicity (1)**

c. **Give any two examples for heterodiatomic (2)**

d. **Find the percentage of nitrogen in ammonia.(2)**

35. a. Describe and name three stages of cellular respiration that aerobic organisms use to

obtain energy from glucose. (5)

b. **Differentiate aerobic and anaerobic resipiration (2)**

OR

a. **What is cohesion? (1)**

b. **Write a short note on mesophyll. (2)**

c. **Why is the circulation in man referred to as double circulation? . (2)**

d. **What are heart sounds? How are they produced? . (2)**

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