PERAMBALUR (DT)

K COMMON FIRST MID - TERM TEST - 2019

STANDARD - X

SCIENCE

Time : 1.30 hours *Marks: 50*

I. Choose the correct answer : **10×1=10**

1. A and B are two objects with masses 100kg and 75kg respectively, then _____.
   a) both will have same inertia b) B will have more inertia
   c) A will have more inertia d) both will have less inertia
2. Power of a lens is -4D, then its focal length is
   a) 4m b) -40m c) -0.25m d) -2.5m
3. Which of the following is a triatomic molecule?
   a) Hydrogen b) Helium c) Water d) Carbon
4. A group of atoms chemically bonded together is a (an)
   a) Atom b) Salt c) molecule d) element
5. The number of groups and periods in the periodic table are _____.
   a) 18, 7 b) 7, 18 c) 7, 17 d) 6, 16
6. The acid which makes iron passive is
   a) Conc. HCl b) Conc.H_2SO_4 c) Conc.HNO_3 d) Conc.HF
7. Oxygen is produced at what point during photosysthesis?
   a) When ATP is convered to ADP b) When CO_2 is fixed
   c) When H_2O is splitted d) All of these
8. Dental formula of rabbit is _____.
   a) $\frac{2033}{1023}$ b) $\frac{2003}{1003}$ c) $\frac{2023}{1220}$ d) $\frac{2030}{1020}$
9. The body of leech has
   a) 23 segments b) 33 segments c) 38 segments d) 30 segments
10. Down's syndrome is a case of _____.
    a) Euploidy b) Deletion c) Translocation d) Aueploidy

II. Answer any 10 questions. [Q.No.17 Compulsory]: **10×2=20**

11. State the principle of moments.
12. What is meant by weight lessness?
13. State Rayleigh's law of Scattering.
14. Write any 2 applications of Concave lenses.
15. *Assertion and reasoning type:*
    Assertion : Myopia is due to the increase in the Converging power of eye lens.
    Reason : Myopia can be corrected with the help of concave lens.
    a) If both assertion and reason are true and reason is the correct explanation of assertion.
    b) If both assertion and reason are true but reason is not the correct explanation of assertion.
    c) Assertion is true but reason is false.
    d) Assertion is false but reason is true.
16. *True or False : [If false give the correct statement]*
    a) Molar mass of CO_2 is 42g b) Noble gases are Diatomic.
17. Calculate the number of molecules in 36gm of H_2O?
18. State two conditions necessary for rusting of iron?

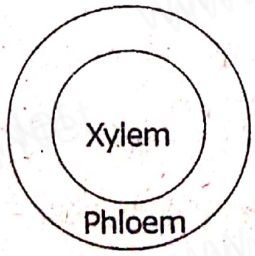
19. *Match the following :*

Group number	Family
13	Noble gases
2	Chalcogen family
14	Carbon family
16	Boron family
18	Alkaline earth metals

20. *Answer in a Sentence :*
    a) What is the Common step in aerobic and anaerobic pathway?
    b) Name the phenomenon by which carbohydrates are oxidized to release ethylalcohol.
21. Draw and label the structure of Oxysomes.
22. *Fill in the blanks:*
    a) Excretory organ of leech is _____.
    b) Segments of leech is _____.
23. What are Okazaki fragments?
24. Define Chargaff rule.

4×5=20

III. Answer in detail:

25. Define inertia.
    What are the types of inertia? give an example for each type. **(OR)**
26. Explain the Construction and working of a "Compound Microscope".
27. *Solve the following problems:*
    a) Calculate the % of each element in Calcium Carbonate.
    [Atomic mass C - 12 , O - 16 , Ca - 40]
    b) Calculate the % relative abundance of B-10 and B-11, if its average atomic mass is 10.804 amu. **(OR)**
28. Metal A belongs to period 3 and group 13, A in red hot condition reacts with steam to form B. A with strong alkali [NaOH] forms C. Find A, B and C with reactions.
29. *Differentiate the following :*
    a) Monocot Leaf and Dicotleaf.
    b) Aerobic and Anaerobic respiration. **(OR)**
30. 

    a) What do you infer from this diagram? Identify it?
    b) Classify the type.
    c) Give an example.
31. Explain the male reproductive system of rabbit with a labelled diagram. **(OR)**
32. How is the structure of DNA organized? What is the biological Significance of DNA?

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common First Revision Mid Term

Perambalur (Dt)

X^th Standard Answer key.

I Choose the best answer.

(1) (c) A will have more Inertia.

(2) c) -0.25m (3) c) water 4) c) molecule (5) b) 7, 18

(6) (c) conc. HNO_3 (7) (d) All of these 8) (a) $\frac{2033}{1023}$

(9) (b) 33 segments 10) (d) Aneuploidy.

II 2 mark.

11) Principle of moments :-

At equilibrium, the algebraic sum of the moments of all the individuals forces about any point is equal to zero.

12) weightlessness :-

you actually feel as if you are falling freely without having any weight. This due to the phenomenon of weightlessness.

13) Rayleigh's law of Scattering :-

The amount of scattering of light is inversely proportional to the fourth power of its wavelength. $S \propto 1/\lambda^4$

14) Application of Concave Lens :-

(i) It is used as eye lens of Galilean Telescope

(ii) It is used in wide angle spy hole in door

(iii) It is used to correct the defect of vision called myopia.

15) Ans:
(a) Both assertion and reason are true and reason is the correct explain of assertion.

16) (i) False. Molar mass of CO_2 44g
(ii) False. Noble gases are monoatomic.

18) (i) Dry corrosion: The corrosive action in the absence of moisture is called dry corrosion
(ii) Wet Corrosion:- The corrosive action in the pressure of moisture is called wet corrosion.

17) (a) Number of molecules $= \frac{6.023\times10^{23} \times \text{mass of water}}{\text{GMM}}$
$= \frac{6.023\times10^{23}\times 36}{18} =$

19) Group Number Family.
13 - Boran Family
2 - Alkaline earth metals
14 - Carbon family
16 - Chalcogen family
18 - Noble gas.

20) (a) Glycolysis
(b) Anaerobic Respiration
It takes place without O_2
Glucose (or) Carbohydrate.

22) (i) Nephridia
(ii) 33 Segments.

23) Okazaki fragments:-
The short segments of DNA are called Okazaki fragments. The fragments are joined together by the enzyme DNA ligase.

24) Chargaff rule:-
Erwin Chargaff states that in DNA, the proportion of adenine is always equal to that of thymine and the proportion of guanine always equal to that of cytosine

III 5mark

25) Inertia - 1mark
Explain types - 3mark
Examples - 1mark

26) Define Compound } - 1mark
microscope
working and Construction - 1mark

27) (i) Formula: Atomic mass / molecular mass
Ca => 40/100 × 100 = 40%
C -> 12/100 × 100 = 12%
O -> 48/100 × 100 = 48%

(ii) Average atomic mass $= \frac{a_1x_1 + a_2x_2}{a_1 + a_2}$
$10.804 \text{ amu} = \frac{a_1\times10 + a_2\times11}{a_1 + a_2}$
$10.840 \text{ amu} = \frac{(100-a_2)\times10 + a_2\times11}{100}$
$1080.4 = \frac{1000 - 10a_2 + 11a_2}{100}$ $(\because a_1+a_2=100)$
$10,804 = 1000 + a_2$
$a_2 = -1000 + 1080.4 = 80.4\%$
$a_1 + a_2 = 100$
$a_1 + 80.4 = 100$
$a_1 = 100 - 80.4 = 19.6\%$
B-10 = 19.6%
B-11 = 80.4%

28) A is Aluminium.
$2Al + 3H_2O \rightarrow Al_2O_3 + 3H_2$
B - Aluminium oxide
$2Al + \text{conc}NaOH + 2H_2O \rightarrow NaAlO_2 + 3H_2\uparrow$
C - Sodium meta aluminate

29) Differentiate, monocot leaf and dicot leaf - 2½ mark
Aerobic and anaerobic respiration - 2½ mark

30) (a) Concentric and Amphicribral } 1mark
(b) Classify types: 3mark
(c) Examples: 1mark

31) Male reproductive system
32) of Rabbit :-
Diagram with labelled parts } 1½ mark
Explain - 3½ mark

32) Structure of DNA : 3mark
significance of DNA } - 2mark

E.DEVADINESH
MSc, BED, CLP.
PG ASSISTANT IN PHYSICS
GREENPARK MATRIC HR. SEC. SCHOOL
PERAMBALUR (Dt)
CELL: 9524292942
Email: devadineshphy@gmail.com.