

KOMARASAMY GOUNDER MAT.HR.SEC.SCHOOL – KURUMANDUR**PRE – QUARTERLY EXAMINATION – SEP – 2023****X – STANDARD****TIME : 3 HOURS****SCIENCE****MARKS : 75****PART – A****I. Choose the correct answer :****12 X 1 = 12**

1. The number of components in binary solution is
a) 2 b) 3 c) 4 d) 5
2. SI unit of resistance is
a) Mho b) Joule c) Ohm d) Ohm meter
3. Newton's III law is applicable
a) For a body is at rest b) For a body is motion
c) Both a & b d) Only for bodies with equal masses
4. In a myopic eye , the image of the object is formed
a) Behind the retina b) On the retina
c) In front of the retina d) On the blind spot
5. The value of Boltzmann constant.....
a) $3.81 JK^{-1}$ b) $8.03 mol^{-1}k^{-1}$ c) $1.38 JK^{-1}$ d) $8.31 mol^{-1}k^{-1}$
6. Which of the following is a triatomic molecule ?
a) Glucose b) Helium c) Carbon dioxide d) Hydrogen
7. Estrogen is secreted by
a) Anterior pituitary b) Pituitary gland c) Thyroid gland d) Adrenal gland
8. Bipolar neurons are found in
a) Retina of eye b) Cerebral cortex c) Embryo d) Respiratory epithelium
9. Okazaki fragments are joined together by
a) Helicase b) DNA Polymerase c) RNA Primer d) DNA ligase
10. Closed circulatory system was discovered by
a) Bundle of His b) Steini c) William Harvey d) Decastello
11. Which one is referred as "Master gland" ?
a) Pineal gland b) Pituitary gland c) Thyroid gland d) Adrenal gland
12. Theunits form backbone of the DNA.
a) 5 Carbon sugar b) Phosphate c) Nitrogenous bases d) Sugar phosphate

PART – B**II. Answer any '7' questions .Question no.22 is compulsory.****7 X 2 = 14**

13. Why is the sinoatrial node called the pacemaker of heart?
14. Name the three basic tissues system in flowering plants.

15. What is Bolting ? How can it be induced artificially ?
16. Who discovered Rh factor ? Why was it named so ?
17. Match the following :
- | | | |
|-----------------|---|--|
| a) Parturition | - | 1) Duration between pregnancy and birth |
| b) Gestation | - | 2) Attachment of zygote to endometrium |
| c) Ovulation | - | 3) Delivery of baby from uterus |
| d) Implantation | - | 4) Release of egg from Graffian follicle |
18. Why is tungsten metal used in bulbs , but not in fuse wires ?
19. Define - Atomicity.
20. Draw a ray diagram to show the image formed by a convex lens when the object is placed between F and 2F.
21. State two conditions necessary for rusting of iron.
22. Calculate the resistance of a conductor through which a current of 2A passes , When the potential difference between its ends is 30V.

PART - C

III. Answer any seven in the following : Question no.'32' is compulsory. 7 x 4 = 28

23. Draw the structure of Dicot leaf and label the parts.
24. Write about Reason for Mendel success.
25. List out the parasitic adaptations in leech.
26. Explain the structure of sperm with neat diagram.
27. i) What do you understand by the term phenotype and genotype?
ii) What are the type of nervous system found in human?
28. a) Calculate number of moles in 46g of Na.
b) What is mass number?
29. In what way hygroscopic substances differ from deliquescent substances.
30. a) Define - alloys ii) What are the alloys of copper and write its uses ?
31. List out any four properties of Aluminum.
32. Calcium carbonate is decomposed on heating in the following reaction
- $$\text{CaCO}_3 \rightarrow \text{CaO} + \text{CO}_2$$
- i) How many moles of Calcium carbonate are involved in this reaction ?
ii) Calculate the gram molecules mass calcium carbonate involved in this reaction.
iii) How many moles of CO_2 are there in this equation ?

PART - D

IV. Answer all the questions . Each questions carries seven marks. Draw diagram wherever necessary . 3 x 7 = 21

33. What are the types of Inertia ? Give an example for each type.

- a) What are the advantages of LED TV over the normal TV.
- b) List the merits of LED bulb.

OR

- a) State the universal law of gravitation and derive its mathematical expression.
 - b) State Newton's third law of motion with example.
34. Write a notes on various factors affecting solubility.

Or

- i) 3.5 litres of ethanol is present in 15 litres of aqueous solutions of ethanol. Calculate volume percent of ethanol solution.
 - ii) State Henry 's law in effect of pressure in solubility.
 - iii) The aquatic animals live in more in cold region. Why ?
36. i) Enumerate the functions of Blood
- ii) Why is the colour of blood is red?

Or

- i) Why thyroid hormones refered as personality hormones ?
- ii) What are the phases of menstrual cycle ? Indicate the changes in the ovary and uterus.