

# HALF YEARLY EXAMINATION - 2022

STD - X

SCIENCE

MARKS : 75

TIME : 3.00 Hrs

## PART - I

- I. Choose the correct answers : 12 x 1 = 12
- 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 value will be ..... kg a)  $4M$  b)  $2M$  c)  $M/4$  d)  $M$
  - One unit of electric energy is equal to  
a) 1000 watt hour      b) 100 watt hour      c) 10 watt hour      d) all the above
  - ..... aprons are used to protect us from gamma radiation  
a) Lead oxide      b) Iron      c) Lead      d) Aluminium
  - Which of the following represents 1 amu?  
a) Mass of a C-12 atom      b) Mass of a hydrogen atom  
c) 1/12th of the mass of a c-12 atom      d) Mass of O-16 atom
  - ..... is an important metal to form amalgam a) Ag b) Hg c) Mg d) Al
  - Which of the following are used as ananethetics?  
a) Carboxylic acids      b) Ethers      c) Esters      d) Aldehydes
  - Carparian strips are present in the ..... of the root.  
a) Cortese      b) pith      c) pericycle      d) endodermis
  - A patient with blood group 'O' was injured in an accident and has blood loss. Which group of blood should be used by doctor for transfusion?  
a) 'O' group      b) 'AB' group      c) 'A' or 'B' group      d) All blood group
  - The hormone which has positive effect on opical dominance is  
a) Cytokinin      b) Auxin      c) Gibberellin      d) Ethylene
  - Which method of crop improvement can be practised by a farmer if he is inexperienced?  
a) clonal selection      b) mass selection      c) pureline selection      d) hybridization
  - An inexhaustible resources is / are  
a) wind power      b) soil fertility      c) wild life      d) all the above
  - All files are stored in the .....  
a) folder      b) box      c) paint      d) scanner

## PART - II

- II. Answer any seven questions. Q.No.22 is compulsory 7 x 2 = 14
- State Rayleigh's saw of scattering.
  - What is the role of the earth wire in domestic circuits?
  - Match the following :  
a) Infrasonic - compressions  
b) Echo - 22 KHz  
c) ultrasonic - 10 Hz  
d) High pressure region - Ultrasonography
  - Writes the alloys of stainless steel and its uses?
  - Match the following :  
a) Nissil's granules - Forebrain  
b) Hypothalamus - Peripheral nervous system  
c) Cerebellum - Cyton  
d) Schwann cell - Hind brain

18. Draw and label the structure of a pollen grain.
19. How does insulin deficiency occur?
20. Fill in the blanks :
  - a) Ciliary movement is initiated against .....
  - b) The blood sucking habit of leech is known as .....
21. Why fossil fuels are to be converted?
22. The hydroxyl ion concentration of a solution is  $1 \times 10^{-9} \text{M}$ . What is the pOH of the solution?

### PART - III

**Answer any seven questions. Q.No.32 is compulsory**

**7 x 4 = 28**

23. Distinguish between linear, areal and superficial expansion.
24. a) Define one roentgen
  - b) Compare any two properties of alpha beta and gamma radiation.
25. Write applications of Avogadro's law?
26. a) Define Hydrated salt
  - b) What happens when  $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$  is heated? Write the appropriate equation?
27. What is called homologous series? Give any three of its characteristics?
28. Name the three basic tissue systems in flowering plants.
29. Differentiate between systole and Diastole. Explain the conduction of heart beat.
30. How a cancer cell differs from a normal cell?
31. What do you understand by the term phenotype and genotype?
32. The ratio of mass of two planets is 2:3 and the ratio of their radii is 4 : 7. Find the ratio of their accelerations due to gravity.

### PART - IV

**Answer all the questions. Draw diagram wherever necessary**

**3 x 7 = 21**

33. a) State Joule's law of heating?
  - b) An alloy of nickel and chromium is used as the heating element. Why?
  - c) How does a fuse wire protect electrical appliances? **(OR)**
- a) Compare between Natural and Artificial Radioactivity?
  - b) Write the uses of nuclear reactor?
34. a) Define Relative atomic mass
  - b) Give the salient features of "Modern atomic theory" **(OR)**
  - a) How does pH play an important role in everyday life?
  - b) 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.
35. a) i) Write the physiological effects of Gibberellin.
  - ii) The degenerated wing of a kiwi is an acquired character. Why is it an acquired character? **(OR)**
- b) i) Enumerate the importance of forest
  - ii) If one pollen grain produces two male gametes, how many pollen grains are needed to fertilize 10 ovules?