T COMMON HALFYEARLY EXAM - 2024

Standard - X

SCIENCE

Time : 3.00 hrs **Marks: 75**

Part - I

Answer all the questions:- **12×1=12**

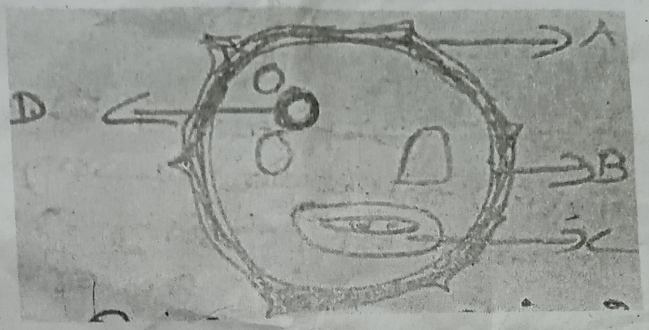
1) In a myopic eye, the image of the object is formed
   a) behind the retina b) on the retina
   c) infront of the retina d) on the blind spot
2) SI unit of resistance is
   a) mtoo b) joule c) ohm d) ohm meter
3) The energy released in a nuclear fission process is _____
   a) 200 MeV b) 300 MeV c) 400 MeV d) 100 MeV
4) Mass of 1 mole of Nitrogen atom is _____
   a) 28 amu b) 14 amu c) 28g d) 14g
5) The molecular formula of gypsum is _____
   a) $CuSO_4.5H_2O$ b) $CaSO_4.2H_2O$ c) $MgSO_4.7H_2O$ d) $ZnSO_4.7H_2O$
6) The molecular formula of a openchain organic compound is C_3H_8. The class of the compound is
   a) alkane b) alkene c) alkyne d) alcohol
7) The body of leech has
   a) 23 segments b) 33 segments c) 38 segments d) 30 segments
8) The outermost of the three cranial meanings is
   a) arachroid membrane b) Piamater c) duramater d) myelin sheath
9) ~~Which among the following is called as "The life saving harmone"~~
   a) Cortisol hormone b) Thyroxine hormone
   c) adrenoline hormone d) Thymozine hormone
10) The essential park of a flower are _____
   a) Calyx and Corolla b) Calyx and androecium
   c) Corolla and Gynoecium c) Androecium and Gynoecium
11) The miracle rice which saved millions of lives and celebrated its 50th birthday is _____
   a) IR8 b) IR24 c) Atomitaz d) Ponni
12) All files are stored in the _____
   a) folder b) box c) paint d) scanner

Part - II **7×2=14**

Answer any seven questions of the following. Question No. 22 is compulsory:-

13) While catching the cricket ball the fielder lowers his hands backwards. Why?
14) Define: One calorie.
15) Give any two uses of radio isotops in the field of agriculture?
16) What is Molar mass of a gas?
17) Give an example each
   i) gas in liquid ii) solid in liquid iii) solid in solid iv) gas in gas
18) Name the three basic tissues system in flowing plants
19) Why is the circulation in man referred to as double circulation?

20) Identify the parts A, B, C & D



Explain
Vegetative structures
Intain
genetic cells

21) What are the consequences of deforestation?

22) The molecular formula of alcohol is $C_4H_{10}O$. The locant number of its –OH group is 2.
i) Draw its structural formula ii) Give its IUPAC name.

Part - III

7×4=28

Answer any seven questions of the following. Question No. 32 is compulsory:-

23) a) What is refractive index? (2)
b) Why does the sky appear in blud colour? (2)

24) a) Name any two devices, which are working on the heating effect of the electric current. (2)
b) State Ohm's law. (2)

25) a) What is an Amalgam? Give an example. (2)
b) A is a silvery white metal. A combines with O_2 to form B at 800°C, the alloy of A is used in making the aircraft. Find A and B. (2)

26) a) What happens when $MgSO_4.7H_2O$ is heated? Write the appropriate equation. (2)
b) Define Solubility. (2)

27) Differentiate reversible and irreversible reactions. (4)

28) a) Write the dental formula of a rabbit. (2)
b) What are the structures involved in the protection of Brain. (2)

29) How do you differentiate Homologous organs from anelogeous organs.

30) How will you prevent soil errosion?

31) What is transpiration? Give the importance of transpiration?

32) a) A sound wave has a frequency of 200Hz and a speed of 400ms^{-1} in a medium. Find the wavelength of the sound wave. (2)
b) Calculate the amount of energy released when a radio active substance undergoes fussion and results in a mass defect of 2 kg.

Part - IV

3×7=21

Answer all the questions. (Draw diagrams wherever necessary)

33) a) i) What are the types of inertia? Give one example for each type. (4)
ii) Distinguish between acid and supecticial expansion. (3) [or]
b) What is a nuclear reactor? Explain its essential parts with their functions. (7)

34) a) i) Write any three uses of aluminium (3)
ii) Write notes on i) Satureted Solution ii) Unsatureted solution (4)
[or]
b) How is ethanol manufactured from sugarcane. (7)

35) a) Describe the name three stages of cellular respiration that aerobic organisms used to obtain their energy from glucose. (7) [or]
b) i) What is the biological significance of DNA. (2)
ii) Suggest measures to over come the problems of an alcoholi. (5)

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