

COMMON HALF YEARLY EXAMINATION - 2023

Standard - X

Time : 3.00 hrs

SCIENCE

Marks: 75

Part - A

I. Answer all the questions:-

Choose the correct answer:-

12×1=12

- 1) Newton's III law is applicable
 - a) for a body is at rest
 - b) both a & b
 - c) for a body in motion
 - d) only for bodies with equal masses
- 2) The value of universal gas constant
 - a) $3.81 \text{ J mol}^{-1} \text{ K}^{-1}$
 - b) $8.03 \text{ J mol}^{-1} \text{ K}^{-1}$
 - c) $1.38 \text{ J mol}^{-1} \text{ K}^{-1}$
 - d) $8.31 \text{ J mol}^{-1} \text{ K}^{-1}$
- 3) Kilowatt hour is the unit of
 - a) resistivity
 - b) conductivity
 - c) electrical energy
 - d) electrical power
- 4) Which of the following is a triatomic molecule?
 - a) Glucose
 - b) Helium
 - c) Carbon-di-oxide
 - d) Hydrogen
- 5) _____ is an important metal to form amalgam.
 - a) Ag
 - b) Hg
 - c) Mg
 - d) Al
- 6) TFM in soaps represents _____ content in soap.
 - a) Mineral
 - b) Vitamin
 - c) fatty acid
 - d) Carbohydrate
- 7) The endarch condition is the characteristic feature of
 - a) root
 - b) stem
 - c) leaves
 - d) flower
- 8) "Heart of Heart" is called
 - a) SA node
 - b) AV node
 - c) Purkinje fibres
 - d) Bundle of H is
- 9) Nerve cells do not possess
 - a) Neurilemma
 - b) Sarcolemma
 - c) axon
 - d) dendrites
- 10) Syngamy results in the formation of _____
 - a) Zoospores
 - b) Coridia
 - c) Zygote
 - d) chlamydo spores
- 11) Okasaki fragments are joined together by _____
 - a) Helicase
 - b) DNA polymerase
 - c) RNA primer
 - d) DNA Ligase
- 12) Which software is used to create animation?
 - a) Paint
 - b) PDF
 - c) MS word
 - d) Scratch

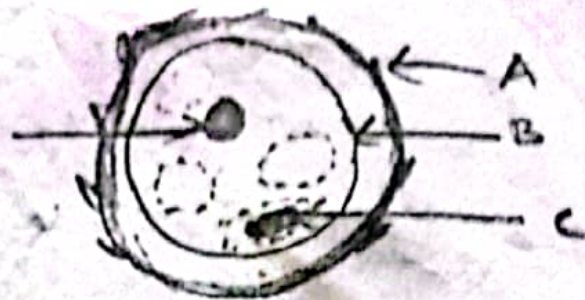
Part - B

II. Answer any 7 questions. (Q.No.22 is compulsory)

7×2=14

- 13) Differentiate Convex Lens and Concave Lens.
- 14) Explain why the ceilings of concert halls are curved?
- 15) What is rust? Give the equation for formation of rust?
- 16) Why does the reaction rate of a reaction increase on raising the temperature?
- 17) Name the simplest Ketone and give its structural formula.
- 18) What is respiratory quotient?
- 19) a) Write the dental formula of rabbit?
b) What does CNS stand for?

20) Identify the parts A, B, C and D.



- 21) Why is Archaeopteryx considered to be a connecting link.
 22) An electric heater of resistance 5Ω is connected to an electric source. If a current of $6A$ flows through the heater, then find the amount of heat produced in 5 minutes.

Part - C

III. Answer any 7 questions. (Q.No.32 is compulsory)

7×4=28

23) Describe rocket propulsion.

24) List the merits of LED bulb?

25) a) Match the following:-

A

B

1) Fe-59

a) Age of fossil

2) I-131

b) Function of heart

3) Na-24

c) Leukemia

4) C-14

d) Thyroid disease

b) State whether the following statements are true or false. If false correct the statement

Elements having atomic number greater than 83 can undergo nuclear fusion

26) a) What is an alloy?

b) i) The chief ore of Aluminium is _____

ii) _____ forms the basis of modern periodic table

27) Differentiate reversible and irreversible reactions?

28) With a neat labelled diagram explain the structure of a neuron?

29) a) What is boiling?

b) What are chemical messengers?

30) a) State any two applications of DNA fingerprinting technique.

b) Differentiate between out breeding and Inbreeding?

31) How will you prevent Soil erosion?

32) The hydroxide ion concentration of a solution is $1 \times 10^{-11}M$. What is the P^H of the solution?

Part - D

IV. Answer all the questions. (Draw the diagrams wherever necessary)

3×7=21

33) a) i) State Boyle's law.

ii) Differentiate the eye defects:- Myopia and Hypermetropia [or]

b) Compare the properties of alpha, beta and gamma radiations.

34) a) Give the salient features of "Modern atomic theory" [or]

b) How is ethanol manufactured from SugarCane.

35) a) What is transpiration? Give the importance of transpiration? [or]

b) Suggest measures to overcome the problems of an alcoholic.

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