

## COMMON THIRD REVISION TEST - 2023

Standard X

Reg No. 10E15

## SCIENCE

Time: 3.00 hours

Part - I

Marks: 75

12 x 1 = 12

## I. Choose the correct answer:

- In which of the following sport, the turning effect of force is used?
  - swimming
  - tennis
  - cycling
  - hockey
- SI unit of resistance is \_\_\_\_\_.
  - mho
  - joule
  - ohm
  - ohm-meter
- Velocity of sound in the atmosphere of a planet is  $500 \text{ ms}^{-1}$ . The minimum distance between the sources of sound and the obstacle to hear the echo should be \_\_\_\_\_.
  - 17 m
  - 20 m
  - 25 m
  - 50 m
- Which of the following represents 1 amu?
  - mass of  $\text{C}^{-12}$  atom
  - mass of a hydrogen atom
  - $\frac{1}{12}$ th of the mass of  $\text{C}^{-12}$  atom
  - mass of  $\text{O}-16$  atom
- Which of the following statement is wrong about detergents?
  - it is a sodium salt of long chain fatty acids
  - it is sodium salts of sulphonic acids
  - the ionic part in a detergent is  $\text{SO}_3^- \text{Na}^+$
  - it is effective even in hard water
- The number of periods and groups in the periodic table are \_\_\_\_\_.
  - 6,16
  - 7,17
  - 8,18
  - 7,18
- Which is the correct sequence of blood flow?
  - ventricle  $\rightarrow$  atrium  $\rightarrow$  vein  $\rightarrow$  arteries
  - atrium  $\rightarrow$  ventricle  $\rightarrow$  veins  $\rightarrow$  arteries
  - atrium  $\rightarrow$  ventricle  $\rightarrow$  arteries  $\rightarrow$  vein
  - ventricle  $\rightarrow$  vein  $\rightarrow$  atrium  $\rightarrow$  arteries
- Vomiting centre is located in \_\_\_\_\_.
  - medulla oblongata
  - stomach
  - cerebrum
  - hypothalamus
- Okasaki fragments are joined together by \_\_\_\_\_.
  - helicase
  - DNA polymerase
  - RNA primer
  - DNA ligase
- rDNA is a \_\_\_\_\_.
  - vector DNA
  - circular DNA
  - recombinant of vector DNA and desired DNA
  - satellite DNA
- The best way of direct dating fossils of recent origin is by \_\_\_\_\_.
  - radio-carbon method
  - uranium-lead method
  - potassium-argon method
  - both (a) and (c)
- Green house effect refers to \_\_\_\_\_.
  - cooling of earth
  - trapping of U-V rays
  - cultivation of plants
  - warming of earth

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## Part - II

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

7 x 2 = 14

13. State whether the following statements are true or false. If false, explain why?
- For a given heat in liquid, the apparent expansion is more than that of real expansion
  - According to Charle's law, at constant pressure, the temperature is inversely proportional to volume.
14. Match the following :
- |                         |                     |
|-------------------------|---------------------|
| a) Infrasonic           | - Compressions 4    |
| b) Echo                 | - 22 KHz 3          |
| c) Ultrasonic           | - 10 Hz 1           |
| d) High pressure region | - Ultrasonography 2 |
15. Use the analogy to fill in the blanks:
- Increasing crops : Radio Phosphorus :: Effective functioning of heart : \_\_\_\_\_
  - Deflected by electric field :  $\alpha$ -ray :: Null deflection : \_\_\_\_\_
16. A hot saturated solution of copper sulphate forms crystals as it cools. Why?
17. Calculate the number of moles in 27 g of Al.
18. a) What is respiratory quotient?  
b) Which kind of cells are found in lymph?
19. a) Give the common name of Hirudinaria granulosa.  
b) How does leech respire?
20. a) Which acts as a link between the nervous system and endocrine system?  
b) Name the parts of the hind brain.
21. a) Which gland secretes digestive enzymes and hormones?  
b) What is the enzymes present in acrosome of sperm?
22. A charge of 12 coulomb flows through a bulb in 5 seconds. What is the current through the bulb?

## Part - III

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

7 x 4 = 28

23. a) While catching a cricket ball, the fielder lowers his hands backwards. Why?  
b) How does an astronaut float in space shuttle?
24. a) State Snell's Law.  
b) State Rayleigh's Law of scattering.
25. a) Define electric potential and electric potential difference.  
b) Define Critical mass.
26. a) Write the different types of isotopes of oxygen and its percentage abundance.  
b) What is molar volume of a gas?
27. A is a reddish brown metal, which combines with oxygen at  $<1370$  K gives B, a black coloured compound. At a temperature  $>1370$  K, A gives C which is red in colour. Find A, B and C with reaction.
28. Classify the following compounds based on the pattern of carbon chain and give their structural formula:

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- i) propane    ii) benzene    iii) cyclobutane    iv) furan
29. a) Bring out any two physiological activities of abscisic acid.  
b) Define triple fusion.
30. a) How are stem cells useful in regenerative process?  
b) Why is Archaeopteryx considered to be a connecting link?
31. a) What is metastasis?  
b) What are the advantages of using biogas?
32. A solution is prepared by dissolving 45 g of sugar in 180 g of water. Calculate the mass percentage of solute.

**Part - IV****IV. Answer all the questions.****3 x 7 = 21**

33. a) Explain the experiment of measuring the real and apparent expansion of a liquid with a neat diagram.

**(OR)**

- b) i) What is meant by electric current?  
ii) Name and define its unit.  
iii) Which instrument is used to measure the electric current? How should it be connected in a circuit?
34. a) i) Write short notes on 1) saturated solution 2) unsaturated solution.  
ii) Explain smelting process.  
iii) Define solubility.

**(OR)**

- b) i) What is called homologous series? Give any three of its characteristics.  
ii) Name the simplest Ketone and give its structural formula.
35. a) i) Why are the rings of cartilages found in trachea of rabbit?  
ii) How does locomotion take place in leech?  
iii) What is transpiration?

**(OR)**

- b) i) Draw the structure of chloroplast and label it.  
ii) Enumerate the importance of forest.

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