

I. Fill in the blanks:

1. Negative acceleration is called _____.
2. Valency of magnesium is $\frac{24}{12}mg$ is _____.
3. The _____ epithelium is also known as pavement membrane.
4. _____ tissue in the skin functions as a water-proof membrane.
5. The _____ tissue include cartilage and bone.

II. Answer the following in one or two sentences: 5x2=10

Part - A (any one)

6. What do you mean by uniform circular motion?
7. Define speed.

Part - B (any one)

8. Calculate the number of Neutrons in _____.

- a) ${}_{13}^{27}Al$ b) ${}_{24}^{54}Cr$

9. What is the electronic configuration of oxygen?

Part - C (any three)

10. Name the four basic types of animal tissues on the basis of their structure and function.
11. List out any two functions of epithelial tissues.
12. Name the two types of fluid connective tissue.
13. What is cartilage?
14. Where are the glandular epithelial cells found?

III. Answer in detail: 2x5=10

15. A sound is heard 5s later than the lightning is seen in the sky on a rainy day. Find the distance of location of lightning given the speed of sound = $346ms^{-1}$.

(or)

16. Write about positive and negative acceleration.

Part - B

17. Write the geometric representation of atomic structure of elements with diagram (oxygen and sulphur)

- a) ${}_{8}^{16}O$ b) ${}_{16}^{32}S$

(or)

18. Calculate the atomic number of an element whose mass number is 39 and number of neutrons is 20. Also find the name of the element and draw the diagram.

I. Choose the correct answer: 4x1=4

1. When written with a rational denominator, the expression

$\frac{2\sqrt{3}}{3\sqrt{2}}$ can be simplified as

- 1) $\frac{\sqrt{2}}{3}$ 2) $\frac{\sqrt{3}}{2}$ 3) $\frac{\sqrt{6}}{3}$ 4) $\frac{2}{3}$

2. The length and breadth of a rectangular plot are 5×10^5 and 4×10^4 metres respectively then its area is _____.

- 1) $9 \times 10^1 m^2$ 2) $9 \times 10^9 m^2$ 3) $2 \times 10^{10} m^2$ 4) $20 \times 10^{20} m^2$

3. $(0.000729)^{\frac{-3}{4}} \times (0.09)^{\frac{-3}{4}} =$

- 1) $\frac{10^3}{3^3}$ 2) $\frac{10^5}{3^5}$ 3) $\frac{10^2}{3^2}$ 4) $\frac{10^6}{3^6}$

4. If $\sqrt{9^x} = \sqrt[3]{9^2}$, then $x =$

- 1) $\frac{2}{3}$ 2) $\frac{4}{3}$ 3) $\frac{1}{3}$ 4) $\frac{5}{3}$

II. Answer the following: 3x2=6

5. Write in scientific notation.

- i) 2000.57 ii) 0.005

6. Rationalise the denominator $\frac{3\sqrt{5}}{\sqrt{6}}$

7. Write in decimal form 2.00367×10^{-5}

III. Answer the following: 3x5=15

8. Simplify: $(0.000001)^{11} \div (0.005)^3$

9. Find the value of a and b if $\frac{\sqrt{7}-2}{\sqrt{7}+2} = a\sqrt{7} + b$

10. Rationalise the denominator

$$\frac{2\sqrt{6}-\sqrt{5}}{3\sqrt{5}-2\sqrt{6}}$$