DIRECTIONS:

Total Questions: 30 | Time: 60 minutes | Each question carries 1 mark
Instructions: Choose the correct option (A, B, C, or D). No negative marking.

SECTION 1: PHYSICS (Q1–Q8)

Q1. A projectile is launched at an angle of 45° with the horizontal. What is the maximum height reached if the initial velocity is 20 m/s?
 A. 5 m
 B. 10 m
 C. 15 m
 D. 20 m

Q2. In an elastic collision, which of the following is conserved?
 A. Momentum only
 B. Kinetic energy only
 C. Both momentum and kinetic energy
 D. Neither momentum nor kinetic energy

Q3. A transformer is used to increase voltage. Which of the following is true?
 A. Number of turns in the secondary coil is less
 B. Current increases in the secondary coil
 C. Voltage decreases in the secondary coil
 D. Voltage increases in the secondary coil

Q4. The SI unit of magnetic flux is:
 A. Weber
 B. Tesla
 C. Henry
 D. Ampere

Q5. Which law gives the relation between electric current and potential difference?
 A. Ohm's Law
 B. Kirchhoff's Law
 C. Faraday's Law
 D. Ampere's Law

Q6. A wire of resistance R is stretched to double its length. What is its new resistance?
 A. R
 B. 2R
 C. 3R
 D. 4R

Q7. The velocity of sound in air increases with:
A. Decrease in temperature
B. Increase in pressure
C. Increase in temperature
D. Increase in humidity

Q8. Which of the following particles has the least mass?
A. Proton
B. Electron
C. Neutron
D. Alpha particle

SECTION 2: CHEMISTRY (Q9–Q16)

Q9. The pH of a neutral solution at 25°C is:
A. 1
B. 7
C. 10
D. 14

Q10. Which gas is released during the reaction of sodium with water?
A. Oxygen
B. Hydrogen
C. Nitrogen
D. Carbon dioxide
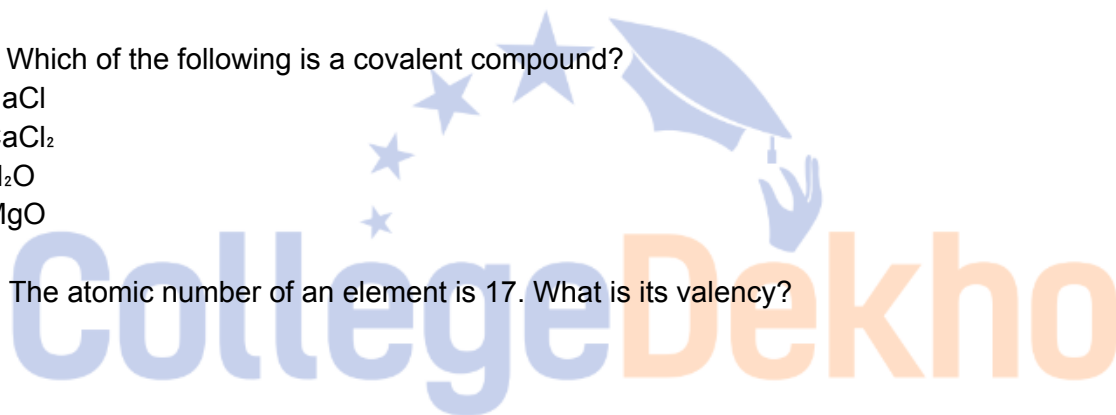
Q11. Which of the following is a covalent compound?
A. NaCl
B. $CaCl_2$
C. H_2O
D. MgO

Q12. The atomic number of an element is 17. What is its valency?
A. 1
B. 3
C. 5
D. 1

Q13. In a redox reaction, the substance which is reduced:
A. Gains electrons
B. Loses electrons
C. Gains protons
D. Loses protons

Q14. The molar mass of H_2SO_4 is:
 A. 98 g/mol
 B. 36.5 g/mol
 C. 63 g/mol
 D. 60 g/mol

Q15. Which of the following is an example of a strong acid?
 A. CH_3COOH
 B. HCl
 C. H_2CO_3
 D. HCN

Q16. Which of the following is used as an antacid?
 A. HCl
 B. NaOH
 C. $Mg(OH)_2$
 D. Na_2CO_3

SECTION 3: MATHEMATICS (Q17–Q24)

Q17. If $x^2 - 4x + 4 = 0$, then x = ?
 A. 0 or 2
 B. 2 or -2
 C. 2 only
 D. -2 only

Q18. The value of sin 30° is:
 A. 1
 B. 0.5
 C. $\sqrt{3}/2$
 D. 0

Q19. The derivative of x^2 is:
 A. 1
 B. 2x
 C. x
 D. x^2

Q20. If the sum of the first n natural numbers is 210, find n.
 A. 20
 B. 21
 C. 19
 D. 18

Q21. The value of (a+b)2(a+b)^2(a+b)2 is:
 A. a2+b2a^2 + b^2a2+b2
 B. a2+2ab+b2a^2 + 2ab + b^2a2+2ab+b2
 C. a2−2ab+b2a^2 - 2ab + b^2a2−2ab+b2
 D. a2+ba^2 + ba2+b

Q22. What is the slope of the line 3x + 2y = 6?
 A. -2/3
 B. 3/2
 C. 2/3
 D. -3/2

Q23. The area of a triangle with base 10 cm and height 5 cm is:
 A. 25 cm²
 B. 50 cm²
 C. 10 cm²
 D. 15 cm²

Q24. If log 10 = 1, then log 100 = ?
 A. 0
 B. 1
 C. 2
 D. 10

SECTION 4: BIOLOGY (Q25–Q30)

Q25. Which of the following is a unicellular organism?
 A. Amoeba
 B. Earthworm
 C. Human
 D. Mango tree

Q26. The powerhouse of the cell is:
 A. Ribosome
 B. Mitochondria
 C. Nucleus
 D. Golgi body

Q27. Transpiration takes place through:
 A. Stomata
 B. Phloem
 C. Xylem
 D. Root hairs

Q28. Which vitamin is produced in the skin in sunlight?
 A. A
 B. B
 C. C
 D. D

Q29. Which of the following causes malaria?
 A. Virus
 B. Fungi
 C. Protozoa
 D. Bacteria

Q30. DNA is found in the:
 A. Ribosome
 B. Mitochondria and Nucleus
 C. Cytoplasm
 D. Lysosome

Answer Key

Q.No	Ans	Q.No	Ans	Q.No	Ans	Q.No	Ans
1	C	9	B	17	C	25	A
2	C	10	B	18	B	26	B
3	D	11	C	19	B	27	A
4	A	12	A	20	B	28	D
5	A	13	A	21	B	29	C
6	D	14	A	22	A	30	B
7	C	15	B	23	A		
8	B	16	C	24	C		