MUKESH DADVANI'S

PHOENIX

JEE | NEET | FOUNDATION

SAMPLE PAPER FOR THE STUDENTS 10TH GOING TO 11TH CLASS

BRAHMASTRA ADMISSTION CUM SCHOLARSHIP TEST 2025

MAXIMUM MARKS : 200

TIME : 04:30 PM TO 06:00 PM

DURATION : 90 MIN.

INSTRUCTIONS

- The paper Consists of four section

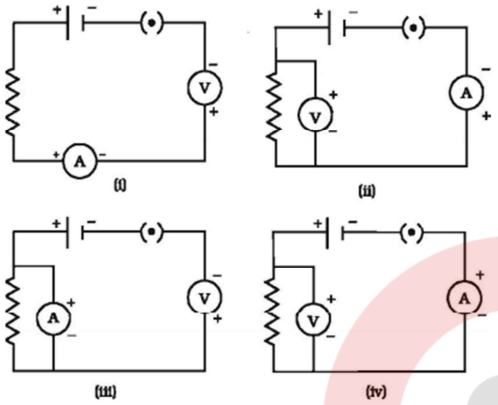
Section	Subject	Question no	Correct Answer	Wrong number
Section – 1	Physics	1- 15	+4	-1
Section – 2	Chemistry	16-30	+4	-1
Section – 3	Mat	31-40	+4	-1
Section – 4	Mathematics	41-50	+4	-1

SECTION - 1
PHYSICS

1. If an electric iron of 1200 W is used for 30 minutes every day, electric energy consumed in the month of April is

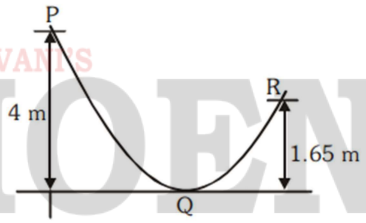
(A) 5 kWh (B) 10 kWh (C) 16 kWh (D) 18 kWh

2. Identify the given circuit in which the electrical components have been properly connected



(A) (i) (B) (ii) (C) (iii) (D) (iv)

3. A bead starts sliding from a point P on a frictionless wire with initial velocity of 5 ms^{-1}. Find the velocity of bead at point R (take g = 10 ms^{-2})



(A) 7m / s (B) $5\sqrt{2}$ m / s (C) $6\sqrt{2}$ m / s (D) 6 m/s

4. In a hydroelectric power plant more electrical power can be generated if water falls from a greater height because

(A) its temperature increases

(B) larger amount of potential energy is converted into kinetic energy

(C) the electricity content of water increases with height

(D) more water molecules dissociate into ions

5. The weight of an object in the coal mine, sea level, at the top of the mountain are W1, W2 & W3 respectively, then :-

(A) $W_1 < W_2 > W_3$ (B) $W_1 = W_2 = W_3$

(C) $W_1 < W_2 < W_3$ (D) $W_1 > W_2 > W_3$

6. The incorrect statement regarding the lines of force of the magnetic field B is

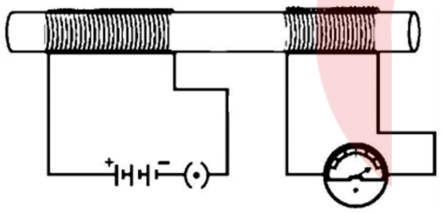
(A) Magnetic intensity is a measure of lines of force passing through unit area held normal to it

(B) Magnetic lines of force form a close curve

(C) Inside a magnet, its magnetic lines of force move from north pole of a magnet towards its south pole

(D) Due to a magnet, magnetic lines of force never cut each other

7. In the arrangement shown in Figure there are two coils wound on a non-conducting cylindrical rod. Initially the key is not inserted. Then the key is inserted and later removed. Then



(A) the deflection in the galvanometer remains zero throughout

(B) there is a momentary deflection in the galvanometer but it dies out shortly and there is no effect when the key is removed

(C) there are momentary galvanometer deflections that die out shortly; the deflections are in the same direction

(D) there are momentary galvanometer deflections that die out shortly; the deflections are in opposite directions

8. A girl stands on a box having 60 cm length, 40 cm breadth and 20 cm width in three ways. In which of the following cases, pressure exerted by the block on the ground will be

(A) maximum when length and breadth form the base

(B) maximum when breadth and width form the base

(C) maximum when width and length form the base

(D) the same in all the above three cases

9. The magnetic compass is not useful for navigation near the magnetic poles because

(A) The magnetic field near the poles is zero

(B) The magnetic field near the poles is almost vertical

(C) At low temperature, the compass needle looses its magnetic properties

(D) Neither of the above

10. An electric kettle consumes 1 kW of electric power when operated at 220 V. A fuse wire of what rating must be used for it?

(A) 1 A (B) 2 A (C) 4 A (D) 5 A

11. Demagnetisation of magnets can be done by

(A) Rough handling (B) Heating

(C) Magnetising in the opposite direction (D) All the above

12. An electric lamp uses energy at the rate of 48 W on a 12 V supply. How much charge passes through the lamp in 2.0 seconds ?

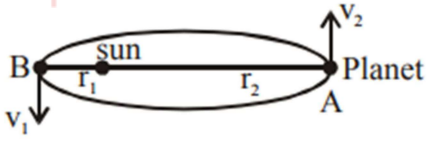
(A) 4 amperes (B) 8 amperes (C) 48 coulombs (D) 8 coulombs

13. In a conducting wire current is flowing from north to south. A positive charge is moving in upward direction is above the wire. Charge will deviated in the direction :-

(A) North (B) South (C) East (D) West

14. A planet revolves around the sun in elliptical orbit as shown. It is known that product of mass of planet (m), its velocity (v) & distance from sun (r) is same for position A & B $\left[\text{i.e.} mv_1r_1 = mv_2r_2\right]$. A scientist decided to find the mass of planet and thus measures i.e. v_1, v_2, r_1 & r_2. What is the mass of planet ?

(Given : $r_1 = 10^8$ km, $r_2 = 1.5 \times 10^8$ km, $v_1 = 2.25$ m/s & $v_2 = 1.5$ m/s)



(A) 6×10^{24}kg (B) 2.25×10^{16}kg

(C) 1.5×10^{16}kg (D) Cannot be determined from the given data

15. The device used for producing electric current is called a :-

(A) generator (B) galvanometer (C) ammeter (D) motor

SECTION - 2
CHEMISTRY

16. Which of the following is a strong acid?

(A) H_2CO_3 (B) CH_3COOH (C) HCl (D) HCOOH

17. Which of the following reactions involves the combination of two elements?

(A) $CaO + CO_2 \rightarrow CaCO_3$ (B) $4Na + O_2 \rightarrow 2Na_2O$

(C) $SO_2 + \frac{1}{2}O_2 \rightarrow SO_3$ (D) $NH_3 + HCl \rightarrow NH_4Cl$

18. $Fe_2O_3 + 2Al \rightarrow Al_2O_3 + 2Fe$

The above reaction is an example of a

(A) Combination reaction (B) Double displacement reaction

(C) Decomposition reaction (D) Displacement reaction

19. Which of the following is second most abundant in the earth's crust?

(A) Cu (B) Zn (C) Al (D) Fe

20. Which of the following is a dibasic acid?

(A) HCl (B) H_3PO_2 (C) HNO_3 (D) $H_2C_2O_4$

21. Which of the following is the ore of a metal which belongs to group–14?

(A) Galena (B) Cinnabar (C) Bauxite (D) Pyrolusite

22. How many times a solution of pH = 3 be diluted to get a solution of pH = 6?

(A) 2 times (B) 10 times (C) 100 times (D) 1000 times

Comprehension for Q. No. 23 to 24

When the metal carbonates and hydrogen carbonates react with the acids, they produce salt and water and liberate the carbon dioxide gas. Metal carbonates + Acid → salt + carbon dioxide + water

23. A solution reacts with crushed egg-shells to give a gas that turns lime-water milky. The solution contains:

(A) NaCl (B) HCl (C) LiCl (D) KCl

24. A student dropped few pieces of marbles in acetic acid contained in a test tube. The evolved gas was then passed through lime water in excess, then what will you observe

(A) Lime water become milk
(B) Milkyness will disappear
(C) No change
(D) None of these

Comprehension for Q. No. 25 to 26

In terms of electronic concept, reductants are electron donors while oxidants are electron acceptors. Oxidants also involve decrease in the oxidation number of one of its atoms/ions while reductants involve increase in the oxidation number of one of its atoms/ions. Oxidation number are always and must be always calculated on the basis of their structures and never from their molecular formulae. Redox reactions can be balanced both by oxidation number method as well as ion-electron method.

25. In the reaction

$$3Br_2 + 6CO_3^{2-} + 3H_2O \longrightarrow 5Br^- + BrO_3^- + 6HCO_3^-$$

(A) Bromine is oxidised and carbonate is reduced
(B) Bromine is reduced and water is oxidised
(C) Bromine is neither reduced nor oxidised
(D) Bromine is both reduced and oxidised

26. The following reaction is used for the preparation of oxygen gas in the laboratory:

$$2KClO_3(s) \xrightarrow{\Delta} 2KCl(s) + 3O_2(g)$$

Which of the following statement about the reaction is correct?

(A) It is a decomposition reaction and endothermic in nature

(B) It is a combination reaction

(C) It is a decomposition reaction & accompanied by release of heat

(D) It is a photochemical decomposition reaction & exothermic in nature

Comprehension for Q. No. 27 to 28

Fluorine, chlorine, bromine and iodine belong to Group 17 and are collectively known as halogens (which means salt producer).The halogens are very reactive and react with metals and many nonmetals. Fluorine is the most reactive and the reactivity decreases with increase in atomic number. The oxidizing power of halogens decrease down the group and the reducing power increases down the group. All halogens from nonnegative ions by accepting one electron each into the singly filled p orbital. The halides of metals in low-valence states are mostly ionic, but in high valence states, metal halides tend to be polar covalent. The halides of all nonmetals and some metals are covalent, and the halogen atoms (except fluorine) may have +1 or –1 oxidation state depending on the electronegativity of other element with which it is covalently bonded.

27. The halogen exhibiting no positive oxidation state is

(A) fluorine (B) chlorine (C) bromine (D) iodine

28. Amongst the halogens, the strongest oxidizing agent is

(A) fluorine (B) chlorine (C) briomine (D) iodine

Comprehension for Q. No. 29 to 30

An oxidizing agent (often referred to as an oxidant) is a chemical species that tends to oxidize other substances, A substance which loses electrons to other substances in a redox reaction and gets oxidised to a higher valency state is called a reducing agent. A redox equation can be balanced using the following stepwise procedure: (1) Divide the equation into two half-reactions. (2) Balance each half-reaction for number of atoms and charge. (3) Equalize the number of electrons transferred in each half-reaction. (4) Add the half-reactions together

29. What is the value of x in given equation? $yAl + xH^{+} \rightarrow yAl^{3+} + zH_2$

(A) 2 (B) 4 (C) 6 (D) 8

30. What is the ratio of coefficients reducing agent to oxidizing agent, if the following reaction is correcting balanced? $NH_3 + O_2 \rightarrow NO + H_2O$

(A) 4 : 5 (B) 5 : 4 (C) 5 : 3 (D) 3 : 5

SECTION - 3
MAT

31. Mohan travels 7 km Eastwards and then he turns right and travelled 3 km and further turns right again and travelled 11 km. How far is he from the starting point?

(A) 25 km (B) 15 km (C) 5 km (D) None of these

32. Pointing towards a person a man said to a woman. “His mother is the only daughter of your father”. How is the woman related to that person?

(A) Aunty (B) Mother (C) Son-in-law (D) None

33. Find the Missing number.

3	1	4
5	4	7
2	8	?
38	81	74

(A) 9 (B) 6 (C) 3 (D) 7

34. The second figure in the first unit of the problem figures bears a certain relationship to the first figure. Similarly, one of the figures in the answer figures bears the same relationship to the first figure in the second unit of the problem figures. You are therefore to locate the figure which would replace the question mark.

Problem Figures

1 2 3 4

Answer Figures

(A) (B) (C) (D)

35. In the question given below is a sequence in which some letters are missing from the choices. Select the choice that gives the letters that can fill the blanks in the given sequence.a_cd_c_a_da_d_b_

(A) bbdcbac (B) bbcdabc (C) bacbbabc (D) bcdbabc

36. If “DISTANCE” is coded as “ECNATSID”, then how will “UDOMETER” be coded?

(A) RETEOMDU (B) RETMEODU (C) RETEMODU (D) RETMOEDU

37. In this type of question, two numbers are given. These numbers are related to each other in some way. Another number is also given. The candidate is required to find out the relationship between the first two numbers and choose the number from the given alternatives, which bears the same relationship to the third number, as the first two bear.

2 : 9 : : 64 : ?

(A) 125 (B) 257 (C) 422 (D) 600

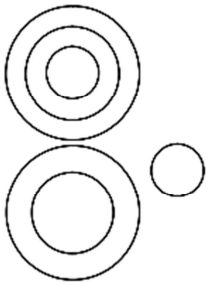
38. 4 April 1988 fell on Monday. What day of the week was 3 November 1987?

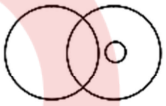
(A) Monday (B) Tuesday (C) Wednesday (D) Friday

39. Pointing towards a man in the photograph Archana said "He is the son of the only son of my grandmother". How is that man related to Archana?

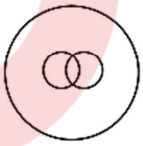
(A) Brother (B) Cousin (C) Uncle (D) Father

40. Choose the correct diagram given below which can best represent the following data.
Fruit, Apple, Golden Apple.

(A) 

(B) 

(C)

(D) 

SECTION - 4
MATHS

41. The value of k for which the system of equations

$2x+3y=5$

$4x+ky=10$

has infinite number of solutions, is

(A) 1 (B) 3 (C) 6 (D) 0

42. The area of the triangle formed by the lines y = x, x = 6 and y = 0 is

(A) 36 sq.units (B) 18 sq.units (C) 9 sq.units (D) 72 sq.units

43. In a ΔABC,AD is the bisector of $\angle BAC$, If AB = 6 cm , AC = 5 cm and BD = 3 cm, then DC =

(A) 11.3 cm (B) 2.5 cm (C) 3.5 cm (D) None of these

44. if $x\sin(90^\circ-\theta)\cot(90^\circ-\theta)=\cos(90^\circ-\theta)$, then x =

(A) 0 (B) 1 (C) -1 (D) 2

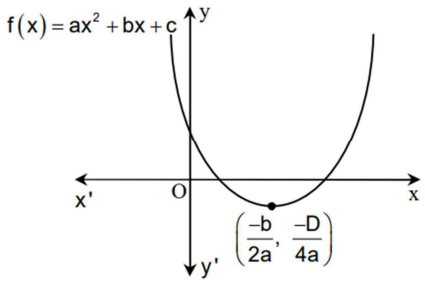
45. $\tan 5^\circ \times \tan 30^\circ \times 4\tan 85^\circ$ is equal to

(A) $\frac{4}{\sqrt{3}}$ (B) $4\sqrt{3}$ (C) 1 (D) 4

46. If one zero of the polynomial $f(x)=(k^2+4)x^2+13x+4k$ is reciprocal of the other, then k is equal to-

(A) 2 (B) -2 (C) 1 (D) -1

47. If the given diagram shows the graph of the polynomial $f(x)=ax^2+bx+c$, then



(A) $a > 0, b < 0$ and $c > 0$ (B) $a > 0, b > 0$ and $c < 0$

(C) $a > 0, b > 0$ and $c > 0$ (D) $a < 0, b > 0$ and $c < 0$

48. If $\tan x + \tan^2 x + \tan^3 x = 1$ then the value of $2\cos^6 x - 2\cos^4 x + \cos^2 x$ equals to

(A) 1/2 (B) 2 (C) 1 (D) none of these

49. If the value of a quadratic polynomial P(x) is 0 only at $x = -1$ and $P(-2) = 2$, then the value of P(3) is :

(A) 32 (B) 35 (C) 36 (D) 24

50. Point R (h, k) divides line segment AB between axes in the ratio 1 : 2 where A lies on X-axis. Find the equation of line.

(A) $2hx + ky = 3hk$ (B) $2kx + hy = 3hk$ (C) $kx + hy = 2hk$ (D) $3hx + hy = 4hk$

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BRAHMASTRA ADMISSION CUM SCHOLARSHIP TEST 2025

ANSWER KEYS

PHYSICS SECTION 1		CHEMISTRY SECTION 2		MAT SECTION 3		MATHEMATICS SECTION 4	
1	D	16	C	31	C	41	C
2	B	17	B	32	B	42	B
3	C	18	D	33	C	43	B
4	B	19	C	34	C	44	B
5	A	20	D	35	A	45	A
6	C	21	A	36	C	46	A
7	D	22	D	37	B	47	A
8	B	23	B	38	B	48	A
9	B	24	B	39	A	49	A
10	D	25	D	40	A	50	B
11	D	26	A				
12	D	27	A				
13	B	28	A				
14	D	29	C				
15	A	30	A				