

2024 ASOC ANSWER BOOKLET-ONLINE

Name: _____ School: _____ Account Number: _____

Section A: Multiple choice questions. (30 marks)

Please record your answers from Q1 to Q15 in the exam system.

Section B: Short answer questions (90 marks)

Question 16

(a)

(b)

(c)

(d)

SnO₂

HCl

SnO

Sn(OH)₂

Sn(OCl)₂

H₂

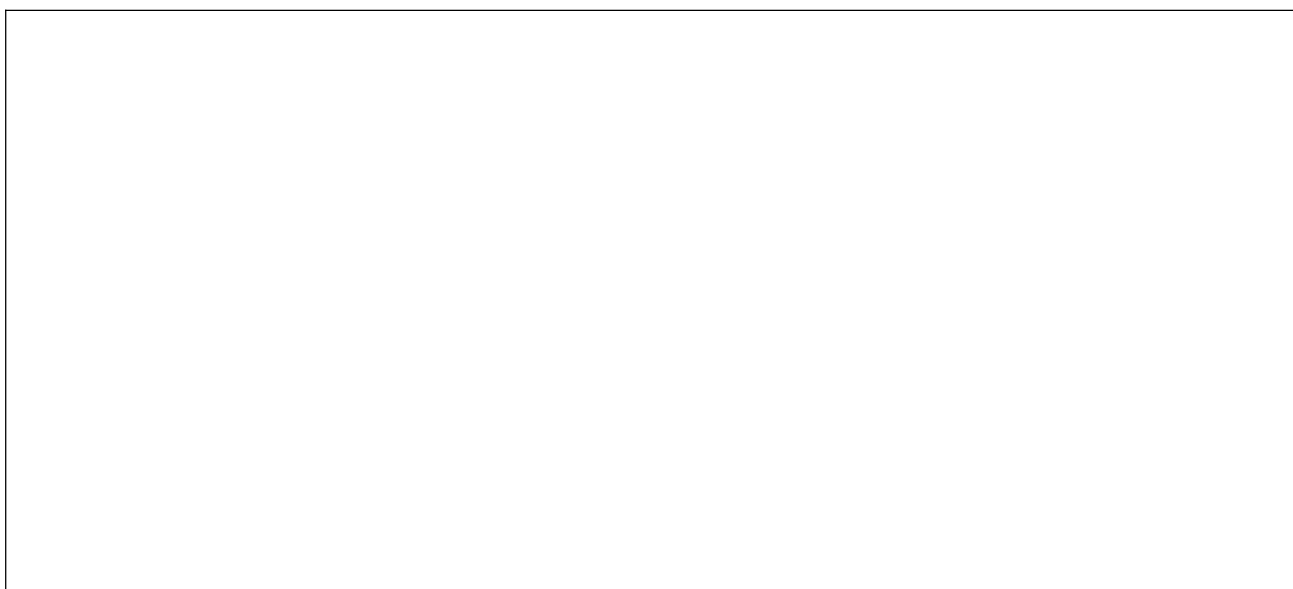
NaCl

Cl₂

H₂O

Na₂O

(e)



(f)

Increases

Stays the same

Decreases

(g)



(h)

A large, empty rectangular box with a thin black border, intended for the answer to question (h).

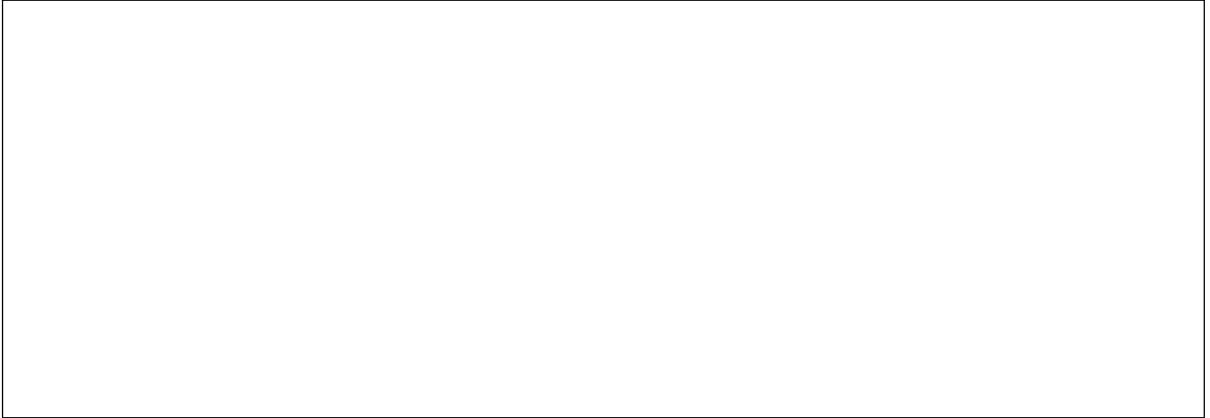
(i)

A large, empty rectangular box with a thin black border, intended for the answer to question (i).

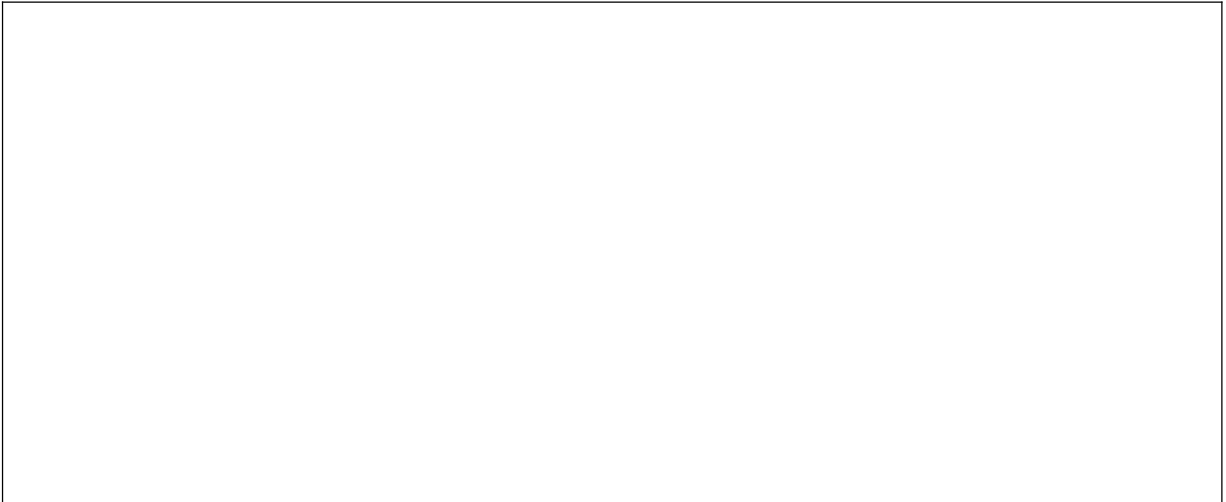
(j)

A large, empty rectangular box with a thin black border, intended for the answer to question (j).

(k)



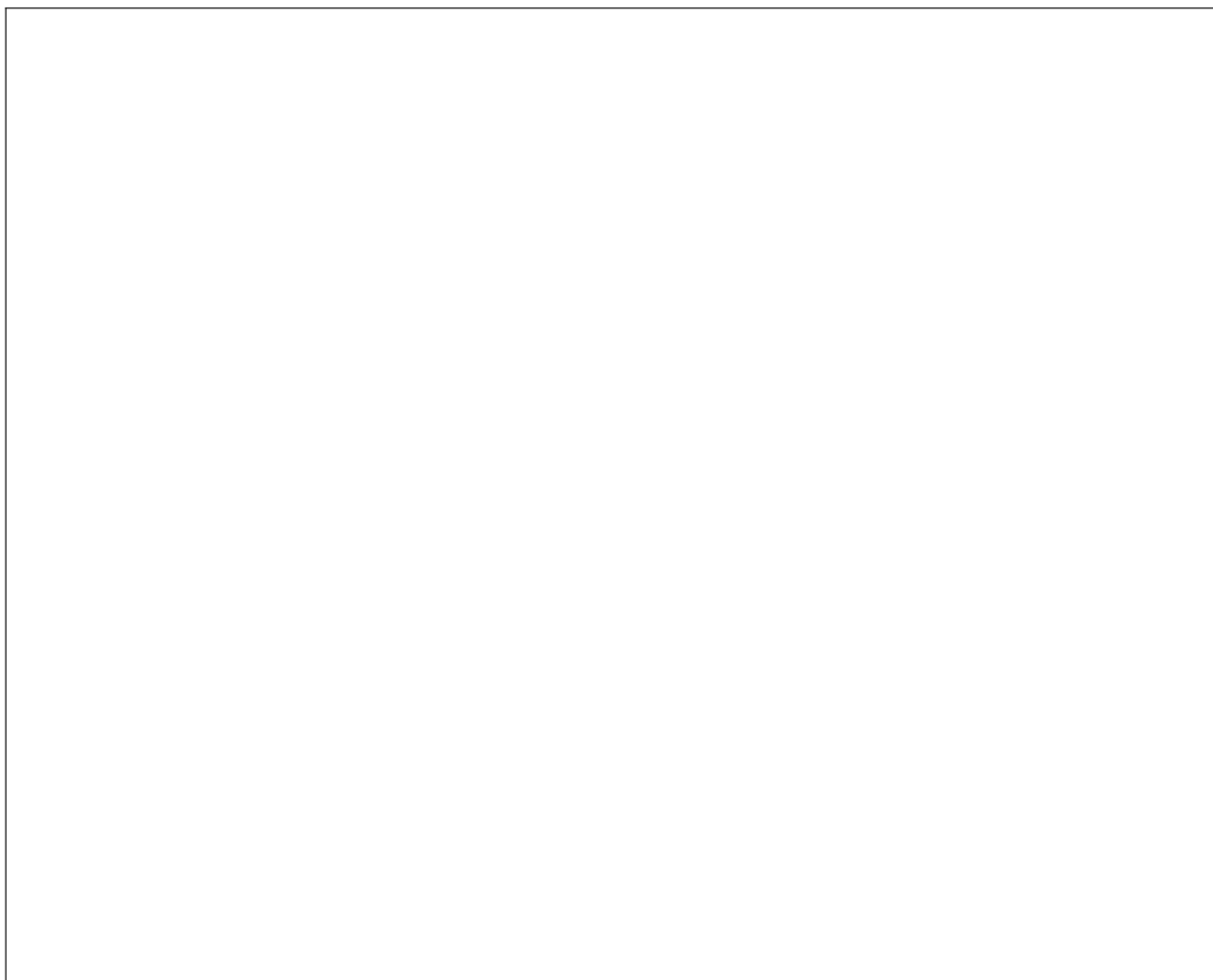
(l)



(m)



(n)



(o)

- PbO
- Pb(OH)₃
- Pb(OH)₄
- PbO₂
- PbO(NO₃)
- PbO(NO₃)₂
- Pb(NO₃)₂
- Pb(OH)₃NO₃

Question 17

(a)

(b)

(c)

(d)

(e)

(f)

A large, empty rectangular box with a thin black border, intended for the answer to question (f).

(g)

A large, empty rectangular box with a thin black border, intended for the answer to question (g).

(h)

A large, empty rectangular box with a thin black border, intended for the answer to question (h).

(i)

A large, empty rectangular box with a thin black border, intended for the answer to question (i).

(j)

A large, empty rectangular box with a thin black border, intended for the answer to question (j).

(k)

A large, empty rectangular box with a thin black border, intended for the answer to question (k).

(l)

A large, empty rectangular box with a thin black border, intended for the answer to question (l).

(m)

A large, empty rectangular box with a thin black border, intended for the answer to question (m).

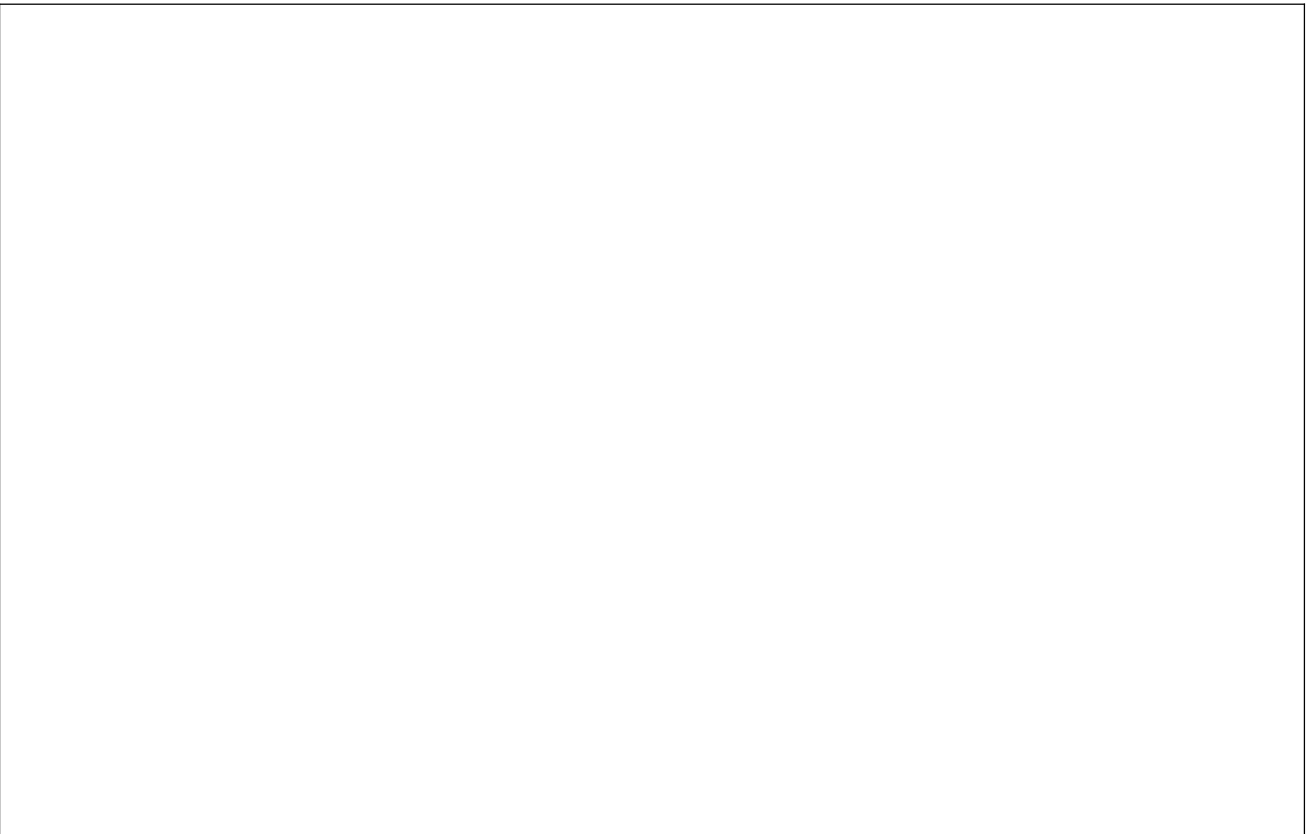
(n)

A large, empty rectangular box with a thin black border, intended for the answer to question (n).

(o)



(p)



(q)




Question 18

(a)



(b)



(c) The red ca... has ___ bonding domains and has a _____ geometry.

The red p... has ___ bonding domains and has a _____ geometry.

The red n... has ___ bonding domains and has a _____ geometry.

(d)

(e)

(f)

(g)

Cell type	Size (Gbp)
X gamete	3.131
Y gamete	
XX somatic cell	
XY somatic cell	

(h)

(i)

(j)

- The repro... is _____.
- Its plo...is _____.
- The num... is _____.

(k)

(l)

(m)

(n)

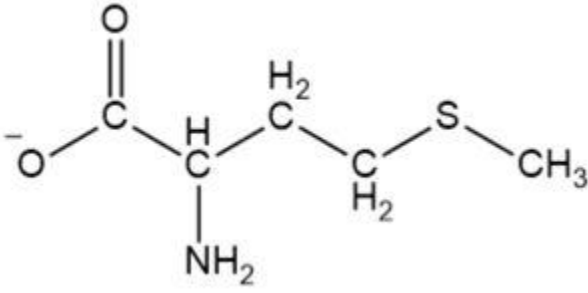
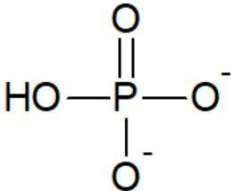
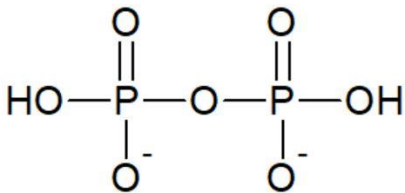
(o)

(p)

(q)

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(r)

(s)

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END OF THE ANSWER BOOKLET

DATA

Avogadro constant (N) = $6.022 \times 10^{23} \text{ mol}^{-1}$	Velocity of light (c) = $2.998 \times 10^8 \text{ m s}^{-1}$
1 Faraday = 96 485 coulombs	Density of water at 25 °C = 0.9971 g cm^{-3}
1 A = 1 C s ⁻¹	Acceleration due to gravity = 9.81 m s^{-2}
Universal gas constant (R) 8.314 J K ⁻¹ mol ⁻¹ $8.206 \times 10^{-2} \text{ L atm K}^{-1} \text{ mol}^{-1}$	1 newton (N) = 1 kg m s^{-2}
Planck's constant (h) = $6.626 \times 10^{-34} \text{ J s}$	1 pascal (Pa) = 1 N m^{-2}
Molar volume of ideal gas <ul style="list-style-type: none"> at 0 °C and 100 kPa = 22.71 L at 25 °C and 100 kPa = 24.79 L at 0 °C and 101.3 kPa = 22.41 L at 25 °C and 101.3 kPa = 24.47 L 	$\text{pH} = -\log_{10}[\text{H}^+]$ $\text{pH} + \text{pOH} = 14.00 \text{ at } 25^\circ\text{C}$ $K_a = \{[\text{H}^+][\text{A}^-]\} / [\text{HA}]$ $\text{pH} = \text{p}K_a + \log_{10}\{[\text{A}^-] / [\text{HA}]\}$ $\text{PV} = nRT$ $E = h\nu$
Surface area of sphere A = $4\pi r^2$	$c = \nu\lambda$

Periodic Table of Elements

	1																18	
	1 H 1.008	2	atomic number Symbol atomic weight										13	14	15	16	17	2 He 4.003
	3 Li 6.94	4 Be 9.01											5 B 10.81	6 C 12.01	7 N 14.01	8 O 16.00	9 F 19.00	10 Ne 20.18
	11 Na 22.99	12 Mg 24.31	3	4	5	6	7	8	9	10	11	12	13 Al 26.98	14 Si 28.09	15 P 30.97	16 S 32.07	17 Cl 35.45	18 Ar 39.95
	19 K 39.10	20 Ca 40.08	21 Sc 44.96	22 Ti 47.87	23 V 50.94	24 Cr 52.00	25 Mn 54.94	26 Fe 55.85	27 Co 58.93	28 Ni 58.69	29 Cu 63.55	30 Zn 65.38	31 Ga 69.72	32 Ge 72.63	33 As 74.92	34 Se 78.97	35 Br 79.90	36 Kr 83.80
	37 Rb 85.47	38 Sr 87.62	39 Y 88.91	40 Zr 91.22	41 Nb 92.91	42 Mo 95.95	43 Tc -	44 Ru 101.1	45 Rh 102.9	46 Pd 106.4	47 Ag 107.9	48 Cd 112.4	49 In 114.8	50 Sn 118.7	51 Sb 121.8	52 Te 127.6	53 I 126.9	54 Xe 131.3
	55 Cs 132.9	56 Ba 137.3	57-71	72 Hf 178.5	73 Ta 180.9	74 W 183.8	75 Re 186.2	76 Os 190.2	77 Ir 192.2	78 Pt 195.1	79 Au 197.0	80 Hg 200.6	81 Tl 204.4	82 Pb 207.2	83 Bi 209.0	84 Po -	85 At -	86 Rn -
	87 Fr -	88 Ra -	89-103	104 Rf -	105 Db -	106 Sg -	107 Bh -	108 Hs -	109 Mt -	110 Ds -	111 Rg -	112 Cn -	113 Nh -	114 Fl -	115 Mc -	116 Lv -	117 Ts -	118 Og -

57 La 138.9	58 Ce 140.1	59 Pr 140.9	60 Nd 144.2	61 Pm -	62 Sm 150.4	63 Eu 152.0	64 Gd 157.3	65 Tb 158.9	66 Dy 162.5	67 Ho 164.9	68 Er 167.3	69 Tm 168.9	70 Yb 173.0	71 Lu 175.0
89 Ac -	90 Th 232.0	91 Pa 231.0	92 U 238.0	93 Np -	94 Pu -	95 Am -	96 Cm -	97 Bk -	98 Cf -	99 Es -	100 Fm -	101 Md -	102 No -	103 Lr -