

範例

考卷 卷別 A

※ 注意事項：請詳細閱讀

- 試卷依序含：(1)首頁一卷別資料、注意事項。
(2)試題 40 題—每題 2.5 分，不倒扣。
(3)元素週期表。
- 考試時間：18:00 ~ 19:30；截止入場時間 18:20；可離場時間 18:40。
- 作答前請先檢查考卷是否缺損或印刷不清等，如有上述情形請報告監考人員處理。
- 答案卡請使用 **2B 鉛筆** 作答。
- 答案卡請務必填寫科目、班級（按修課班級）、姓名、學號；務必劃記學號、卷別。
- 劃記注意事項如下。

注意一

- 請依照個人學號由上至下劃記。
- 每碼欄位只劃一記號。
- 學號為 8 碼者，第 9 碼請空白。

國立臺灣海洋大學 電腦閱卷答案卡

第 1 碼	0	1	2	3	4	5	6	7	8	9
第 2 碼	0	1	2	3	4	5	6	7	8	9
第 3 碼	0	1	2	3	4	5	6	7	8	9
第 4 碼	0	1	2	3	4	5	6	7	8	9
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第 6 碼	0	1	2	3	4	5	6	7	8	9
第 7 碼	0	1	2	3	4	5	6	7	8	9
第 8 碼	0	1	2	3	4	5	6	7	8	9
第 9 碼	0	1	2	3	4	5	6	7	8	9

科目： _____
班級： _____
姓名： _____
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卷別 A B C D E

劃記說明：
1.請使用2B鉛筆作答。
2.切勿使用立可白或其他修正液。

注意二

班級、姓名、學號一定要填寫

注意三

卷別一定要劃記

- 劃線要粗黑、清晰，不可出格，擦拭要清潔，若劃線過輕或污損不清，不為機器所接受，請考生自行負責。
- 違反答案卡劃寫規定者，扣 10 分。【新增規定】

1021_2nd Exam_1021113

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

- 1) Identify LiBr.
 - A) strong acid
 - B) nonelectrolyte
 - C) weak acid
 - D) weak electrolyte
 - E) strong electrolyte

- 2) Balance the chemical equation given below, and determine the number of milliliters of 0.00300 M phosphoric acid required to neutralize 45.00 mL of 0.00150 M calcium hydroxide.
$$\text{_____ Ca(OH)}_2(\text{aq}) + \text{_____ H}_3\text{PO}_4(\text{aq}) \rightarrow \text{_____ Ca}_3(\text{PO}_4)_2(\text{aq}) + \text{_____ H}_2\text{O}(\text{l})$$
 - A) 22.5 mL
 - B) 15.0 mL
 - C) 3.04 mL
 - D) 33.8 mL

- 3) Which of the following signs on q and w represent a system that is doing work on the surroundings, as well as gaining heat from the surroundings?
 - A) $q = -$, $w = +$
 - B) $q = +$, $w = +$
 - C) $q = +$, $w = -$
 - D) $q = -$, $w = -$
 - E) None of these represent the system referenced above.

- 4) What is the oxidation number of the chromium atom in K_2CrO_4 ?
 - A) +2
 - B) -2
 - C) +7
 - D) +6

- 5) The volume of a gas is inversely proportional to the pressure of a gas is known as
 - A) Ideal Gas Law
 - B) Avogadro's Law
 - C) Dalton's Law
 - D) Boyle's Law
 - E) Charles's Law

- 6) Give the **complete ionic equation** for the reaction (if any) that occurs when aqueous solutions of lithium sulfide and copper (II) nitrate are mixed.
 - A) $2 \text{Li}^+(\text{aq}) + \text{S}^{2-}(\text{aq}) + \text{Cu}^{2+}(\text{aq}) + 2 \text{NO}_3^-(\text{aq}) \rightarrow \text{CuS}(\text{s}) + 2 \text{Li}^+(\text{aq}) + 2 \text{NO}_3^-(\text{aq})$
 - B) $\text{Li}^+(\text{aq}) + \text{S}^-(\text{aq}) + \text{Cu}^+(\text{aq}) + \text{NO}_3^-(\text{aq}) \rightarrow \text{CuS}(\text{s}) + \text{LiNO}_3(\text{aq})$
 - C) $\text{Li}^+(\text{aq}) + \text{SO}_4^{2-}(\text{aq}) + \text{Cu}^+(\text{aq}) + \text{NO}_3^-(\text{aq}) \rightarrow \text{CuS}(\text{s}) + \text{Li}^+(\text{aq}) + \text{NO}_3^-(\text{aq})$
 - D) $2 \text{Li}^+(\text{aq}) + \text{S}^{2-}(\text{aq}) + \text{Cu}^{2+}(\text{aq}) + 2 \text{NO}_3^-(\text{aq}) \rightarrow \text{Cu}^{2+}(\text{aq}) + \text{S}^{2-}(\text{aq}) + 2 \text{LiNO}_3(\text{s})$
 - E) No reaction occurs.

- 37) When 5.00 mol of benzene is vaporized at a constant pressure of 1.00 atm and at its normal boiling point of 80.1°C, 169.5 kJ are absorbed and $P\Delta V$ for the vaporization process is equal to 14.5 kJ then
- A) $\Delta E = 169.5$ kJ and $\Delta H = 184.0$ kJ. B) $\Delta E = 184.0$ kJ and $\Delta H = 169.5$ kJ.
 C) $\Delta E = 169.5$ kJ and $\Delta H = 155.0$ kJ. D) $\Delta E = 155.0$ kJ and $\Delta H = 169.5$ kJ.
- 38) A 12.8 g sample of ethanol (C_2H_5OH) is burned in a bomb calorimeter with a heat capacity of 5.65 kJ/°C. Using the information below, determine the final temperature of the calorimeter if the initial temperature is 25.0°C. The molar mass of ethanol is 46.07 g/mol.
- $$C_2H_5OH(l) + 3 O_2(g) \rightarrow 2 CO_2(g) + 3 H_2O(g) \quad \Delta H^\circ_{rxn} = -1235 \text{ kJ}$$
- A) 60.7°C B) 28.1°C C) 111°C D) 85.7°C E) 74.2°C
- 39) A piece of iron (mass = 25.0 g) at 398 K is placed in a styrofoam coffee cup containing 25.0 mL of water at 298 K. Assuming that no heat is lost to the cup or the surroundings, what will the final temperature of the water be? The specific heat capacity of iron = 0.449 J/g°C and water = 4.18 J/g°C.
- A) 388 K B) 325 K C) 308 K D) 348 K E) 287 K
- 40) Pure acetic acid ($HC_2H_3O_2$) is a liquid and is known as glacial acetic acid. Calculate the molarity of a solution prepared by dissolving 10.00 mL of glacial acetic acid at 25°C in sufficient water to give 500.0 mL of solution. The density of glacial acetic acid at 25°C is 1.05 g/mL.
- A) 3.50×10^{-4} M
 B) 0.350 M
 C) 21.0 M
 D) 0.0210 M
 E) 1.26×10^3 M

The Periodic Table of the Elements

1 H Hydrogen 1.00794																	2 He Helium 4.003
3 Li Lithium 6.941	4 Be Beryllium 9.012182											5 B Boron 10.811	6 C Carbon 12.0107	7 N Nitrogen 14.00674	8 O Oxygen 15.9994	9 F Fluorine 18.9984032	10 Ne Neon 20.1797
11 Na Sodium 22.989770	12 Mg Magnesium 24.3050											13 Al Aluminum 26.981538	14 Si Silicon 28.0855	15 P Phosphorus 30.973761	16 S Sulfur 32.066	17 Cl Chlorine 35.4527	18 Ar Argon 39.948
19 K Potassium 39.0983	20 Ca Calcium 40.078	21 Sc Scandium 44.955910	22 Ti Titanium 47.867	23 V Vanadium 50.9415	24 Cr Chromium 51.9961	25 Mn Manganese 54.938049	26 Fe Iron 55.845	27 Co Cobalt 58.933200	28 Ni Nickel 58.6934	29 Cu Copper 63.546	30 Zn Zinc 65.39	31 Ga Gallium 69.723	32 Ge Germanium 72.61	33 As Arsenic 74.92160	34 Se Selenium 78.96	35 Br Bromine 79.904	36 Kr Krypton 83.80
37 Rb Rubidium 85.4678	38 Sr Strontium 87.62	39 Y Yttrium 88.90585	40 Zr Zirconium 91.224	41 Nb Niobium 92.90638	42 Mo Molybdenum 95.94	43 Tc Technetium (98)	44 Ru Ruthenium 101.07	45 Rh Rhodium 102.90550	46 Pd Palladium 106.42	47 Ag Silver 107.8682	48 Cd Cadmium 112.411	49 In Indium 114.818	50 Sn Tin 118.710	51 Sb Antimony 121.760	52 Te Tellurium 127.60	53 I Iodine 126.90447	54 Xe Xenon 131.29
55 Cs Cesium 132.90545	56 Ba Barium 137.327	57 La Lanthanum 138.9055	72 Hf Hafnium 178.49	73 Ta Tantalum 180.9479	74 W Tungsten 183.84	75 Re Rhenium 186.207	76 Os Osmium 190.23	77 Ir Iridium 192.217	78 Pt Platinum 195.078	79 Au Gold 196.96655	80 Hg Mercury 200.59	81 Tl Thallium 204.3833	82 Pb Lead 207.2	83 Bi Bismuth 208.98038	84 Po Polonium (209)	85 At Astatine (210)	86 Rn Radon (222)
87 Fr Francium (223)	88 Ra Radium (226)	89 Ac Actinium (227)	104 Rf Rutherfordium (261)	105 Db Dubnium (262)	106 Sg Seaborgium (263)	107 Bh Bohrium (262)	108 Hs Hassium (265)	109 Mt Meitnerium (266)	110 (269)	111 (272)	112 (277)	113	114				

58 Ce Cerium 140.116	59 Pr Praseodymium 140.90765	60 Nd Neodymium 144.24	61 Pm Promethium (145)	62 Sm Samarium 150.36	63 Eu Europium 151.964	64 Gd Gadolinium 157.25	65 Tb Terbium 158.92534	66 Dy Dysprosium 162.50	67 Ho Holmium 164.93032	68 Er Erbium 167.26	69 Tm Thulium 168.93421	70 Yb Ytterbium 173.04	71 Lu Lutetium 174.967
90 Th Thorium 232.0381	91 Pa Protactinium 231.03588	92 U Uranium 238.0289	93 Np Neptunium (237)	94 Pu Plutonium (244)	95 Am Americium (243)	96 Cm Curium (247)	97 Bk Berkelium (247)	98 Cf Californium (251)	99 Es Einsteinium (252)	100 Fm Fermium (257)	101 Md Mendelevium (258)	102 No Nobelium (259)	103 Lr Lawrencium (262)

國立臺灣海洋大學 電腦閱卷答案卡

學號
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↓ 注意題號，不要劃錯

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