



مدونة المناهج السعودية

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الموقع التعليمي لجميع المراحل الدراسية

في المملكة العربية السعودية



# Kuwait University

Office of the Vice President for Academic Affairs  
Measurement and Teaching Development Center

## Academic Aptitude Tests

Student Name

Version

A

Civil ID No.

### Instructions:

1. The aptitude tests consist of three tests.

<u>Test</u>	<u>Number of Questions</u>	<u>Time</u>
English	85	1 Hour
Mathematics	20 (No Calculator)	1 Hour
Chemistry	25	1 Hour

2. Mark all your answers on the **Answer Sheet** and in the proper section. On your answer sheet as shown below, using a pencil, darken the proper circle.



3. Verify all personal and test data on answer sheet and don't make any changes unless approved by the proctor.
4. Write down your name and Civil ID# on the test booklet.
5. Copy the test's version on your answer sheet.
6. Follow the proctor's instruction during the test.
7. During testing, be quiet and avoid any cheating situation.
8. Observe the allocated and the announced time for each test.

## Chemistry Test

### Atomic Mass:

Hydrogen (H) = 1.0  
Carbon (C) = 12.0  
Oxygen (O) = 16.0  
Sulfur (S) = 32.1

### Atomic Number:

Hydrogen (H) = 1  
Carbon (C) = 6  
Oxygen (O) = 8  
Phosphorous (P) = 15  
Chlorine (Cl) = 17  
Potassium (K) = 19  
Chromium (Cr) = 24  
Iron (Fe) = 26  
Bromine (Br) = 35

### Mass Number:

Bromine (Br) = 80

### Physical Constant:

Ion product constant for water ( $K_w$ ) at 25 °C =  $1.00 \times 10^{-14}$

1. Sublimation is the change of.....
- (a) Solid to gas (c) Gas to liquid  
(b) Solid to liquid (d) Liquid to gas
2. A cation is defined as:
- (a) an atom or group of atoms with a net negative charge  
(b) an atom or group of atoms with a net positive charge  
(c) a stable atom  
(d) a group of stable atoms
3. What is the chemical name of the compound  $(\text{Co}_2(\text{CrO}_4)_3)$ ?
- (a) Calcium dichromate (c) Calcium chromate  
(b) Potassium dichromate (d) Cobalt chromate
4. Carbonic acid  $(\text{H}_2\text{CO}_3)$  is considered as.....
- (a) Diprotic acid (c) Triprotic acid  
(b) Monoprotic acid (d) Hexaprotic acid
5. Which of the following reactions is a combustion reaction?
- (a)  $2\text{Al}(\text{s}) + 3\text{H}_2\text{SO}_4(\text{aq}) \longrightarrow \text{Al}_2(\text{SO}_4)_3(\text{aq}) + 3\text{H}_2(\text{g})$   
(b)  $\text{N}_2(\text{g}) + 3\text{H}_2(\text{g}) \longrightarrow 2\text{NH}_3(\text{g})$   
(c)  $2\text{C}_2\text{H}_6(\text{g}) + 7\text{O}_2(\text{g}) \longrightarrow 4\text{CO}_2(\text{g}) + 6\text{H}_2\text{O}(\text{l})$   
(d)  $\text{LiOH}(\text{aq}) + \text{HNO}_3(\text{aq}) \longrightarrow \text{LiNO}_3(\text{aq}) + \text{H}_2\text{O}(\text{l})$
6. Which of the following produces a basic solution when dissolved in water?
- (a)  $\text{NaCl}$  (c)  $\text{NO}_2(\text{g})$   
(b)  $\text{Ca}(\text{OH})_2$  (d)  $\text{HCl}(\text{g})$
7. What is the chemical formula of a compound made of  $\text{Ca}^{2+}$  and  $\text{Se}^{2-}$  ions?
- (a)  $\text{Ca}_2\text{Se}_3$  (c)  $\text{Ca}_3\text{Se}$   
(b)  $\text{Ca}_3\text{Se}_2$  (d)  $\text{CaSe}$
8. If the solubility of potassium nitrate  $(\text{KNO}_3)$  at  $20^\circ\text{C}$  is 30.0 g per 100 g of water, then, a solution which contains 25.0 g of potassium nitrate per 100 g water at the same temperature . will be .....
- (a) Unsaturated solution (c) Saturated solution  
(b) Supersaturated solution (d) Buffer solution

9. The chemical formula ( $\text{CH}_3\text{CH}_2\text{CHCH}_2$ ) represents an.....
- (a) alkane (c) alkene  
(b) alkyne (d) alcohol
10. Which of the following statements applies to strong acids?
- (a) Strong acids are incompletely ionized in water  
(b) Strong acids are completely ionized in water  
(c) Strong acids have bitter taste  
(d) Strong acids are poor conductors
11. When the following chemical reaction equation is balanced, the coefficients in the balanced equation are:
- $$\text{PCl}_3(\text{l}) + \text{H}_2\text{O}(\text{l}) \longrightarrow \text{H}_3\text{PO}_3(\text{aq}) + \text{HCl}(\text{aq})$$
- (a) 3:3:3:1 (c) 1:3:3:1  
(b) 1:3:1:3 (d) 1:1:1:3
12. What is the molar solubility of a saturated solution of silver iodide ( $\text{AgI}(\text{s})$ ) if the solubility product constant ( $K_{\text{sp}}$ ) for ( $\text{AgI}$ ) is equal to  $8.51 \times 10^{-17}$ ?
- $$\text{AgI}(\text{s}) \rightleftharpoons \text{Ag}^+(\text{aq}) + \text{I}^-(\text{aq})$$
- (a)  $7.24 \times 10^{-34}$  mole/liter (c)  $8.51 \times 10^{-17}$  mole/liter  
(b)  $2.92 \times 10^{-9}$  mole/liter (d)  $9.22 \times 10^{-9}$  mole/liter
13. Which of the following is the correct set of oxidation numbers of all three elements present in potassium dichromate ( $\text{K}_2\text{Cr}_2\text{O}_7$ ) according to the order of the elements as shown in the chemical formula?
- (a) +1, +6, -2 (c) +2, +12, -14  
(b) +1, +3, -1 (d) +2, +6, -14
14. Which of the following compounds is an ionic compound?
- (a)  $\text{H}_2$  (c)  $\text{KCl}$   
(b)  $\text{H}_2\text{O}$  (d)  $\text{CH}_4$
15. Which of the following organic compounds is an aromatic compound?
- (a)  $\text{C}_2\text{H}_2$  (c)  $\text{C}_5\text{H}_{12}$   
(b)  $\text{C}_6\text{H}_{12}$  (d)  $\text{C}_6\text{H}_5\text{CH}_3$

16. A buffer solution composed of a weak acid and its conjugate base or a weak base and its conjugate acid resists change in .....
- (a) pH (c)  $pK_c$   
 (b)  $pK_w$  (d)  $pCl$
17. For the following equilibrium system, the expression of the equilibrium constant ( $K_c$ ) is:
- $$2Cr(s) + 3H_2SO_4(aq) \rightleftharpoons Cr_2(SO_4)_3(aq) + 3H_2(g)$$
- (a)  $K_c = [Cr] [H_2SO_4]^3 / [Cr_2(SO_4)_3] [H_2]^3$  (c)  $K_c = 1 / [Cr_2(SO_4)_3] [H_2]^3$   
 (b)  $K_c = [Cr_2(SO_4)_3] [H_2]^3 / [H_2SO_4]^3$  (d)  $K_c = [Cr_2(SO_4)_3] [H_2]^3 / [Cr] [H_2SO_4]^3$
18. A piece of metal with a mass of 81.4 g was placed in a graduated cylinder that contained 35.0 cm<sup>3</sup> of water, raising the volume to 47.5 cm<sup>3</sup>. What is the density of the metal?
- (a) 0.154 g/cm<sup>3</sup> (c) 2.68 g/cm<sup>3</sup>  
 (b) 0.592 g/cm<sup>3</sup> (d) 6.51 g/cm<sup>3</sup>
19. How many protons and electrons are present in the bromide ion (Br<sup>-</sup>)?
- (a) 35 protons and 36 electrons (c) 35 protons and 34 electrons  
 (b) 35 protons and 35 electrons (d) 80 protons and 34 electrons
20. What is the volume of 0.10 M silver nitrate solution (AgNO<sub>3</sub>(aq)) needed for complete reaction with 1.75 mmole of sodium chloride solution (NaCl(aq))?
- (a) 25.0 cm<sup>3</sup> (c) 5.17 cm<sup>3</sup>  
 (b) 17.5 cm<sup>3</sup> (d) 0.175 cm<sup>3</sup>
21. If the pH of tomato juice is 4.50, then the hydroxide ion concentration [OH<sup>-</sup>] of the juice is:
- (a)  $3.16 \times 10^{-5}$  mole/liter (c)  $3.16 \times 10^{-9}$  mole/liter  
 (b)  $1.00 \times 10^{-14}$  mole/liter (d)  $1.00 \times 10^{-7}$  mole/liter
22. The molar mass of fructose sugar (C<sub>12</sub>H<sub>22</sub>O<sub>11</sub>) is .....
- (a) 342.0 g/mole (c) 298.0 g/mole  
 (b) 420.0 g/mole (d) 266.0 g/mole
23. Which of the following ions has the largest number of unpaired electrons in the last subshell?
- (a) P<sup>3-</sup> (c) Fe<sup>3+</sup>  
 (b) Cr<sup>3+</sup> (d) O<sup>2-</sup>



اختبارات القدرات الأكاديمية  
ورقة الإجابة

113 مسلسل القاعة

قاعة الاختبار

قاعة رقم 20 مبنى 11 خ - كلية العلوم

اسم الطالب

اسم الطالب

281000100001 الرقم المدني

206115000 الرقم الجامعي

3-Exam مواد الاختبار  
الانجليزي ورياضيات وكيمياء

تاريخ الاختبار السبت الموافق 3 - يوليو - 2010

إصدار الامتحان  
Exam's Version

- Version A نموذج أ  
 Version B نموذج ب  
 Version C نموذج ج  
 Version D نموذج د

الحضور  
Attendance

- Present حاضر  
 Absent غائب

التشعب  
Track

- Science علمي  
 Art ادبي

صف الطالب  
Student Grade

- Grade 11 الصف 11  
 Grade 12 الصف 12

Required exams

الاختبارات المطلوبة

- English+Math.+Chem. انجليزي + رياضيات + كيمياء  
 English+Mathematics انجليزي + رياضيات  
 English+Chemistry انجليزي + كيمياء  
 Mathematics+Chemistry رياضيات + كيمياء  
 English only انجليزي فقط  
 Mathematics only رياضيات فقط  
 Chemistry only كيمياء فقط

إرشادات مهمة

USE A No. 2 PENCIL

- 1- استخدم القلم الرصاص فقط في تعبئة ورقة الاختبار ولا تملأ.
- 2- قلب الدائرة العنقودية خلفها تماما وامن في الاسفل.
- 3- لا تلمس بيديك من لينة تعبئة او دائرة عند السحب.
- 4- عند تعبئة الدائرة يرامى عدم الخروج عن حدود الدائرة.



تضليل صحيح ●

تضليل خطأ ⊗ ⊙ ⊖ ⊕



Answers - English Exam		إجابات اختبار اللغة الانجليزية							
Q's#	Answers	Q's#	Answers	Q's#	Answers	Q's#	Answers	Q's#	Answers
1 -	A B C D E	19 -	A B C D E	37 -	A B C D E	55 -	A B C D E	73 -	A B C D E
2 -	A B C D E	20 -	A B C D E	38 -	A B C D E	56 -	A B C D E	74 -	A B C D E
3 -	A B C D E	21 -	A B C D E	39 -	A B C D E	57 -	A B C D E	75 -	A B C D E
4 -	A B C D E	22 -	A B C D E	40 -	A B C D E	58 -	A B C D E	76 -	A B C D E
5 -	A B C D E	23 -	A B C D E	41 -	A B C D E	59 -	A B C D E	77 -	A B C D E
6 -	A B C D E	24 -	A B C D E	42 -	A B C D E	60 -	A B C D E	78 -	A B C D E
7 -	A B C D E	25 -	A B C D E	43 -	A B C D E	61 -	A B C D E	79 -	A B C D E
8 -	A B C D E	26 -	A B C D E	44 -	A B C D E	62 -	A B C D E	80 -	A B C D E
9 -	A B C D E	27 -	A B C D E	45 -	A B C D E	63 -	A B C D E	81 -	A B C D E
10 -	A B C D E	28 -	A B C D E	46 -	A B C D E	64 -	A B C D E	82 -	A B C D E
11 -	A B C D E	29 -	A B C D E	47 -	A B C D E	65 -	A B C D E	83 -	A B C D E
12 -	A B C D E	30 -	A B C D E	48 -	A B C D E	66 -	A B C D E	84 -	A B C D E
13 -	A B C D E	31 -	A B C D E	49 -	A B C D E	67 -	A B C D E	85 -	A B C D E
14 -	A B C D E	32 -	A B C D E	50 -	A B C D E	68 -	A B C D E		
15 -	A B C D E	33 -	A B C D E	51 -	A B C D E	69 -	A B C D E		
16 -	A B C D E	34 -	A B C D E	52 -	A B C D E	70 -	A B C D E		
17 -	A B C D E	35 -	A B C D E	53 -	A B C D E	71 -	A B C D E		
18 -	A B C D E	36 -	A B C D E	54 -	A B C D E	72 -	A B C D E		

Answers - Mathematics Exam		إجابات اختبار الرياضيات							
Q's#	Answers	Q's#	Answers	Q's#	Answers	Q's#	Answers	Q's#	Answers
1 -	A B C D E	6 -	A B C D E	11 -	A B C D E	16 -	A B C D E		
2 -	A B C D E	7 -	A B C D E	12 -	A B C D E	17 -	A B C D E		
3 -	A B C D E	8 -	A B C D E	13 -	A B C D E	18 -	A B C D E		
4 -	A B C D E	9 -	A B C D E	14 -	A B C D E	19 -	A B C D E		
5 -	A B C D E	10 -	A B C D E	15 -	A B C D E	20 -	A B C D E		

Answers - Chemistry Exam		إجابات اختبار الكيمياء							
Q's#	Answers	Q's#	Answers	Q's#	Answers	Q's#	Answers	Q's#	Answers
1 -	● B C D E	6 -	A ● C D E	11 -	A ● C D E	16 -	● B C D E	21 -	A B ● D E
2 -	A ● C D E	7 -	A B C ● E	12 -	A B C ● E	17 -	A ● C D E	22 -	● B C D E
3 -	A B C ● E	8 -	● B C D E	13 -	● B C D E	18 -	A B C ● E	23 -	A B ● D E
4 -	● B C D E	9 -	A B ● D E	14 -	A B ● D E	19 -	● B C D E	24 -	A B ● D E
5 -	A B ● D E	10 -	A ● C D E	15 -	A B D ● E	20 -	A ● C D E	25 -	A B C ● E