

**امتحان تجريبي شهادة إتمام الدراسة الثانوية العامة**

**المادة : الكيمياء**

التاريخ : / / ٢٠١

**زمن الإجابة : ثلاث ساعات**

## نموذج ثانوية عامة



عدد أوراق الإجابة (١٣) ورقة  
بخلاف الغلاف  
وعلى الطالب مسؤولية المراجعة  
والتأكد من ذلك قبل تسليم الكراسة

### مجموع الدرجات


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رقم المراقبة

مجموع الدرجات بالحروف :

إمضاءات المراجعين :

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وزارة التربية والتعليم

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## نموذج ثانوية عامة

اسم الطالب ( رابعيًا ) /

### المدرسة:

رقم الجلوس:

الإشارة :

الحفاظة :

-9-

-2-

توقيع الملاحظين بصحة البيانات :  
ومطابقة عدد أوراق كراسة الإجابة  
عند استلامها من الطالب .

### تعليمات هامة:

عزيزي الطالب:

1. اقرأ السؤال بعناية، وفكر فيه جيداً قبل البدء في إجابته.
2. أجب عن جميع الأسئلة ولا تترك أى سؤال دون إجابة.
3. عند إجابتك للأسئلة للمقالية، أجب فيما لايزيد عن المساحة المحددة لكل سؤال.

مثال :

.....
.....
.....

4. عند إجابتك عن أسئلة الاختيار من متعدد إن وجدت:  
ظلل الدائرة ذات الرمز الدال على الإجابة الصحيحة تظليلاً كاملاً لكل سؤال .

مثال : الإجابة الصحيحة (ج) مثلاً

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<input type="radio"/>	ب
<input checked="" type="radio"/>	ج
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- في حالة ما إذا أجبت إجابة خطأ، ثم قمت بالشطب وأجبت إجابة صحيحة تحسب الإجابة صحيحة.
- وفي حالة ما إذا أجبت إجابة صحيحة، ثم قمت بالشطب وأجبت إجابة خطأ تحسب الإجابة خطأ.
- في حالة التظليل علي أكثر من رمز، تعتبر الإجابة خطأ.

ملحوظة: لا تكرر الإجابة عن الأسئلة الموضوعية (الاختبار من متعدد) ،

فلن تقدر إلا الإجابة الأولى فقط .

5. عدد أسئلة الكتيب ( 60 ) سؤالاً .
6. عدد صفحات الكتيب ( 28 ) صفحة خلاف الغلاف.
7. تأكد من ترقيم الأسئلة تصاعدياً، ومن عدد صفحات كتيبك، فهي مسئوليتك.
8. زمن الاختبار ( 3 ) ساعات .
9. الدرجة الكلية للاختبار ( 60 ) درجة .

**Answer the Following Questions:**

**Questions ( 1: 10) :Write the scientific concept for each of the following**

مجرد مثال وليس إلزاماً أن يبدأ الإمتحان بالمفهوم العلمى وليس إلزاماً أن يكون عددهم ثلاث فقط

**1. The amount of electricity needed to precipitate 1.118 mg silver**

.....

**2. The element which its atom contains incomplete sublevel (d) either in normal state or oxidation state.**

.....

**3. The substance which use in industry to increase the rate of chemical reaction**

.....

**4. The solution that its concentration is accurately known.**

.....

**5. The type of alloy which formed from gold and copper**

.....

**6. The mono basic and saturated carboxylic acids.**

.....

**7. The masses of different materials formed or consumed by the same amount of electricity are directly proportional to their equivalent masses**

.....

**8. The phenomenon of presence many organic compounds that have the same molecular formula but different structural formula.**

.....

**9. The product of multiplying the concentrations of  $[H^+]$  and  $[OH^-]$  ions of water**

.....

**10. The equilibrium arising between a weak electrolyte molecules and the ions resulting from it in the solution.**

.....

**Questions ( 11: 30 ) :choose the correct answer for each of the following**

**11. The precipitation reactions are .....reactions**

- A) incomplete
- B) reversible
- C) oxidation - reduction
- D) irreversible

**12. The reducing agent in medrix furnace is .....**

- A) carbon mono oxide
- B) carbon di oxide
- C) hydrogen gas
- D) A and B

**13. The compound  $\text{Fe}_3\text{C}$  found in .....**

- A) interstitial alloy
- B) substitution alloy
- C) inter metallic alloy
- D) none of the previous.

**14. A process of converted the fine particles of the iron ore to large particles to be easily reduced**

- A) Sintering process
- B) Crushing process
- C) roasting process
- D) purifying process

**15. The gas which turbid lime water evolved when HCl is added to ....**

- A) oxalate salts only
- B) carbonate salts only
- C) bicarbonate salts only
- D) carbonate and bi carbonate salts

**16. Barium phosphate salt is insoluble in**

- A) diluted hydrochloric acid
- B) water
- C) A and B
- D) none of the previous.

**17. Potassium permanganate is used as ....**

- A) antiseptic agent
- B) catalyst
- C) oxidation agent
- D) A and C

**18. The metal that used in lamp which produce strong light**

- A) iron
- B) titanium
- C) scandium
- D) vanadium

**19. Titration process is used to .....**

- A) determine the concentration of an acid
- B) determine PH value
- C) determine the concentration of a base e
- D) A and C

**20. On adding (conc) sulphuric acid to ..... solid salt, a gas that form white fumes with ammonia solution evolved.**

- A) sodium carbonate
- B) sodium bicarbonate
- C) sodium chloride
- D) sodium nitrate

**21. Adding ammonium hydroxide to .....form reddish brown p.p.t**

- A) iron (III) hydroxide
- B) iron(II) hydroxide
- C) iron (III) chloride
- D) iron (II) chloride

**22. Aspirin is one of ...**

- A) alcohols
- B) esters
- C) carboxylic acids
- D) amines

**23. Reaction of aromatic benzene with alkyl halide in presence of catalyst called ..... reaction**

- A) friedel – craft's
- B) Wohler's
- C) Baeyer's
- D) Berzelius'

**24. Hydrolysis of aspirin produce .....**

- A) benzoic acid and acetic acid
- B) salicylic acid and acetic acid
- C) benzoic acid and salicylic acid
- D) benzoic acid and citric acid

**25. One mole of ozone gas occupies ..... at (S.T.P)**

- A) 22.4 liter
- B) 67.2 liter
- C) 11.2 liter
- D) 1 liter

**26. 0.1 mole of  $C_6H_{12}O_6$  contains .....of carbon atoms**

- A)  $3.612 \times 10^{23}$
- B)  $3.01 \times 10^{23}$
- C)  $6.02 \times 10^{23}$
- D)  $36.12 \times 10^{23}$



27. ....established a law expressing the relationship between the rate of chemical reaction and concentration of reactants

- A) Le chatelier
- B) waage and guldberg
- C) wohler
- D) ostwald`

28. The electromotive force of a galvanic cell = .....

- A) oxidation potential + reduction potential
- B) oxidation potential - reduction potential
- C) oxidation potential  $\div$  reduction potential
- D) oxidation potential  $\times$  reduction potential

29. In the mono basic weak acid solution the  $[H^+]$  = .....

- A) the original concentration of acid
- B)  $\sqrt{C \cdot K}$
- C)  $\sqrt{C + K}$
- D)  $\sqrt{C \div K}$

30. Acetamide produced from ammonolysis of .....

- A) ethyl acetate
- B) methyl acetate
- C) ethyl benzoate
- D) methyl benzoate

Calculate each of the following (31 -40)

**31. Density of carbon dioxide gas at (S.T.P) , C =12 , O = 16**

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.....

**32. Concentration of 30 ml, sodium hydroxide solution that was titrated with 15 ml, 0.2 molar sulphuric acid .**

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.....

**33. Amount of electricity that consumed to obtain molar mass of silver from electrolyte solution which contains ( Ag<sup>+</sup>), and write the balanced equation that represent the reduction reaction on the cathode**

.....  
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.....

**34. Electro motive force of a cell consists of an anode with oxidation potential = 0.66 volts, and a cathode with oxidation potential = 0.99 volts,**

.....  
.....

**35. Percentage copper sulphate in impure sample , if 9.3 gm of copper ( II) sulphide is precipitated, when excess amount of sodium sulphide solution is added to the solution that contains 18.5 of impure copper sulphate ( Cu= 63.5, O=16, S=32)**

.....

.....

36. PH value of a solution of week base , providing that the molarity = 0.5 M ,  $K_b = 1.5 \times 10^{-7}$

.....

.....

.....

37. Degree of solubility of  $A_2B$  salt which is insoluble in water, knowing that the  $K_{sp} = 2.7 \times 10^{-8}$  (at  $25^\circ C$ ) ,  $A_2B \rightleftharpoons 2A^+ + B^-$

.....

.....

38. Infer the molecular formula of melanterite  $FeSO_4.xH_2O$ , if you know that a 5.004 gram sample of the salt was strongly heated and the mass after heating was 2.736 gram ( Fe= 56, O=16, S=32 , H=1 )

.....

.....

39. Structural formula of one of the alkynes with molecular mass = 40 ( C = 12 , H= 1)

.....

.....

40. Structural formula of one of the alkenes that consists of nine carbon and hydrogen atoms

.....

.....

Give a reason for each of the following (41 -44)

41. The violet color of acidified potassium permanganate is disappeared when it is added to ethanol , and the color remains on adding it to 2-methyl -2- propanol

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42. PH of the sodium carbonate solution higher than 7

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43. When iron metal reacts with chlorine gas  $\text{FeCl}_2$  will not be formed

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.....

44. Kc value increases in the exothermic reactions by cooling

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.....

45. How can you obtain aromatic benzene from methane gas

.....  
.....

46. Write the structure formula of  
Di phenyl - citric acid -

.....  
.....

**47. How can you differentiate between phenol and sodium hydroxide**  
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.....

**48. Mention the use of**

- Black carbon
- Formic acid
- Nickel
- Standard hydrogen electrode

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**49. Explain a practical experiment to illustrate the effect of temperature on the equilibrium**  
.....  
.....

**50. Compare between the reducing agent in the blast furnace and midrex furnace**  
.....  
.....

**51. How can you obtain  $\text{FeCl}_2$  from iron (II) oxalate**

.....

.....

**52. In the next reaction  $2\text{SO}_{2(g)} + \text{O}_{2(g)} \rightarrow 2\text{SO}_{3(g)}$ ,  $\Delta H = (-)$**

**List two factors that increase amount of sulphur tri oxide**

.....

.....

**53. Recite the rule of law of mass action**

.....

.....

**54. How can you differentiate between aluminum chloride and iron (III) chloride**

.....

.....

**55. How can you obtain picric acid from carbolic acid**

.....

.....

**56. Show by balanced chemical equation the effect of heat on**

- Ethanol at  $180^{\circ}\text{C}$
- Iron (II)sulphate

.....

.....

**57. Recite faraday second law**

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.....

**58. Show by balanced chemical equation the total reaction in the car battery to produce electricity**

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**59. Define :**

- Ampere
- indicator
- activation energy

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.....

**60. Practically how can you identify presence of calcium ion without using any solutions.**

.....  
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