

الإجابة النموذجية وسلم التنقيط لامتحان شهادة البكالوريا دورة 2009  
المادة : رياضيات الشعبة : تقني رياضي

الإجابة النموذجية وسلم التنقيط

معايير الموضوع	عناصر الإجابة	العلامة
مجزأة	المجموع	
الموضوع الثاني		
التمرين الأول: (04 نقط)		
0,25x3	1. حلا المعادلة: $z_2 = 3 + 3i, z_1 = 3 - 3i, \Delta = (6i)^2$	0,25x3
0,5	2. $z_1 = 3\sqrt{2}e^{-i\frac{\pi}{4}}$ (أ)	0,5
0,5x2	(ب) $Arg(z_3) = \frac{\pi}{3},  z_3  = \sqrt{2}$	0,5x2
0,25x2	$\sin \frac{\pi}{12} = \frac{\sqrt{6}-\sqrt{2}}{4}, \cos \frac{\pi}{12} = \frac{\sqrt{6}+\sqrt{2}}{4}$	0,25x2
0,25	3. (أ) $\alpha \in \mathbb{R}^*$	0,25
0,25	(ب) $G_\alpha \left( \frac{\sqrt{2}}{2}, \frac{\alpha\sqrt{6}+12}{2\alpha} \right)$	0,25
0,75	مجموعة النقط $G_\alpha$ هي المستقيم ذي المعادلة $x = \frac{\sqrt{2}}{2}$ ما عدا النقط $D \left( \frac{\sqrt{2}}{2}, \frac{\sqrt{6}}{2} \right)$	0,75
04		
التمرين الثاني: (05 نقط)		
1	1. المجموعة المعطاة مميزة بالمعادلة: $2x + y + 4z = 0$ وهي مستو $p$	1
0,25x2	الشعاع الناقص على $p$ هو $\vec{n} \left( \begin{smallmatrix} 2 \\ 1 \\ 4 \end{smallmatrix} \right)$ و $\vec{AB}(-2; -1; -4)$	0,25x2
0,25x2	بالحساب نجد $\vec{AB} = -\vec{n}$ ومنه $p$ عمودي على $(AB)$	0,25x2
0,5	2. معادلة $S$ هي $(x-1)^2 + (y-1)^2 + (z-1)^2 = 9$	0,5
0,25x2	منه $S$ سطح كرة مركزها $\Omega(1,1,1)$ ونصف قطرها $R = 3$	0,25x2
0,5	3. (أ) $G(1,1,-2)$	0,5
0,5	لأن إحداثيات $G$ تحقق معادلة $S$	0,5
05		

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الموضوع الأول		
التمرين الأول: (04 نقط)		
04	1. (أ) $z_2 = 1 - i, z_1 = 1 + i, \Delta' = i^2$	1
1	(ب) $z'' = -2 + i, z' = -2 - i$	1
1	2. (أ) $(\Gamma)$ هي نصف المستقيم الذي مبدؤه $A$ و شعاع توجيهه $\vec{v}$ يحقق $(\vec{i}, \vec{v}) = \frac{5\pi}{4}$	1
1	(ب) $(E)$ هي محور قطعة المستقيم $[AB]$	1
التمرين الثاني: (04 نقط)		
0,5	1. $41 \times 2009 = 49 \times 41 \times 2009$ الأعداد الطبيعية التي مربع كل منها يقسم 2009 هي 7 أو 49	0,5
0,5	ب- حساب $a; u_0$	0,5
0,75	$u_0^2 + a^2 + u_0 + 35a^2 = 2009$	0,75
0,25	ومنه $a = 7$ أو $a = 1$ مرفوض $a = 1$	0,25
0,75	2. $a = 7; u_0 = 2$	0,75
0,75	3. عبارة $u_n$ بدلالة العدد $n$	0,75
0,5	ب- $n = 3$	0,5
التمرين الثالث: (07 نقاط)		
0,5+0,5	1. $f(x) + f(-x) = 2$ و $f(0) = 1$ مركز تناظر	0,5+0,5

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الموضوع الثاني		
0,5x2	ب- لتكن $M$ نقطة من المستوي $Q$ الذي يمر سطح الكرة $S$ في النقط $G$	0,5x2
0,25	التمرين الثالث: (07 نقط)	0,25
0,25x3	(أ) $\lim_{x \rightarrow +\infty} g(x) = +\infty$	0,25x3
0,25	(ب) $g'(x) > 0$ و $g'(x) = 2 - \frac{1}{x}$ منه $g$ متزايدة تماماً على $[1; +\infty[$	0,25
0,25	(ج) لدينا $\lim_{x \rightarrow +\infty} g(x) = +\infty$ و $g(1) = 2$ و $g$ متزايدة تماماً على $[1; +\infty[$ إذن	0,25
0,25	$g(x) \geq 2$ و هـ م	0,25
0,5	2. كتابة على الشكل $f(x) = \frac{6 \ln x}{2 + \frac{\ln x}{x}}$	0,5
0,5+0,25	(ب) $\lim_{x \rightarrow +\infty} f(x) = 0$ نستنتج وجود مستقيم مقارب للمنحنى معادلته $y = 0$	0,5+0,25
0,5	(ج) $f'(x) = \frac{12 - 12 \ln x}{(2x + \ln x)^2}$	0,5
0,25	$f'(x) \geq 0$ على المجال $[1; e]$ منه $f$ متزايدة تماماً على $[1; e]$	0,25
0,25	$f'(x) < 0$ على المجال $[e; +\infty[$ منه $f$ متناقصة تماماً على $[e; +\infty[$	0,25
0,5	(د) جدول التغيرات	0,5
0,5	أقل المعادلة $f(x) = k$ حلتين متمايزتين إذا وفقط إذا كان $k \in ]f'(e); f'(1)[$	0,5
0,5	(هـ) معادلة $(\Delta_1)$	0,5
0,5	3- أ- جدول تغيراتها الدالة $h$ :	0,5
0,5	ب- معادلة المماس $(\Delta_2)$	0,5
0,5	ج- رسم $(\Delta_1), (\Delta_2), (C_f)$ و $(C_h)$	0,5
01		01
التمرين الرابع: (04 نقط)		
0,5	حل المعادلة في $y = k e^{x \ln 2}$	0,5
0,5	1. عبارة $f(x) = e^{x \ln 2}$	0,5
0,25x3	(أ) $2^{3k-2} = 4[7], 2^{3k+1} = 2[7], 2^{3k} = 1[7]$	0,25x3
0,75	(ب) $f(2009) - 4 \equiv 0[7]$	0,75
0,75	(أ) $S_n = 2^{n-1} - 1$	0,75
0,25-0,5	(ب) $S_n \equiv 0[7]$ تكافئ $2^{n-1} \equiv 1[7]$ ومنه $n = 3k + 2$	0,25-0,5
04		

معايير الموضوع	عناصر الإجابة	العلامة
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الموضوع الأول		
2) تغيرات الدالة:		
0,5+0,25	حساب النهاية و $f'(x) = \frac{e^{2x} + 1}{(e^x + 1)^2}$	0,5+0,25
0,25+0,5	جدول التغيرات وإشارة المشتق	0,25+0,5
0,5	3) تبين أن المستقيم الذي معادلته $y = x$ مقارب عند $+\infty$	0,5
0,5	حساب واستنتاج المستقيم المقارب عند $-\infty$	0,5
0,25x4	4) تبين أن المعادلة $f(x) = 0$ حل وحيد $-1.6 < \alpha < -1.7$	0,25x4
0,5	استعمال مبرهنه القيم المتوسطة	0,5
0,5	5) رسم المنحنى	0,5
0,5	6) تبين أن $f(x) = x + \frac{2e^{-x}}{e^{-x} + 1}$	0,5
0,5+0,25	7) حساب المساحة: $A(\alpha) = \int_0^\alpha (y - f(x)) dx = [2x + 2 \ln(e^{-x} + 1)]_0^\alpha$	0,5+0,25
0,5	$A(\alpha) = 2[\ln 2 - \ln(e^{-\alpha} + 1)] = 2 \ln(-\alpha)$	0,5
0,25	حصر العدد $A(\alpha)$	0,25
التمرين الرابع: (05 نقط)		
0,25x2+0,5	1. $A_1; C_1$ مع التعليل	0,25x2+0,5
4x0,25	2. $A_2$ مع التعليل (تعيين شعاع توجيه $(\Delta)$ )	4x0,25
2x0,25+0,5	3. $C_2$ مع التعليل $2t - 1 + 3(-t + 2) + t + 1 = 0$ و $\vec{n} \perp \vec{u}$ (متسوية الحل)	2x0,25+0,5
1	4. $C_4$ مع التعليل	1
0,5x2	5. باستعمال المسافة بين نقطة ومستوى	0,5x2
0,5x2	كل الإجابات صحيحة	0,5x2
05		

PART ONE: Reading

(14 points)

*Read the text carefully then do the activities below.*  
Education in the United States is provided mainly by the government with control and funding from three levels: federal, state, and local. School attendance is obligatory at the elementary and high school levels (often known outside the United States as the primary and secondary levels).  
The ages for compulsory education vary by state, beginning at ages five to eight and ending at the ages of fourteen to eighteen. A growing number of states are now requiring school attendance until the age of 18. Students have the options of having their education held in public schools, private schools, or home school.  
In most public and private schools, education is divided into three levels: elementary school, junior high school (also often called middle school), and senior high school. Post secondary education is better known as 'college' or 'university' in the United States.  
Most parents send their children to either a public or private institution. One tenth of students are enrolled in private schools. Approximately 85 % of students enter the public schools largely because they are free.  
Parents may also choose to educate their own children at home; 1.7 % of children are educated in this manner.

<http://www.encyclopedia.com/doc/1E1-Educatio.html>.  
(7points)

- A) Comprehension**
- 1-Circle the letter that corresponds to the right answer.**  
The text is....  
a. a newspaper article      b. a radio report      c. a web-article
- 2-Are the following statements true or false? Write T or F next to the corresponding sentence letter.**  
a) Education in the USA is compulsory only at the elementary school.  
b) Parents can educate their children at home.  
c) There are more pupils in private schools than in public schools.  
d) Most of the pupils go to public schools because they don't have to pay fees.
- 3-In which paragraph is it mentioned that...**  
a) the ages of compulsory education are not the same in all states?  
b) very few parents educate their children at home?
- 4-Answer the following questions according to the text.**  
a) At which levels is school attendance obligatory?  
b) Why do many American pupils choose public schools?
- 5-What or who do the underlined words refer to in the text?**  
a. their (§2)      b. they (§4)

**B) Text Exploration** (7points)

- 1-Find in the text words, phrases or expressions that are closest in meaning to:**  
a. obligatory (§2)    b. increasing (§2)    c. nearly (§4)    d. way (§5)

**2-Complete the chart as shown in the example.**

NOUNS	VERBS
Satisfaction	To satisfy
Requirement	.....
Division	.....
Qualification	.....
Education	.....

- 3-Give the correct form of the verbs in brackets.**  
a) Years ago, it (be) difficult for people to send their children to school.  
b) Some children (get) better results if their parents take care of them.

- 4-Underline the silent letters in the flowing words.**  
a. eight    b knowledge    c. foreign    d. calm

**5- Imagine what A says and complete the following dialogue.**

A: Many students ..... Is it true?  
B: No, our school regulations are not very strict.  
A: This means that .....  
B: You're wrong, there is no disorder at all; everybody is behaving correctly.  
A: What about .....?  
B: There is a mutual respect between teachers and pupils.  
A: That's why .....  
B: True, the pupils get good results.

**PART TWO: Written Expression** (6points)

*Write a composition of about 100 words on one of the following topics.*

Choose either

**Topic one:** The Algerian educational system consists of three levels (primary, middle and secondary). You have just completed the third level. Write a composition in which you describe the level you liked best. You may talk about the following: souvenirs — friends — teachers — programmes — exams — happy/sad events...

Or

**Topic two:** Your neighbour refuses to send his children to school for some reasons.You try to convince him that education is important in today's world.Write the dialogue that took place between him and you.

وزارة التربية الوطنية  
امتحان بكالوريا التعليم الثانوي  
الشعبة: لغات أجنبية  
اختبار في مادة: اللغة الإنجليزية  
المدة: 3 ساعات ونصف

**الموضوع الأول**  
**PART ONE: Reading** (14 points)

*Read the text carefully then do the activities below.*

Counterfeit medicines are a threat to health, and the risks they pose have been largely underestimated. Counterfeits containing no active ingredient will fail to cure disease; those with wrong ingredients may cause mental and physical damage—and even death. No area of the world is unaffected, as exposed by the recent deaths in the United States.  
Growing evidence shows that the problem is disproportionately severe in developing and emerging-market countries, which also have the highest burden of infectious diseases. National governments have the primary responsibility— both in stopping criminal manufacturing and distribution and in protecting their citizens from counterfeit products. The Food & Drug Administration (FDA) is highly active in fulfilling this responsibility, but this is not true in many other countries in the world.  
Multilateral organizations such as the World Health Organization (WHO), the World Customs Organization (WCO), and the International Criminal Police Organization (Interpol) must do more to expose the problem and help countries tighten regulatory controls.  
Companies affected by counterfeiting in developing countries are expending private resources to perform roles which should be carried out by police and regulators, including assisting multilateral organizations in building capacity among local customs and regulatory officials.

**A) Comprehension** (7points)

- 1-Circle the letter that corresponds to the right answer.**  
The text is about.....  
a. fake medicines      b. medicines      c. healthcare
- 2-Are the following statements true or false? Write "T "or "F" next to the corresponding sentence letter.**  
a) The risks of counterfeit medicines are seriously taken into consideration.  
b) Developing countries are suffering a lot from infectious diseases.  
c) Governments should protect people from counterfeit products.  
d) The WHO, WCO, and Interpol efforts are insufficient.
- 3-Answer the following questions according to the text.**  
a) Why can't some counterfeit medicines cure diseases?  
b) What can wrong ingredients cause?  
c) What must multilateral organizations do?
- 4-Reorder the following ideas according to the text.**  
a) Governments should protect people from counterfeit medicines.  
b) Counterfeit medicines are not only inefficient but dangerous as well.  
c) International organizations have to make more efforts.

- 5-Choose a title for the reading text.**  
a) International Cooperation      b) Medical Business      c) Counterfeit Medicines

**B) Text Exploration** (7points)

- 1-Find in the text words, phrases or expressions that are closest in meaning to the following:**  
a-fake (§1)      b-illnesses (§2)      c-show (§3)      d-helping (§4)

**2-Complete the chart as shown in the example.**

Verb	Adjective	Noun
To manufacture	manufactured	manufacturer
To affect	.....	.....
.....	exposed	.....

- 3-Connect each pair of sentences using the connector in brackets. Make changes where necessary.**  
a) Governments have made a lot of efforts. They have been unable to stop the import of counterfeit products. (although)  
b) Local authorities are encouraging citizens. They want them to be more active. (to)

- 4-Classify the following words according to the pronunciation of their final's'.**  
{medicines — ingredients — controls — diseases}

/s/	/z/	/ɪz/
.....	.....	.....

- 5- Fill in each gap with one word from the list below.**  
{counterfeiting — it — to — people}

Counterfeiting is not limited to medicines only. ...1... is also affecting other products like clothes and food. Thanks...2...some associations...3...have become aware of the dangerous effects of...4... .

**PART TWO: Written Expression** (6points)

*Write a composition of about 100 words on one of the following topics.*  
Choose either

**Topic one:** Why do some people buy counterfeit products? The following notes may help you to answer the question. (cheap / easily found /no big difference /same shape...)

Or

**Topic two:** What can be done to fight counterfeiting? Make suggestions.