

ATENÇÃO: Este modelo é composto por um texto acadêmico e 10 questões.

Ele **NÃO** representa uma prova integral, apenas parte dela.



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**CENTRO DE LÍNGUAS – EXAME DE PROFICIÊNCIA EM LÍNGUA INGLESA
IB
MARÇO/2019**

NOME:.....

- O tempo total da prova é de **2 (duas) horas**. Este período inclui o preenchimento da *Folha de Respostas*. Administre seu tempo, pois não haverá tempo adicional para o preenchimento da *Folha de Respostas*.
- O uso de dicionário impresso é permitido.
- A nota de corte será determinada pela Comissão de Pós-Graduação.
- Ao fazer a escolha da alternativa, assinale-a no corpo de questões.

PROVA B
MESTRADO

O exame é composto por três textos, dos quais um deles é:

I – *Nested Model Reveals Potential Amplification of an HIV Epidemic Due to Drug Resistance*

Nested Model Reveals Potential Amplification of an HIV Epidemic Due to Drug Resistance

Saenz, Roberto A.; Bonhoeffer, Sebastian - Institute of Integrative Biology, ETH Zurich
Disponível em : www.elsevier/locate/epidemics

By the end of 2010, there were around 34 million people living with human immunodeficiency virus (HIV) worldwide, with an estimated 2.7 million new infections in 2010 alone (UNAIDS, 2011). Since 1995, an estimated 2.5 million deaths had been averted in low- and middle-income countries by implementing prevention measures and using antiretroviral therapy (ART) (UNAIDS, 2011). ART coverage in low- and middle-income countries is around 47% of eligible people living with HIV, with several countries achieving universal coverage (UNAIDS, 2011). ART represents a crucial epidemic intervention since, besides slowing down disease progression and increasing survival periods, it decreases transmissibility (Cohen et al., 2011). Although there are

clear recommendations available for treatment eligibility of HIV-infected patients (World Health Organization, 2010), alternative cost effective treatment strategies are constantly under evaluation; for instance, frequent HIV testing of at-risk population with immediate administration of treatment (Granich et al., 2012).

ART was implemented after the use of a single antiretroviral (zidovudine in 1987) led to the emergence of drug resistance (Clavel and Hance, 2004). Drug-resistant (DR) viruses, strains that have the ability to replicate in the presence of drugs, are favored by the fast replication rate of the virus and its lack of proofreading mechanisms (Margeridon-Thermet and Shafer, 2010). The main predictors for acquired drug resistance are suboptimal antiviral therapy and incomplete therapy adherence (Bangsberg et al., 2006). It has been estimated that first-line ART fails to suppress viremia in around 20% of patients, with DR strains present in the majority of cases (Barth et al., 2010).

Although drug resistance normally carries fitness costs for the virus, DR strains are transmitted even in ART-naïve individuals (Hué et al., 2009). Pretreatment DR is associated with virological failure after ART is initiated (Hamers et al., 2011a). Drug resistance prevalence is directly influenced by ART coverage: the prevalence of transmitted drug resistance is around 9-15% in Europe and USA and around 5.6% in Sub-Saharan Africa (Hamers et al., 2011b). Transmitted DR is a concern as a DR strain may persist in a patient for several years without the selective pressure of ART (Jain et al., 2011; Little et al., 2008) and may lead to virological failure when treatment starts (Wittkop et al., 2011). Even if a wild-type (drug-sensitive, DS) strain replaces the DR strain as the more abundant virus, latently infected CD4+lymphocytes (Richman et al., 2009) and viral mutations (Bonhoeffer and Nowak, 1997) are feasible mechanisms for sustaining the persistence of DR. Most studies, using mathematical models for the analysis of epidemic dynamics of drug resistance, have omitted this potential impact of transmitted drug resistance (Baggaley et al., 2006; Blower et al., 2005; Sánchez et al., 2005; Smith et al., 2010; Wagner and Blower, 2012) — a notably exception is the study by Supervie et al. (2011). These models tend to assume that an individual can develop drug resistance or reverse to drug sensitive, depending on treatment status, but the difference between transmitted and acquired drug resistance is ignored; thus the risk of developing drug resistance when ART is administered is the same regardless of being initially infected with a DS strain or being originally infected with DR and reversed to DS.

Using a novel mathematical modeling framework, we study the impact of treatment-related variables such as ART coverage and timing when ART is initiated, on an epidemic of HIV and on drug resistance dynamics. An age-of-infection epidemiological model, with homogeneous population and random-mixing, is employed. The epidemic model receives feedback, in terms of infectiousness and infectious period, from a within-host model of two-strain viral dynamics following the general framework of nested models (Mideo et al., 2008). It also incorporates the change in infectiousness in each of the three stages of HIV infection. Importantly, the model assumes that individuals receiving ART may or may not develop drug resistance but the DR strain would always be selected during ART if initial infection was with DR strain. The effect of **both** within-host parameters, e.g., the fitness cost of drug resistance, and between-host parameters, e.g., ART coverage, on epidemic outcomes such as cumulative infections and DR prevalence are reported.

➤ As questões de 1 a 10 referem-se ao texto ***Nested Model Reveals Potential Amplification of an HIV Epidemic Due to Drug Resistance***

- 1) Com relação a HIV, é correto afirmar que
 - a) no final de 2010 atingiu-se um recorde de 34 milhões de pessoas infectadas.
 - b) aproximadamente 2.7 milhões de pessoas foram contaminadas em 2010.
 - c) desde 1995, 2.5 milhões de mortes ocorreram em países de renda média e baixa.
 - d) mais de 47% das pessoas em países de renda média e baixa fazem terapia anti-retroviral.

- 2) Assinale a alternativa que NÃO apresenta um fator de intervenção epidêmica por parte da terapia anti-retroviral.
 - a) diminuição da progressão da doença.
 - b) aumento do período de sobrevivência.
 - c) diminuição da transmissibilidade.
 - d) aumento da resistência aos fármacos.

- 3) Os vírus resistentes aos fármacos
 - a) são estirpes incapazes de fazer cópias sem alteração do seu RNA.
 - b) possuem uma baixa taxa de replicação.
 - c) são favorecidos pela falta de mecanismos de revisão.
 - d) prevalecem no organismo apenas em condições propícias.

- 4) Os pesquisadores Jain *et al* e Little *et al* afirmam que
 - a) é comum a substituição do estirpe de resistência aos fármacos pelo de sensibilidade aos fármacos.
 - b) deve haver uma preocupação com a resistência aos fármacos, pois esta pode existir no paciente por anos.
 - c) a resistência aos fármacos pode levar à falência virológica.
 - d) há uma melhora na resistência aos fármacos através de mutações virais.

- 5) De acordo com o autor, a maior parte dos estudos sobre resistência aos fármacos e terapia anti-retroviral
 - a) que utilizam modelos matemáticos para a sua análise, omite o impacto da resistência aos fármacos transmitida.
 - b) preocupa-se em analisar principalmente a transmissão de resistência aos fármacos.
 - c) atende ao fato da diferença entre transmissão e aquisição da resistência aos fármacos.
 - d) utiliza a terapia anti-retroviral como base de entendimento e diferenciação entre resistência aos fármacos e sensibilidade aos fármacos.
 - e) O parágrafo a seguir traz uma apreciação do texto.

- I. A terapia anti-retroviral foi introduzida após o aparecimento de resistência aos fármacos.
- II. Em 1995, 2,5 milhões de pessoas foram salvas devido à terapia anti-retroviral e outras medidas preventivas.
- III. Entretanto, nos dias atuais ainda se prefere os tratamentos alternativos à terapia anti-retroviral, devido ao seu alto custo.

Estão corretas:

- a) Apenas I.
- b) Apenas II.
- c) I e II.
- d) II e III.

7) Segundo ao autor, o seu estudo se diferencia dos anteriores porque

- a) estuda somente o momento inicial da terapia anti-retroviral.
- b) relaciona a epidemia de HIV com a resistência a fármacos.
- c) utiliza uma inovadora estrutura de modelagem matemática.
- d) é o estudo mais atual sobre o tema.

8) Leia as afirmações a seguir.

I – O modelo epidêmico é alimentado de informações como o nível de infecciosidade e o período da infecção.

II – No modelo epidêmico fica estabelecido que toda pessoa que passou pela terapia anti-retroviral desenvolverá resistência aos fármacos.

III – Não foi estabelecido nenhum parâmetro para o modelo epidêmico.

De acordo com o texto, está(ão) correta(s)

- a) Somente a II.
- b) Somente a III.
- c) I e II.
- d) I, II e III.

9) Na frase: “*Although there are clear recommendations available for treatment eligibility of HIV-infected patients, alternative cost effective treatment strategies are constantly under evaluation; for instance, frequent HIV testing of at-risk population with immediate administration of treatment.*” (linhas 9-13) o termo destacado indica

- a) concessão.
- b) contraste.
- c) explicação.
- d) afirmação.

10) O termo ***both*** no trecho “*It also incorporates the change in infectiousness in each of the three stages of HIV infection. Importantly, the model assumes that individuals receiving ART may or may not develop drug resistance but the DR strain would always be selected during ART if initial infection was with DR strain. The effect of ***both*** within-host parameters, e.g., the fitness cost of drug resistance, and between-host parameters, e.g., ART coverage, on epidemic outcomes such as cumulative infections and DR prevalence are reported.*” se refere a

- a) *model e individuals.*
- b) *ART e DR.*
- c) *host e parameters.*
- d) *drug e epidemic.*

GABARITO

- 01. *B*
- 02. *D*
- 03. *C*
- 04. *B*
- 05. *A*
- 06. *C*
- 07. *C*
- 08. *C*
- 09. *A*
- 10. *B*

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CENTRO DE LÍNGUAS – EXAME DE PROFICIÊNCIA EM LÍNGUA INGLESA
IB
MARÇO/2019

Nome:

RG:

Assinatura:

DOUTORADO

PARTE II: SOMENTE PARA CANDIDATOS AO DOUTORADO

- Responda em **INGLÊS**.
- **NÃO** copie trechos do texto ou a questão será **ANULADA**.
- O critério de correção avaliará:
 - Estruturas gramaticais;
 - Coerência;
 - Vocabulário;
 - Pertinência ao assunto proposto.
 - Esta questão **vale de 0 a 10 pontos**.
- Observação:
 - A Parte I possui peso 2 e a Parte II possui peso 1.
 - A **Nota Final** será a média ponderada das duas provas (Parte I e Parte II):

$$NF = \frac{(Parte I \times 2) + (Parte II \times 1)}{3}$$

Nested Model Reveals Potential Amplification of an HIV Epidemic Due to Drug Resistance

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Importantly, the model assumes that individuals receiving ART may or may not develop drug resistance but the DR strain would always be selected during ART if initial infection was with DR strain. The effect of both within-host parameters, e.g., the fitness cost of drug resistance, and between-host parameters, e.g., ART coverage, on epidemic outcomes such as cumulative infections and DR prevalence are reported.

*According to the text **Nested Model Reveals Potential Amplification of an HIV Epidemic Due to Drug Resistance**, the HIV epidemic could grow due to drug use. Discuss this point of view by presenting the arguments used in the text. Write between 90 to 100 words.*

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IF
OUTUBRO / 2018

NOME:.....

MESTRADO

- Duração da prova: 2h
- O uso de dicionário impresso é permitido.
- O aproveitamento mínimo para obter o conceito “Suficiente” é de 70%, o que equivale ao acerto de 14 (catorze) questões.
- Assinale apenas uma alternativa para cada questão.

O exame é composto por dois textos, sendo um deles:

– *Drop Impact Dynamics: Splashing, Spreading, Receding, Bouncing...*

PROVA B

DROP IMPACT DYNAMICS: SPLASHING, SPREADING, RECEDING, BOUNCING...

YARIN, A.L.

Disponível em: www.fluid.annualreviews.org

Drop impacts on solid and liquid surfaces are a key element of a wide variety of phenomena encountered in technical applications, such as ink-jet printing, rapid spray cooling of hot surfaces (turbine blades, rolls in rolling mills for steel production, lasers, semiconductor chips, and electronic devices), annealing, quenching of aluminum alloys and steel, fire suppression by sprinklers, internal combustion engines (intake ducts of gasoline engines or piston bowls in direct-injection diesel engines), incinerators, spray painting and coating, plasma spraying, and crop spraying. Microfabrication of structured materials, solder bumps on printed circuit boards, and electric circuits in microelectronics produced by precision solder-drop dispensing, as well as liquid atomization and cleaning, and ice accumulation on power lines and aircraft also involve drop impacts. The latter are also important in criminal forensics, in development of

nonwettable or fully wettable surfaces, in high-accuracy activation or passivation of substrates by microdrops, in transport of surface contaminants into bulk liquids, and in gas entrapment. Understanding the accompanying physical phenomena is of utmost importance in formulating reliable boundary conditions in numerical codes for spray simulation. Such large-scale and widespread natural phenomena as aeration of the surface layers of lakes, seas, and oceans depend on air bubble entrainment due to rain drop impacts. These impacts at ocean surfaces lead to formation of upward jets and secondary droplets, which evaporate and form salt crystals. The **latter** serve as nucleation sites in clouds, with the attendant relevance to meteorology. Erosion of soil, dispersal of spores and micro-organisms, and underwater noise during rains are three additional natural phenomena involving drop impact. Nail-like jets and bubbles are a familiar spectacle during rain falling on puddles and ponds.

Worthington (1908) was one of the first to investigate these impacts systematically and his book contains many fascinating photographs of the phenomena accompanying drop- and solid-ball impacts on deep liquid pools. In spite of its commonness, and of more than 100 years of research, the phenomenon is still far from being fully understood and continues to attract physicists, engineers, and mathematicians. It even attracts the general public and motivates potential customers, given the number of commercials based on drop impact scenes aired on television and shown on postcards.

The accompanying phenomena are extremely diverse, involved, and surprising. A drop may be spherical or elliptic (due to oscillations) at the moment of impact. It may impact on the free surface of a liquid in a deep pool, on a thin liquid film on a wall, or on a dry solid surface. The impact may be normal (perpendicular) or oblique, in air or in vacuum. The liquid may be Newtonian or non-Newtonian (e.g., a viscoelastic polymer or a surfactant solution). The liquids of the drop and pool/film may be miscible or immiscible. The solid surface may be hard or soft, rough or smooth, chemically homogeneous or heterogeneous. It may also be porous, flat or curved, at a temperature different from that of the drop or the same. On liquid surfaces, pre-existing or generated waves may affect the flow pattern. The impact may result in the drop spreading over the solid surface, receding, rebounding, or even levitating if the evaporation near a hot wall is sufficiently strong for the Leidenfrost effect. A crater **may** form in the liquid bulk in a pool and later on collapse, leading to formation of the so-called Worthington jet flowing out from its center and being subjected to capillary breakup. The impact on a liquid film may result in crown formation, propagation, and breakup, as well as in tiny bubble trapping, or—under certain conditions—noncoalescence and even rolling over the surface.

The outcome of drop impact depends on the impact velocity, its direction relative to the surface, drop size, the properties of the liquid (its density, viscosity, viscoelasticity, and some other non-Newtonian effects for rheologically complex fluids), the surface or interfacial tension, the roughness and wettability of the solid surface, the nonisothermal effects (e.g., solidification and evaporation), and air entrapment. In very strong impacts, liquid compressibility is also a factor. By contrast, following the impact of solid balls and projectiles onto armor plates in the hypervelocity range, the solid materials flow like fluids, and the influence of their elasticity, yield stress and plasticity is negligible compared to inertial effects. As a result, phenomena such as frontal ejecta and crater formation in solid-solid impacts are reminiscent of those characteristic of liquid drop impact (i.e., splashing and crown formation), which led Worthington to call the former “permanent splashes.” In cosmic-scale impacts of asteroids (a spectacular example of which is the Arizona Meteor Crater), material vaporization becomes a dominant factor.

➤ As questões de 01 a 10 referem-se ao texto ***Drop Impact Dynamics: Splashing, Spreading, Receding, Bouncing...***

1. Assinale a alternativa que **NÃO** apresente uma aplicação técnica advinda do fenômeno do impacto da gota

- a) impressora a jato de tinta.
- b) motores de combustão interna.
- c) extintor de incêndio.
- d) pintura por pulverização.

2. Qual aplicação técnica dos impactos da gota a criminalística utiliza?

- a) microfabricação de materiais estruturados.
- b) pontos de solda em circuito impresso.
- c) circuitos elétricos em microeletrônica.
- d) acumulação de gelo nas linhas de força.

3. A aeração das camadas superficiais de lagos, mares e oceanos depende

- a) especificamente da área.
- b) indiretamente do impacto da queda da chuva.
- c) apenas do arrastamento do ar realizado pelas ondas.
- d) unicamente do fenômeno natural de acumulação de camadas.

4. O termo ***latter*** no trecho “*These impacts at ocean surfaces lead to formation of upward jets and secondary droplets, which evaporate and form salt crystals. The latter serve as nucleation sites in clouds, with the attendant relevance to meteorology.*” refere-se a

- a) *ocean.*
- b) *jets.*
- c) *salt crystals.*
- d) *clouds.*

5. De acordo com o texto, Worthington

- a) publicou fotografias do fenômeno do impacto de gotas e bolas sólidas em uma piscina.
- b) investigou o fenômeno natural da cristalização do sal nas gotas.
- c) sistematizou todos os fenômenos estritamente relacionados com os jatos.
- d) descobriu como a água se comporta quando relacionada a baixas temperaturas.

6. O fenômeno pesquisado por Worthington

- a) tem menos de 100 anos de pesquisa.
- b) possui pouca relevância no meio acadêmico hoje em dia.
- c) não foi totalmente compreendido ainda.
- d) é utilizado apenas pela mídia.

7. No momento de impacto a gota pode mudar de forma devido à(s)

- a) oscilações.
- b) velocidade.
- c) superfície de contato.
- d) temperatura.

8. Assinale a alternativa que apresente um dos resultados de uma gota cair em uma superfície sólida.

- a) ondas.
- b) espalhamento.
- c) evaporação.
- d) deslizamento.

9. Na frase: “A crater may form in the liquid bulk in a pool and later on collapse.” O termo destacado indica

- a) certeza.
- b) impossibilidade.
- c) probabilidade.
- d) obrigação.

10. O autor aponta diversos fatores para ter o resultado do impacto da gota, mas um deles ocorre em impactos muito fortes, que é a

- a) tensão de superfície.
- b) compressibilidade de líquido.
- c) molhabilidade da superfície.
- d) evaporação.

GABARITO

1. C
2. D
3. B
4. C
5. A
6. C
7. A
8. B
9. C
10. B

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IF
OUTUBRO / 2018

Nome: _____

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PARTE II: SOMENTE PARA CANDIDATOS AO DOUTORADO

- Responda em INGLÊS.
- NÃO copie trechos do texto.
- Esta questão vale de 0 a 10 pontos.
- **Observação:**
 - A Parte I possui peso 2 e a Parte II possui peso 1.
 - A **Nota Final** será a média ponderada das duas provas (Parte I e Parte II):
 - **NF = (Parte I x 2) + (Parte II x 1)**

○ **3**

**EFFECT OF FREEZING TREATMENTS AND YEAST AMOUNT ON
SENSORY AND PHYSICAL PROPERTIES OF SWEET BAKERY
PRODUCTS**

Smail Meziani, Messaouda Kaci, Muriel Jacquot, Jordane Jasniewski, Pablo Ribotta, Jean-Marc Muller,
Mohamed Ghoul, Stéphane Desobry
Disponível em: www.elsevier.com

The frozen bakery market has increased significantly in developed countries in recent years. Baking terminals have proliferated in public places such as supermarkets, bakery shops, airports (Le Bail and Goff, 2008). This technology allows for a time lag between frozen dough and selling step and several advantages have been recognized

among them the standardization of the final product quality (Bárcenas and Rosell, 2007).

The quality of fresh bakery products is often related to its crust (thickness, crispiness, color, and taste) and to the crumb structure (flavor, soft texture, size of the cells). However, bakery products have a short shelf-life, and the loss of freshness influence negatively the product's quality and consumer acceptance, expressed by a number of chemical and physical changes (staling). Indeed, the appearance, odor, color, texture and flavor attributes are used to determine sensory properties of bakery products (Stone and Sidel, 2004). The product sale will certainly be a failure if some of these attributes do not meet consumer expectations. Each product has its characteristic sensory profile combining specific attributes.

The variety of frozen bakery products has increased significantly since their introduction to the market; this list includes breads and rolls, croissants, muffins, cakes, cookies, pastries, laminated dough, pizza (Decock and Cappelle, 2005).

However, each one of frozen bakery products has advantages and drawbacks. A major problem of the part-baked and fully baked frozen bakery product is crust flaking probably due to the intensity of thermo-mechanical shock during chilling-freezing and final baking (Le Bail et al., 2005). Carr et al. (2006) reported their products had a rougher crust and very compact crumb caused by freezing. The main competitor of the partly-baked and fully baked frozen bakery product is the unfermented frozen dough.

Despite the drawbacks, the frozen unfermented product has better prospective for the industry. However, unfermented frozen dough often exhibits a specific volume decrease manifested by an increase proofing time compared to fresh dough products during freezing and long frozen storage (Añón et al., 2004). Several authors suggested that the formulation and processing parameters such as freezing and thawing rate (Le Bail et al., 1998), frozen storage time (Lu and Grant, 1999) and mixing time (Rouille et al., 2000) influence significantly the bakery product quality obtained by frozen dough.

These parameters can act either independently or synergistically to reduce the yeast activity resulting in reduced gas production (Rosell and Gomez, 2007) or damage to the dough structure due to poor CO₂ retention (Wolt and D'Appolonia, 1984) and poor baking performance. Havet (2000) found a 20% decrease of bread specific volume obtained from dough frozen at -20 °C (3 m/s air velocity). Several studies have shown that the freezing rate was directly related to the ice crystals size causing the disruption on dough gluten network during freezing (Havet et al., 2000; Inoue and Bushuk, 1996; Kulp, 1995; Spiess, 1980).

The freezing rate plays an important role in the final quality of frozen product, two opposite effects are observed. A high freezing rate allows the formation of ice microcrystals, which do not affect the gluten network integrity, which reduces physical damage (disturbance and dehydration of gluten network) induced by freezing, ultimately to the extent that the starch granules appear to be associated with the network gluten (Angioloni et al., 2008). Nonetheless, rapid freezing might fatally compromise the yeast activity.

Olivera and Salvadori (2009) suggested that slow freezing formed large size ice crystals causing the disruption of dough gluten network during freezing. Mezziani et al. (2012) shown the dependence of fermentation activity and integrity of the gluten network with freezing rate, which controls size and location of ice crystals resulting in research of a compromise between freezing rate nor too fast to reduce yeast viability, nor too slow to form large ice crystals that could perforate gluten network.

The sensory characteristics of bakery products are heavily influenced by their formulation; the presence of some ingredients such as butter gives a characteristic flavor

to the final product. In addition to the raw materials used, the manufacturing process substantially alters the sensory properties of bakery product.

Most of these studies were interested to bread dough produced from a basic formula. This work is distinguished by the complexity of sweet dough formulation (high fat and sugar content) and use of cryogenic immersion to achieve freezing rates ultra-fast. These factors influence intrinsic dough properties. The milk and lipids contained in sweet dough which can contribute to cryoprotection, while sugar enhances yeast's growth before freezing (Meziani et al., 2012; Wolt and D'Appolonia, 1984). To elucidate this point, frozen sweet doughs were prepared by in the same conditions different freezing treatment. Similarly, use of natural additives like whey proteins, surfactants and enzymes are also gaining importance to control the water redistribution problems in the frozen doughs' structures (Asghar et al., 2011). No study on freezing rate and formulation effect on sweet dough properties with complex recipe have been published.

Kougelhoppf matrix was chosen in this study for its manufacturing process is similar to that of bread and complexity of its dough recipe. Kougelhoppf is a southern German, Austrian, Swiss and Alsatian term for a marble cake or Bundt cake; recognizes itself easily with high grooved form. The cake crust is light brown, sprinkled with icing sugar and decorated with almonds on top. **Its** tender and brioche crumb is strewn with raisins.

The objectives of this work were (i) to study the influence of freezing conditions and yeast quantity on physical, textural and sensory characteristics of fully baked sweet product Kougelhoppf and (ii) to compare these parameters to those obtained from fresh Kougelhoppf and (iii) to define the best freezing treatment and formulation for Kougelhoppf.

Escreva um **ABSTRACT** em inglês para o texto ***Effect of Freezing Treatments and Yeast Amount on Sensory and Physical Properties of Bakery Products.***

O modelo de abstract contém *objetivo, metodologia, resultado, recomendação, conclusões e palavras-chave*. No abstract que você irá criar a partir desse texto, você deverá escrever 100 a 140 palavras, relatando apenas as partes apresentadas nele. **NÃO COPIE TRECHOS DO TEXTO.**

ATENÇÃO: Este modelo é composto por um texto acadêmico e 10 questões.

Ele **NÃO** representa uma prova integral, apenas parte dela.



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**CENTRO DE LÍNGUAS – EXAME DE PROFICIÊNCIA EM LÍNGUA INGLESA
LETRAS
MARÇO/2016**

NOME:.....

- Duração da prova: 2h.
- Só será permitida a consulta a dicionários monolíngues impressos.
- O aproveitamento mínimo para obter o conceito “Suficiente” é de 70%, o que equivale ao acerto de 14 (quatorze) questões.
- Assinale apenas uma alternativa para cada questão.

O exame é composto por dois textos. Um deles é:

I – ‘Interesting Post, but I Disagree’: Social Presence and Antisocial Behaviour in Academic Weblogs

PROVA A

TEXTO I

‘INTERESTING POST, BUT I DISAGREE’: SOCIAL PRESENCE AND ANTISOCIAL BEHAVIOUR IN ACADEMIC WEBLOGS

LUZON, M. J. Department of English Philology, University of Zaragoza, SPAIN

Disponível em: <http://apliij.oxfordjournals.org/>

Academic weblogs have recently emerged as a new form of scholarly communication which harnesses the affordances of the digital environment. Since they are becoming increasingly popular as tools for personal publishing and scholarly interaction, it is necessary to reflect on their place within the system of academic genres and analyse how academics use language in this genre to construct social meaning, create their social identities, and engage with each other. Already in 2002, Hyland and Hamp-Lyons stressed the need to understand and address the changes that computer-mediated communication (CMC) genres imply for academic literacy practices. This involves research on ‘the implications of computer-mediated interactions for the authorial identities we assume online and the ways we engage with readers’. However, although some studies have explored interpersonal discourse in different types of

weblogs, to date little research has been done on the discursive features and interpersonal strategies of academic blogs.

The aim of the research reported here is to study the interpersonal behavior of participants (i.e. the blogger and the readers who contribute comments) in academic weblogs and determine what this behaviour reveals about how identity is constructed in this genre and about the relationships among the members of the online community who use the weblog. For this purpose, I will analyse the interaction that takes place through postings and comments, focusing on those features that act as markers of relational behaviour (i.e. both social and anti-social behaviour), that is, on the features that provide cues as to the participants' relational orientation towards one another. The questions I will address in this study are: (i) which are the markers of relational behavior in academic blogs and which is their incidence?; (ii) is the incidence and the type of markers of social and anti-social behaviour the same (or similar) in the various blogs analysed; (iii) how do blogs compare with other academic genres in the type and incidence of markers of relational behaviour?; and (iv) what is the function of these indicators in academic blogs? The knowledge that we gain from research on the social and discursive practices engaged in by academics when participating in virtual communities can be used to inform our practices both as teachers and researchers. It can help to understand the nature of online academic literacy and to explore the potential of blogs as spaces for EAP students to become aware of interpersonal issues in academic writing.

The weblog is an online genre that enables self-presentation and usually incorporates social tools which support participation and conversation. Although the various types of weblogs in the blogosphere (e.g. personal blogs, corporate blogs, campaign blogs, journalistic blogs, academic blog) share distinctive formal features (e.g. dated entries, reverse chronology), and technical affordances (e.g. possibility to comment), they vary widely in terms of purpose, content or participant features. Academic weblogs are blogs about academic and discipline related topics written by a person with some expertise in an academic field. However, the term academic blog is an elusive and broad one, which includes several different subtypes (Walker 2006), such as blogs for political debate, pure research blogs, or blogs about academic life. Most academic blogs are in fact hybrid texts with different types of entries. Research on academic blogs has revealed that they are used, among other purposes, to manage personal knowledge, to disseminate information and valuable research, to test ideas and share them with a broad audience, to collaborate and interact with other like-minded scholars, and thus establish an reinforce links within a virtual community, and to increase the bloggers' visibility and develop respect and reputation. The steady growth of academic blogging could be related to the new perspective on scientific research, communication and publishing brought about by the emergence of Science 2.0: online sharing of theories, ideas, etc., and collaborative knowledge construction through open debate are promoted. The content and purpose of posts in academic blogs suggests that they allow academics to engage in discursive practices and activities not supported by other existing genres, thus filling a gap in scholarly communication. Academic blogs are therefore a new form of scholarly writing with some medium-afforded attributes that distinguish them from conventional genres: openness, shorter communication time, highly social nature, potential for networked research. Weblogs offer scholars an open digital arena to interact with members of a discipline but also with academics in other research areas and non-academic interested public. In addition, academic blogs defy the control of peer reviews and enable timely and fast publication of content inappropriate for other written genres, for example, nascent ideas, intuitions, negative results. The weblog also provides a space for more personal content, which often blurs the distinction between the blogger's academic/professional and personal identity. Boyd (2003) characterizes blogs as a good example of 'social software', that is, software supportive of conversational interaction, social networks, and social feedback. They support the desire of individuals to affiliate in order to achieve their personal goals and allow for the creation of new social groupings, not necessarily overlapping with in-person communities, and for the emergence of new social conventions. Their interactive features (i.e.

linking and comments) facilitate networked research, which contributes to the creation of these new virtual communities.

Academics who interact through a specific weblog form ‘communities of blogging practice’: ‘groups of people who share certain routines and expectations about the use of blogs as a tool for information, identity, and relationship management’ (Schmidt 2007). Relations of social power among the members of a blogging community are defined in a different way from face-to-face communication. The unrestricted membership of most of these blogging communities invites interdisciplinary knowledge construction, and minimizes offline power/status differences. The sense of anonymity also contributes to the equalization process that tends to take place in CMC.

Baym’s (2006: 69) characterization of online groups as ‘normatively regulated, hierarchical and often very supportive’ can help to explain the relational behaviour among participants in academic blogs. Members of online groups share a set of social meanings, **which** include identities, relationships, group-specific forms of expression, and behavioural standards, all this contributing to a strong sense of belonging to the group (Lea et al. 1992; Baym 1993). Online social hierarchies are not based on offline power relations but on patterns of participation and communal evaluation (Bruns 2008), with light users and heavy users, who use a variety of ways (e.g. sharing knowledge, showing excellence in some skills) to gain status.

➤ As questões de 1 a 10 referem-se ao texto ***‘Interesting Post, But I Disagree’: Social Presence And Antisocial Behaviour In Academic Weblogs***

1. O aparecimento dos blogs no meio acadêmico
 - a. desencadeou reflexões em torno da linguagem utilizada.
 - b. afunilou a demanda de publicações.
 - c. obteve grande repercussão popular.
 - d. criou identidades nunca antes imaginadas.

2. Uma das carências nos estudos dos blogs acadêmicos
 - a. deve-se à falta de recursos das áreas.
 - b. é a ausência de mais pesquisas no gênero.
 - c. se dá pela dificuldade da atribuição de autorias.
 - d. tem, como causa, a análise prioritariamente discursiva.

3. O estudo em questão
 - a. analisa somente o comportamento social das interações.
 - b. faz com que os pesquisadores acadêmicos revejam as suas práticas.
 - c. discute o uso dos marcadores sob a ótica da Análise do Discurso.
 - d. inclui os gêneros jornalísticos a título de comparação.

4. Leia os enunciados abaixo.

Segundo o texto,

- I. de uma maneira geral, os blogs compartilham de características comuns.
- II. o formato digital desobriga os blogs acadêmicos dos moldes convencionais da escrita acadêmica.
- III. o hibridismo encontrado nos blogs acadêmicos é apontado como desvantagem.

Está (ão) correta (s)

- a) Apenas a I.
- b) I e II.
- c) Apenas a II.
- d) II e III.

5. Aponte um fim **NÃO** citado no estudo para os blogs acadêmicos.

- a. a disseminação virtual da informação
- b. o enfoque pesquisador
- c. exposição de ideias e visibilidade
- d. a seleta aceitação dos participantes

6. Segundo o texto, os blogs acadêmicos

- a. permitem o engajamento nos debates.
- b. seguem formato convencional.
- c. trazem potencial para todo o ambiente digital.
- d. são prejudicados pela extensão dos textos.

7. Uma particularidade apontada sobre os blogs acadêmicos é

- a. a linha divisória entre a identidade pessoal e a acadêmica do blogueiro.
- b. o espaço propício para arriscar conteúdos apenas aceitos pela comunidade.
- c. o acesso a uma mídia cujo caráter interativo permite a formação de novos grupos.
- d. a participação ilimitada a todos como acontece na comunicação presencial.

8. O conceito de comportamento relacional definido no texto

- a. submete-se a padrões regidos pelas regras herdadas na sociedade.
- b. segue a hierarquia de valores estabelecida pelas outras mídias.
- c. advém do significado social que as práticas nos blogs possibilitam.
- d. proporciona alcançar status como resultado da inclusão social.

9. A palavra ***which*** no trecho “*Members of online groups share a set of social meanings, which include identities, relationships, group-specific forms of expression, and behavioural standards, all this contributing to a strong sense of belonging to the group*” refere-se a
- a) *academic blogs.*
 - b) *online groups.*
 - c) *social meanings.*
 - d) *participants.*
10. Segundo o texto, nos blogs acadêmicos os participantes
- a) reproduzem na vida real as mesmas relações de poder.
 - b) fazem uso do espaço de diferentes maneiras.
 - c) são usuários contumazes com acesso permanente.
 - d) usam o espaço unicamente para demonstrar conhecimento

GABARITO

01. *A*

02. *B*

03. *B*

04. *B*

05. *D*

06. *A*

07. *C*

08. *C*

09. *C*

10. *B*

ATENÇÃO: Este modelo **NÃO** representa uma prova integral, apenas parte dela.



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CENTRO DE LÍNGUAS – EXAME DE PROFICIÊNCIA EM LÍNGUA INGLESA
IRI
SETEMBRO / 2015

Nome:

RG:

Assinatura:

DOUTORADO

PARTE II: SOMENTE PARA CANDIDATOS AO DOUTORADO

- Responda em INGLÊS.
- NÃO copie trechos do texto ou a questão será ANULADA.
- O critério de correção avaliará:
 - Estruturas gramaticais;
 - Coerência;
 - Vocabulário;
 - Pertinência ao assunto proposto
- Esta questão **vale de 0 a 10 pontos**.
- **Observação:**
 - A Parte I possui peso 2 e a Parte II possui peso 1.
 - A **Nota Final** será a média ponderada das duas provas (Parte I e Parte II):
 - **NF = (Parte I x 2) + (Parte II x 1)**

TEXTO I

Globalization and People at the Margins: Experiences from the Global South

Julia Guenther and Eswarappa Kasi

Disponível em: *Journal of Developing Societies* 31, 1 (2015): 1–7

Concepts of Marginalization

The concept of marginalization has its roots in the 1930s when Park (1928) first coined and systematically explained this concept in his seminal essay “Human Migration and the Marginal Man.” Later, Billson (1988, 1996) tried to theorize and explain its significance in the sociological realm. Thus, Billson distinguished between “cultural marginality, social role marginality, and structural marginality, according to whether the linchpin of marginal status rests in cultural differences, individual roles, or location in the social structure” (1996, pp. 1–2). In this special issue, we have tried to use the concept of marginalization in a more nuanced manner to increase the understanding of the sociological and anthropological aspects of the phenomena it encompasses.

Nilsen’s article (2013) entitled “Adivasi Mobilization in Contemporary India” focuses on the sociological engagement of the political aspects of the structural marginalization of the Adivasis in India. He puts forward the argument that it is necessary to move beyond both anti-statism and state-centrism in order to develop a politically enabling engagement with the contemporary Adivasi mobilization in India. This kind of mobilization is in fact more frequent in the tribal belts of India as a result of the identity mobilization of the Scheduled Castes and the so-called Other Backward Classes. Williams, Vira and Chopra (2011) pay special attention to the contemporary Indian state as a major part of the context of development. Their work reflects upon the ways in which the state experiences by focusing on questions of marginality, agency and power as they intersect the politics of development. The implementation of pro-poor and more inclusive policies has altered the discursive landscape within which state–society interactions have taken place over the last few years. It is important to note that these policies have functioned to reconfigure not only the material interactions between the state and India’s marginalized, but also the imagined spaces within which marginal groups renegotiate their relationships with the state in order to get their agenda implemented. It is pertinent to mention here that the Indian government is actively involved in the beneficiaries in order to fulfil its promise of inclusive forms of governance.

Earlier, Kasi (2011a) argued that the majority of the Indian tribal/ indigenous/Adivasi groups are marginal and have been bearing severe deprivation, lack of resources, persistent inequality, indebtedness, poverty, vulnerability, among others. Further, it is mentioned that they are cultural groups that have relinquished some of their traditions and separate identities while partially accepting the values and ways of life of the dominating culture. Uddin (2010) has analyzed critically in his seminal article on the “Politics of Cultural Difference: Identity and Marginality in the Chittagong Hill Tracts of Bangladesh” the formation of an ethnic category and its relations with the marginalization of ethnic minorities in the context of upland–lowland relations in Bangladesh. Uddin examines the political and historical trajectories of the South Asian countries. He further criticizes that colonial policy has continued in the post-colonial era, particularly in dealing with people of different cultures.

Thus, it is argued and followed by the government that all “forms of differences” do exist in the post-colonial state of India, especially in matters related to the seven north-eastern states of India.

Sharma’s (2008) article provides a critique of official development discourses on the migration of men from Nepal to India. Sharma showed that migration is not perceived as a problem by migrants themselves but as an integral practice in their livelihoods. Many see labor migration to India as an escape from a difficult socioeconomic, cultural, and familial situation

and as an opportunity for young men and women to experience a distant place, experience the pleasures and possibilities of consumption as well as earn and remit money home to fulfill their hope for the upward socioeconomic mobility of their families.

Kasi's (2007) study of the Sugali tribe of Andhra Pradesh discusses similar experiences and arguments. Mehta (2008, p. 239) contends that: "Researching marginality is tricky. Even when we make attempts to be fair, compassionate, and honest while conducting research with marginalized groups, overt and covert disparities and discrepancies can still persist." Research on the marginal sections of society is critical in India as it engages these sections in a pedagogical approach and focuses policy formulations on the people involved. The work by Yalamala, Oakley and

Kasi (2013) critically dwells upon the "critical ethnographic discourse of the socially excluded groups of India." In a more comparative perspective Mills (2005, p. 386) has rightly observed that:

Powerful ideals of progress, development, and modernity represent deeply desired standards of well-being for many people in today's world. Although the content of such ideals (as well as their diverse vocabularies) are always variously imagined and locally constructed, the desires they evoke can retain a powerful attraction for individuals and communities even when their achievement is continually frustrated or denied.

Laitin's (1995) essay "Marginality: A Microperspective" focuses on the rational choice models that are based on "methodological individualism," which he argues have inadequately addressed the degree to which individuals from minority ethnic groups can reformulate their identities in order to take advantage of the opportunities denied to them. Laitin further observes that "marginal groups or populations should disappear if identities were as plastic as rational theories have assumed" (p. 31).

Further, many scholars have concluded that poverty, dependency, and helplessness are not invariably due to the shortcomings of individuals, but often due to circumstances beyond their control (Booth Leach, & Tierney, 1999; Chapman & Cook, 1988; Kasi, 2011b). Thus, it is the responsibility of the state to address these problems and formulate its policies accordingly.

With this as the current state of the art, this special issue on "Globalisation and People at the Margins" examines the theoretical and epistemological engagement of globalization on the one hand, and provides ethnographic and empirical information on the other. It examines various facets of marginalization from political, economic, social, gendered, and caste perspectives. Therefore, this special issue provides an interdisciplinary examination of globalization and marginality.

➤ Responda EM INGLÊS. NÃO COPIE TRECHOS DO TEXTO. Escreva entre 80 e 100 palavras.

*Based on the text **Globalization and People at the Margins: Experiences from the Global South**, how do you view migration as synonyms of poverty and dependency?*

ATENÇÃO: Este modelo **NÃO** representa uma prova integral, apenas parte dela.



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**CENTRO INTERDEPARTAMENTAL DE LÍNGUAS – EXAME DE PROFICIÊNCIA EM LÍNGUA INGLESA
EACH-GERONTOLOGIA
OUTUBRO/2019**

NOME:.....

- O tempo total da prova é de **2 (duas) horas**. Este período inclui o preenchimento da *Folha de Respostas*. Administre seu tempo, pois não haverá tempo adicional para o preenchimento da *Folha de Respostas*.
- O aproveitamento mínimo para obter o conceito “Suficiente” é de 70%, o que equivale ao acerto de 14 questões.
- O uso de dicionário impresso é permitido.
- Assinale apenas UMA alternativa para cada questão.
- Ao fazer a escolha da alternativa, assinale-a no corpo de questões.

O exame é composto pelo texto:

I - Alzheimer's Treatments That Work Now

PARTE I

ALZHEIMER'S TREATMENTS THAT WORK NOW

Marcia Barinaga, disponível em <https://science.sciencemag.org>

Alzheimer's disease is a ruthless decaying of the mind, devastating to those afflicted and to family members who witness their decline. Within the past few years, researchers have made some progress on treatments that might delay the relentless neurodegeneration, but prevention or cure is still out of reach. Millions of people suffer from the disease, and half a million of those in the final stages languish in U.S. nursing homes, incontinent, their bodies

frozen by a severe stiffening called contractures, unable to speak or even recognize family members.

While neuroscientists and geneticists search for a way to turn back the clock on the ravages of Alzheimer's, another avenue of research--behavioral research conducted by psychologists, social workers, and nurses--is already providing therapies to relieve some of the suffering of the patients and their caregivers. Such behavioral therapies are far from a cure, and they may not even arrest the underlying disease process. Nevertheless, they represent "an area that cannot be ignored, because we can have such a quick, practical impact on so many people," says Zaven Khachaturian, a former associate director of the Neuroscience and Neuropsychology of Aging Program at the National Institute on Aging who is currently with Khachaturian, Radebaugh, and Associates, an international consulting group on Alzheimer's disease in Potomac, Maryland. Caregivers as well as patients stand to benefit, he notes.

Over the years, Alzheimer's experts have learned that every patient goes through a predictable decline, from forgetfulness at the early stages to an inability to speak and walk as the disease runs its course. Research suggests that patients may lose some abilities faster than necessary because their caregivers underestimate what **they** can still do for themselves. This is leading to a "use it or lose it" approach to Alzheimer's, in which researchers gauge what patients can still be expected to do and then help them retain those skills. Studies have shown, for example, that behavioral therapy can slow or temporarily halt patients' loss of urinary continence and of their abilities to dress themselves and communicate their needs.

Research done in the past decade also shows that behavioral strategies can reduce many disruptive behaviors common in Alzheimer's patients, such as screaming, wandering, or hitting. In the past, institutions have tried to control such problems by giving the patients antipsychotic drugs or physically restraining them--measures that can cloud the patients' minds even further or increase their agitation. The behavioral approaches instead seek to find the causes of the troubling behaviors and avoid triggering them. "What all this comes to is a new science of Alzheimer's management," says one of the pioneers of the research, New York University (NYU) psychiatrist Barry Reisberg. The next major challenge is to disseminate what researchers are learning to families and community nursing homes outside the orbit of major research centers.

With all the new behavioral interventions, there is one caveat researchers have learned: the success of a program depends absolutely on caregivers' diligence in carrying it out. Studies by Alabama's Burgio and UCLA's Schnelle have shown that nursing home staff members tend to drop new techniques unless they are continually urged to use them.

Burgio developed a program to combat this problem, adapted from motivational programs used in industry, which combines monitoring of the nursing home staff with incentives for good performance. In a carefully controlled trial, staff members who received his program consistently used the interventions they had learned for months, while those not in the program tended to drop the interventions when the training period ended. Burgio says he tells nursing homes that are interested in behavioral therapies, "if you aren't going to use a staff motivational program, don't even bother with the behavioral intervention, [because] it won't be used."

Indeed , the new behavioral methods face many hurdles. "It is a really long road," says Teresa Radebaugh of Khachaturian, Radebaugh, and Associates, "to take something that is well tested, well described, carefully peer reviewed, and published, but done in a sophisticated setting ... and get it out to a nursing home in a small town." Burgio agrees: "A lot of people still believe [nursing homes] should be following a custodial model, not a treatment model. It will take another 10 years before people are really accepting of the treatment model." But these researchers are committed to spreading their word and making life a bit easier for Alzheimer's sufferers and their caregivers

➤ As questões de 01 a 10 se referem ao texto *Alzheimer's treatments that work now*

1. Assinale a alternativa CORRETA sobre a doença de Alzheimer nos EUA.

- a) Os pacientes conseguem manter uma vida relativamente ativa.
- b) O número de pacientes soma mais de um milhão.
- c) Os pesquisadores acreditam que logo será encontrada uma cura.
- d) A situação dos pacientes é precária, porque a maioria sofre negligência.

2. Leia as seguintes afirmações sobre as terapias comportamentais.

- I. Elas têm como objetivo reverter os danos causados pelo Alzheimer.
- II. Essas terapias podem ajudar tanto os pacientes como seus cuidadores.
- III. Seu sucesso é consequência do empenho dos cuidadores.

Está(ão) correta(s)

- a) apenas II.
- b) II e III.
- c) I, II e III.
- d) apenas I.

3. A perda de habilidades em pacientes de Alzheimer, de acordo com o texto

- a) pode ser acelerada pelo uso forçado e exaustivo destas.
- b) ocorre de maneira idêntica em todos os pacientes, sem exceção.
- c) pode ser retardada quando as habilidades continuam sendo utilizadas.
- d) tem como causa principal o esquecimento característico da doença.

4. A nova ciência de controle do Alzheimer mencionada por Barry Reisbeg
- a) procura a causa de comportamentos problemáticos e evita encadeá-los.
 - b) já está disseminada entre famílias e instituições fora do escopo acadêmico.
 - c) acredita ser necessário manter o paciente sedado através de medicamentos.
 - d) não acredita que bater ou gritar sejam comportamentos problemáticos.
5. A palavra **they** no trecho “*Research suggests that patients may lose some abilities faster than necessary because their caregivers underestimate what **they** can still do for.*” se refere a
- a) *research.*
 - b) *caregivers.*
 - c) *abilities.*
 - d) *patients.*
6. De acordo com Burgio, terapias comportamentais
- a) não funcionam em pacientes que não se sentem motivados.
 - b) tendem a ser ineficazes em algumas instituições e, portanto, abandonadas.
 - c) são melhor utilizadas por profissionais incentivados a fazê-las.
 - d) exigem que as instituições controlem minuciosamente os seus funcionários.
7. Radebaugh acredita que o maior empecilho para a disseminação da terapia comportamental é a
- a) falta de publicações acadêmicas sobre o assunto.
 - b) distância em que fica a maioria das instituições para idosos.
 - c) falta de sofisticação da maioria das instituições para idosos.
 - d) a ideia antiquada que a maioria das pessoas têm sobre casas de repouso.
8. Os autores citados no texto estão comprometidos com a posição de
- a) amenizar a vida dos cuidadores dos pacientes de Alzheimer.
 - b) estabelecer um modelo de tratamento único nas casas de repouso a idosos.
 - c) facilitar tanto o trato de pacientes com Alzheimer como a ação dos cuidadores.
 - d) apoiar os programas introduzidos na indústria.

9. Com relação à doença do Alzheimer, um dos desafios da pesquisa é apontar

- a) a disseminação das terapias comportamentais às pessoas envolvidas.
- b) a degeneração neurológica dos pacientes.
- c) a falta de pesquisas na área.
- d) para intervenções terapêuticas que levam à cura.

10. Na frase “ **Indeed** , *the new behavioral methods face many hurdles.* ” a palavra **indeed** introduz a noção de

- a) contraste.
- b) ênfase.
- c) negação.
- d) dúvida.

GABARITO

01.	B
02.	B
03.	C
04.	A
05.	D
06.	C
07.	D
08.	C
09.	A
10.	B

ATENÇÃO: Este modelo **NÃO** representa uma prova integral, apenas parte dela.



Universidade de São Paulo
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CENTRO INTERDEPARTAMENTAL DE LÍNGUAS – EXAME DE PROFICIÊNCIA EM LÍNGUA INGLESA
IO
MAIO/2019

Nome: _____

RG: _____

Assinatura: _____

DOUTORADO

PARTE II: SOMENTE PARA CANDIDATOS AO DOUTORADO

- Responda em INGLÊS.
- NÃO copie trechos do texto ou a questão será ANULADA.
- O critério de correção avaliará:
 - Estruturas gramaticais;
 - Coerência;
 - Vocabulário;
 - Pertinência ao assunto proposto
- Esta questão **vale de 0 a 10 pontos**.
- **Observação:**
 - A Parte I possui peso 2 e a Parte II possui peso 1.
 - A **Nota Final** será a média ponderada das duas provas (Parte I e Parte II):
 - **$NF = \frac{(Parte\ I \times 2) + (Parte\ II \times 1)}{3}$**

Plastics and microplastics in the oceans: From emerging pollutants to emerged threat

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The benefits of plastics, including versatility, resistance and durability to degradation, are well known and led to the actual definition of “age of Plastics”, where almost everything contains this material. Plastic production increased dramatically worldwide over the last 60 years, passing from 0.5 million tons/yr in 1960 to almost 300 million tons in 2013. Europe ranks second at global level with 20% of the total production, corresponding to 57 million tons of plastics produced in 2012; European plastic industry gives direct employment to over 1.45 million people, generating about 26.3 billion euro for public finance and welfare (Plastic Europe, 2014/ 2015). Plastic materials also pose a serious threat to the marine environment when not properly disposed or recycled. Approximately 60–80% of the world’s litter is in form of plastic (Derraik, 2002), and almost 10% of the annual production ends up into the oceans, where degradation of plastic objects can take several hundred years. The main inputs of plastics into the sea derive from beaches and land-based sources like rivers, storm water runoff, wastewater discharges, or transport of land litter by wind (Ryan et al., 2009). Maritime activities contribute with materials lost by professional and recreational fishing, and debris dumped by commercial, cruise or private ships (Cooper and Corcoran, 2010). Plastic accumulation in the marine environment produces several negative repercussions: from the aesthetic impact of litter and economic costs for beach cleaning, to adverse biological and ecological effects which, according to last conservative estimates from UNEP, would cause an overall economic damage to marine ecosystems of \$13 billion each year (Year Book and Valuing Plastic, Nairobi, 2014).

A recent analysis revealed that 663 marine species experience adverse effects from interaction with plastic (CBD, 2012), a 40% increase compared to a previous census (Laist, 1997). Entanglement in and ingestion by large organisms can have fatal but also sub lethal consequences, compromising their ability to capture and digest food, sense of hunger, escape from predators, decrease of body condition and impairment of locomotion, including migration. Marine mammals, seabirds, turtles, fishes are the most impacted organisms by macro debris (Laist, 1997; Derraik, 2002; Allsopp et al., 2006) with an impressive percentage of affected individuals in some species: at least 96% of North Sea fulmars have been reported to contain at least one piece of plastic in the stomach. Since plastic waste production is continuously increasing, it is expected that also the number of influenced species will grow in the future. The knowledge on the presence of plastics in small fish and invertebrates has been hampered by the greater technical difficulty in isolation and identification of microscopic particles from tissues (Cole et al., 2014; Avio et al., 2015b). Ingestion is the most likely interaction with microplastics for many organisms particularly when feeding mechanisms do not allow to discriminate between particles (Moore et al., 2001). Absorption of microplastics by organisms from the primary trophic level, e.g. phytoplankton and zooplankton, could be a pathway for transfer into the food chain. Some organisms such as shore crabs (*Carcinus maenas*) and filter feeding bivalves not only ingest microplastics along with food, but also contain these particles in the gills due to ventilation mechanisms (Browne et al., 2008; Moore, 2008; Watts et al., 2014).

Beside studies describing the presence of microplastics in tissues of marine organisms, a few investigations considered the potential for microplastics to be transferred between trophic levels following ingestion. Many zooplankton species undergo diurnal migrations, possibly acting as vectors of microplastics to greater depths and relative inhabitants, either through predation or production of fecal pellets sinking to the seafloor (Wright et al., 2013a). Field

observations highlighted the presence of microplastics in the scats of fur seals (*Arctocephalus* spp.) and the authors suggested that microplastics had initially been ingested by the planktonfeeding fish, *Mycophii*, which is the main prey consumed by fur seals (Eriksson and Burton, 2003). In feeding experiments under controlled conditions, microplastics previously been ingested by blue mussels (*Mytilus edulis*), were identified in the gut and haemolymph of the shore crab (*Carcinus maenas*) (Farrell and Nelson, 2013): caution was suggested in interpreting these results due to large variability in the amount of microspheres in tissues samples, the low number of analyzed individuals, and the exposure levels exceeding those from natural field conditions. Fish fed with *Nephrops norvegicus* containing polypropylene filaments, were found to ingest but not to excrete the microplastic strands (Murray and Cowie, 2011), further corroborating the potential for trophic transfer.

Plastic pollution in the marine environment is now recognized as a real threat with a global-scale distribution and adverse effects spanning from molecular level, physiological performance and organisms health, up to the loss of ecosystemic services. Due to the long-life of plastics on marine ecosystems, harm to marine life would continue for many decades even if the production and disposal of plastics suddenly stopped.

In this respect, it is imperative that severe measures are taken to address the problem at both international and national levels. Further studies are needed to better elucidate factors influencing the occurrence of microplastics in marine organisms, and modulation of biological effects. New scientific data should sustain input for conservation management, provide marine scientists with better evidence for political authorities responsible for normative guidelines, and strengthen the basis for educational campaigns.

At the same time, the rise of public awareness on environmental microplastics should also stimulate technological innovation to reduce the use and consumption of plastics, minimize their input into the environment, stimulate a new approach toward collection and re-use of stranded materials.

Escreva um ***ABSTRACT*** em inglês para o texto *Plastics and microplastics in the oceans: From emerging pollutants to emerged threat*.

O modelo de abstract contém *objetivo, metodologia, resultado, recomendação, conclusões e palavras-chave*. No abstract que você irá criar a partir desse texto, você deverá escrever entre 80 a 100 palavras, detendo-se apenas às informações apresentadas no texto.
