UNIVERSIDADE FEDERAL DO PARÁ
INSTITUTO DE GEOCIÊNCIAS
PROGRAMA DE PÓS-GRADUAÇÃO EM CIÊNCIAS AMBIENTAIS

PROCESSO DE SELEÇÃO PARA INGRESSO NO
(DOUTORADO ACADÊMICO) – TURMA 2018
EDITAL DOUTORADO Nº 01/2017
PROVA ESCRITA
CADERNO DE QUESTÕES

INSTRUÇÕES:

1) Esta PROVA ESCRITA contém 03 questões numeradas de 01 a 03, dispostas da seguinte maneira:

a. A questão número 01 é uma questão GERAL;

b. As questões 02 e 03 são ESPECÍFICAS das linhas de pesquisa.

2) Todos os candidatos devem responder a todas questões.

3) Não será permitida a consulta bibliográfica durante a realização da prova.

4) Escreva e assine seu nome nos espaços próprios ao final desta folha. É proibido escrever seu nome em qualquer outro lugar do caderno de questões ou folhas de resposta ou fazer qualquer marca que identifique o candidato.

5) O tempo disponível para esta prova é de 4 (quatro) horas.

6) Quando terminar as provas, entregue ao aplicador este CADERNO DE QUESTÕES e as FOLHAS DERESPOSTA e certifique-se que foram grampeados juntos.

7) O candidato somente poderá deixar o local de prova após decorridas duas horas do início da sua aplicação.

8) O candidato será desclassificado do processo seletivo caso utilize, durante a realização da prova, equipamentos eletrônicos, headphones, celulares ou fontes de consulta, se comunique com outro participante; apresente dado(s) falso(s) na sua identificação.

NOME DOCANDIDATO	
ASSINATURA	

01 – QUESTÃO GERAL:

"…the socio-environmental problems only exist due to the way of appropriation of the world and of nature based on social and power relations, which are materialized by economic, political, scientific, and religious means, among others. The challenge nowadays is to understand the complexity embedded in the dynamics of socio-environmental systems and of its articulation with the biosphere…

….From such a perspective, the research on socio-environmental problems is fundamentally the acknowledgment of the interdependent relation between society and nature. Consequently, it is by definition a study that requires an interdisciplinary focus on the relationship between mankind and nature. Environmental issues emerge from the interaction of social and ecological processes and may be examined within the context of social and environmental parameters, as well as spatial and time ones. This problem is a research field that agglutinates numberless subjects, implying the need for interdisciplinary research. Environmental research is not shown as a new topic, but rather as an agglutination of old topics that have already been addressed on a large scale by specialized subjects, involving the analysis of, among others, biological, physical, chemical, hydrological processes that are related to the economic and social problems mediated by science and technology. It is new, though, because it implies – simultaneously – a totalizing and systemic approach, which encompasses subjects that already exist and implies articulating and redefining the exact same subjects...

….It must be considered that the process of gradual incorporation of interdisciplinary practices by research groups and by postgraduate programmes is increasing and that it requires increasingly affirmative actions for its adoption, with a view to the challenges in relation to both social and environmental issues such as the urgency to adopt principles associated with the interests of the country's development on a sustainable basis..."

Philippi Jr. et al. Sustainable Development, Interdisciplinarity and Environmental Sciences. RBPG, v. 10, n. 21, p. 509 - 533, October 2013.|

a) **A partir do exposto pelos autores, elucidar como devem ser tratados os problemas ambientais contemporâneos pela pesquisa e;**

b) **evidenciar as possíveis contribuições das ciências ambientais no enfrentamento dos problemas ambientais da Amazônia**.

QUESTÃO 2

"Amazonian deforestation is rapidly destroying the forest and foreclosing opportunities for sustainable use of the forest. Most important is loss of the opportunity to capture the value of the environmental services provided by the forest as a new basis for the economy in the region's interior. These services, including maintenance of biodiversity, water cycling and carbon stocks, have a value that greatly exceeds that of land uses (such as cattle pasture) in deforested areas. The role of the forest maintenance as a measure for mitigating global warming is the environmental service that is closest to generating an appreciable monetary flow. Such flows must be both large and rapid if they are to change the direction of development in the region. The extraordinarily high predicted impacts of global warming in Brazil, including die off of Amazonian forest, should provide ample reason for Brazil to take on a leading role in international negotiations to set a maximum acceptable (i.e., "dangerous") level of atmospheric concentration at a low value. It also provides a strong reason to create mechanisms by which the carbon value of avoided deforestation can be credited. Above all, immediate actions are needed to greatly slow deforestation in Amazonia".

Fearnside, P. Environmental Services as a Basis for the Sustainable Use of Tropical Forests in Brazilian Amazonia. In: Ortega, E. &Ulgiati, S. (editors): Proceedings of IV Biennial International Workshop "Advances in Energy Studies". Unicamp, Campinas, SP, Brazil. June 16-19, 2004. Pages 31-36.

O fragmento acima de um artigo de 2004 propõe uma reflexão sobre o papel das florestas amazônicas na mitigação das mudanças climáticas globais e apontam a necessidade de ações imediatas para diminuir o desmatamento da Amazônia.

a) **Sintetize o texto vinculado a Questão 2;**

b) **Explique brevemente o que aconteceu com o desmatamento da Amazônia desde o ano da publicação deste artigo, apontando os avanços e desafios no combate ao desmatamento**.

QUESTÃO 3

The Amazon basin is characterized by a strong interplay between the atmosphere and vegetation. Anthropogenic land use and land cover change (LULCC) affects vegetation and the exchange of energy and water with the atmosphere. Here we have assessed potential LULCC impacts on climate and natural vegetation dynamics over South America with a regional Earth system model that also accounts for vegetation dynamics. The biophysical and biogeochemical impacts from LULCC were addressed with two simulations over the CORDEX-South America domain. The results show that LULCC imposes local and remote influences on South American climate. These include significant local warming over the LULCC-affected area, changes in circulation patterns over the Amazon basin during the dry season, and an intensified hydrological cycle over much of the LULCC-affected area during the wet season. These changes affect the natural vegetation productivity which shows contrasting and significant changes between northwestern (around 10% increase) and southeastern (up to 10% decrease) parts of the Amazon basin caused by mesoscale circulation changes during the dry season, and increased productivity in parts of the LULCC-affected areas. We conclude that ongoing deforestation around the fringes of the Amazon could impact pristine forest by changing mesoscale circulation patterns, amplifying the degradation of natural vegetation caused by direct, local impacts of land use activities.

Wu, M. et al. Impacts of land use on climate and ecosystem productivity over the Amazon and the South American continent. Environmental Research Letters, Volume 12, Number 5, 2017

A partir do resumo do artigo responda:

a) **O que acontece com a circulação de Mesoescala devido à mudança do uso da terra?**

b) **Qual a influência do LULCC no comportamento do clima na América do Sul?**