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FACULTY OF HEALTH SCIENCES  
DEPARTMENT OF ENVIRONMENTAL HEALTH SCIENCE



## FINAL EXAMINATION

TITLE OF PAPER	ENVIRONMENTAL IMPACT ASSESSMENT
COURSE CODE	EHS445
DURATION	2 HOURS
DATE	NOVEMBER/DECEMBER 2018
TOTAL NUMBER OF MARKS	100
INSTRUCTIONS	<ol style="list-style-type: none"><li>1. DO NOT OPEN THIS PAPER UNTIL YOU ARE INSTRUCTED TO DO SO.</li><li>2. ANSWER QUESTION ONE AND ANY OTHER QUESTION.</li><li>3. BEGIN YOUR ANSWERS TO EACH QUESTION ON A FRESH PAGE. ENSURE THAT ALL ANSWER SHEETS ARE NUMBERED CORRECTLY.</li><li>4. POOR HANDWRITING AND CARELESSNESS IN ENGLISH LANGUAGE GRAMMAR SHALL RESULT IN LOSS OF MARKS.</li><li>5. ANY FORM OF MISCONDUCT DURING THE TEST IS PUNISHABLE IN LINE WITH RELEVANT ACADEMIC REGULATIONS.</li></ol>

1. Economic criteria such as land values, the availability of infrastructure, the distance from sources and markets, and the labour supply, are likely to be important. This is related to;
  - (a) Alternative locations
  - (b) Alternative processes and equipment
  - (c) Different scales of development
  - (d) Operating conditions
2. The size of a waste-disposal site can be changed, depending, for example, on the demand for landfill space. This is related to;
  - (a) Business unusual option
  - (b) Different scales of development
  - (c) Project size option
  - (d) Different project/site layouts and designs
3. 1500 MW of electricity can be generated by one combined-cycle gas turbine power station, by a tidal barrage, by several waste burning power stations or, in the extreme, by thousands of wind turbines. This is related to;
  - (a) Business as usual option
  - (b) No action option
  - (c) Alternative processes and equipment
  - (d) Different project/site layouts and designs
4. Gravel can be directly extracted or recycled. This is related to;
  - (a) Business as usual option
  - (b) Project action option
  - (c) Same project/site layouts and same designs option
  - (d) Alternative processes and equipment
5. A noisy plant can be sited near or away from residences. This is related to;
  - (a) Different project/site layouts and designs
  - (b) Alternative night times
  - (c) Alternative processes
  - (d) Alternative locations
6. Power-station cooling towers can be few and tall (using less land) or many and short (causing less visual impact). This is related to;
  - (a) Different scales of development
  - (b) Different project/site layouts and designs
  - (c) Alternative power production choice option
  - (d) Alternative locations
7. A level of noise at night is usually more annoying than the same level during the day, so night-time work could be avoided. This is related to;
  - (a) No action option
  - (b) Day and night consideration option
  - (c) Operating conditions
  - (d) Different approaches to noise
8. Establishing designated routes for project-related traffic can help to minimize disturbance to local residents. This is related to;
  - (a) Linear projects option
  - (b) Traffic volume minimization option
  - (c) Business as usual option
  - (d) Operating conditions

9. Construction can take place at times of the year that minimize environmental impacts, for example on migratory and nesting birds. This is related to;
  - (a) Conservation sensitive approach option
  - (b) Operating conditions
  - (c) Business as usual option
  - (d) Business unusual option
10. Remarkable growth of interest in sustainability and the better management of development in harmony with the environment, has largely been observed in the last;
  - (a) Three decades
  - (b) Two decades
  - (c) Four decades
  - (d) Five decades
11. According to Glasson et al (2012), the popularity of EIA has grown to an extent that currently, the number of EIS produced per year is about;
  - (a) 200
  - (b) 600
  - (c) 400
  - (d) 800
12. Employment opportunities, services (e.g. health, education) and community structures, life-styles and values may be affected by development actions. These issues are better understood using;
  - (a) Environmental impact statement
  - (b) Risk assessment
  - (c) Socio-economic impact assessment
  - (d) Strategic environmental assessment
13. EIA for programmes, plans and policies, etc., is known as;
  - (a) Risk assessment
  - (b) Socio-impact assessment
  - (c) Environmental impact statement
  - (d) Strategic environmental assessment
14. An approach to the analysis of risks associated with various types of development is known as;
  - (a) Risk assessment
  - (b) Socio-impact assessment
  - (c) Environmental impact statement
  - (d) Strategic environmental assessment
15. One of the international responses to meet the goal of sustainable development was;
  - (a) The Maputo Summit in 1995
  - (b) The United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro in 1992
  - (c) The United Nations Conference on Sustainable Development (UNCSD) held in Durban in 2000
  - (d) All of the above

16. Agenda 21 was a result of;
  - (a) The Maputo Summit in 1995
  - (b) The UNCSD in Durban in 2000
  - (c) The UNCED in Rio de Janeiro in 1992
  - (d) United Nations Environment Programme
17. In EIA, LULU refers to;
  - (a) Largely undetected land-impacting uses
  - (b) Long-range undesirable land-use changes
  - (c) Lasting and unacceptable land-uses
  - (d) Locally unacceptable land-uses
18. LULU has largely been applied in;
  - (a) USA
  - (b) UK
  - (c) Africa
  - (d) Australia
19. An example of point infrastructure/projects is;
  - (a) Electricity transmission lines
  - (b) Power stations
  - (c) Sewerage pipes
  - (d) Potable water supply pipes
20. An example of band infrastructure is;
  - (a) Power stations
  - (b) Roads
  - (c) Bridges
  - (d) Harbours
21. Major projects can be defined according to;
  - (a) Size of rural population affected
  - (b) Financial investment and type of activity
  - (c) The extent of environmental population and area covered by the project
  - (d) Distance of the project from environmentally-sensitive areas
22. One of the following characteristics is a distinguishing factor for large projects;
  - (a) Site of the project
  - (b) Number of people employed
  - (c) Characteristics of pollutants produced
  - (d) Environmental components affected (e.g., land, water, air, flora, etc.)
23. Planning, conflict resolution, construction, operation, close down, etc., are examples of;
  - (a) Environmental impact statement
  - (b) Project life-cycle
  - (c) Scoping of project life-cycle
  - (d) Non-technical summary
24. Previously polluted and derelict land is brought back into productive use.
  - (a) Socio-economic impact
  - (b) Physical impact
  - (c) Distributional impact
  - (d) Strategic impact

25. Pressure on local health services and on the local housing market, and increases in community conflict and crime
- Socio-economic impact
  - Actual and perceived impact
  - Qualitative impact
  - Direct impact

### QUESTION TWO [25 MARKS]

1. A road construction project that cuts through an unpolluted environment has been planned for a particular area. However, according to Figure 1, whether the project goes ahead or not, there will be changes (called effects of no action) to this area in the future. Describe some of the factors that could cause these changes even when the project does not proceed [5].

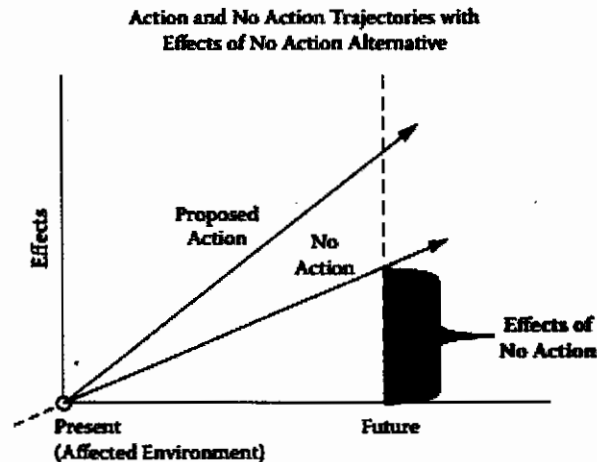


Figure 1: No action alternative

- There are many definitions of sustainable development, however, there are number of characteristics common to all definitions. List any five such characteristics? [5]
- What are weak sustainability position and strong sustainability position? [8]
- State the four main purposes of EIA [4].
- Define sustainable development according to the Brundtland Report [3].

### QUESTION THREE [25 MARKS]

- The United Nations Conference on Environment and Development (UNCED), the Johannesburg Earth Summit of 2002, the 2009 Copenhagen climate conference, etc., are some of the responses to meet sustainable development goals. What were the failures of these institutions? [6]
- The environmental impacts of a project are those resultant changes in environmental parameters, in space and time, compared with what would have happened had the project not been undertaken. The parameters may be any of the type of environmental receptors and/or socio-economic aspects. With this introduction, summarise the concept of the nature of environmental impacts by labelling Figure 2 [6].

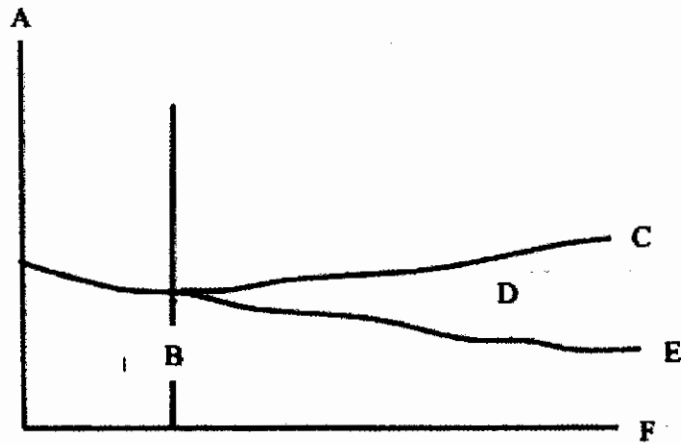


Figure 2. The nature of an environmental impact

3. One of the definitions of EIA is: an assessment of the impact of a planned activity on the environment.
- 3.1 Based on the definition above, chose the correct statement below [1]
- An EIA must be conducted for all planned activities
  - An EIA cannot be conducted for all planned projects
- 3.2 If your choice was (a), with the aid of examples, describe any three approaches that may be used in conducting EIAs for all projects. If your choice was (b) above, with the aid of examples, describe any three approaches that may be used in deciding between projects that require EIA from those that do not require an EIA [12].

#### QUESTION FOUR [25 MARKS]

1. As a process, EIA involves a number of steps. For each of the given statements, state the relevant step of the EIA process [20].
- Narrows the application of EIA to those projects that may have significant environmental impacts.
  - Identification of crucial and significant issues, from all of a project's possible impacts and from all the alternatives that could be addressed.
  - Establishment of both the present and future state of the environment, in the absence of the project.
  - Introduction of measures to avoid, reduce, remedy or compensate for any significant adverse impacts.
  - Ensuring the quality, comprehensiveness and effectiveness of the EIA, and that the public's views are adequately taken into consideration in the decision-making process.
  - Recording of outcomes associated with development impacts, after a decision to proceed.
  - Clarification of the purpose and rationale of the project, and an understanding of its various characteristics, including stages of development, location and processes.
  - Consideration by the relevant authority of the EIS (including consultation responses) together with other material considerations.

- (i) Identification of the magnitude and other dimensions of identified change in the environment with a project/action, by comparison with the situation without that project/action.
  - (j) This is a vital step in the process, such that if it is done badly, much good work in the whole EIA process may be negated
2. Some of the components of an EIS are the non-technical summary and method statement. Describe some of the contents of;
- (a) Non-technical summary [2]
  - (b) Method statement [3]

**QUESTION FIVE [25 MARKS]**

1. The economic goal of aiming at increasing gross national product (GNP), using more inputs to produce more goods and services, is clearly a desire of many countries. However, this contains the seeds of its own destruction.
- (a) Why is this the case? [5]
  - (b) Use a sketch to illustrate your arguments which you have presented in (a) above [7].
2. In order to meet the goal of sustainable development, a global response is needed for issues of global concern. State any three such issues [3].
3. State any five characteristics of major projects [5].
4. State any five examples of large projects [5].