
UNIVERSITI SAINS MALAYSIA

1st. Semester Examination
2004/2005 Academic Session

October 2004

EAP 584/4 – Environmental Impact Assessment

Duration : 3 hours

Instructions to candidates:

Arahan kepada calon:

1. Ensure that this paper contains **FIVE (5)** printed pages before you start your examination.
Sila pastikan kertas peperiksaan ini mengandungi FIVE (5) muka surat bercetak sebelum anda memulakan peperiksaan ini.
2. This paper contains **SIX (6)** questions. Answer **FIVE (5)** questions only. Marks will be given to the **FIRST FIVE (5)** questions put in order on the answer script and **NOT** the **BEST FIVE (5)**.
Kertas ini mengandungi ENAM (6) soalan. Jawab LIMA (5) soalan sahaja. Markah hanya akan dikira bagi LIMA (5) jawapan PERTAMA yang dimasukkan di dalam buku mengikut susunan dan bukannya LIMA (5) jawapan terbaik.
3. All questions **CAN BE** answered in English or Bahasa Malaysia or combination of both languages.
Semua soalan boleh dijawab dalam Bahasa Inggeris atau Bahasa Malaysia ataupun kombinasi kedua-dua bahasa.
4. Each question carry equal marks.
Tiap-tiap soalan mempunyai markah yang sama.
5. All question **MUST BE** answered on a new sheet.
Semua jawapan MESTILAH dijawab pada muka surat yang baru.
6. Write the answered question numbers on the cover sheet of the answer script.
Tuliskan nombor soalan yang dijawab di luar kulit buku jawapan anda.

1. (a) Discuss any **THREE (3)** of the following terms in the context of EIA:-
- i) monitoring
 - ii) residual impacts
 - iii) public involvement
 - iv) Matrix method of analysis
- (9 marks)
- (a) *Huraikan sebarang TIGA (3) di antara sebutan-sebutan berikut dalam konteks EIA: -*
- i) *pengawasan*
 - ii) *kesan berbaki*
 - iii) *penyertaan awam*
 - iv) *kaedah analisis matriks*
- (9 markah)
- (b) Table 1 listed the results of water quality analysis of a water sample and noise monitoring during construction phase.
- i) Give comments on the water quality results and noise level
 - ii) Give **ONE (1)** mitigation method for each water quality parameter so that each parameter will improved and comply to the Standard.
 - iii) Give **ONE (1)** mitigation method to improve the noise level in the evening

Table 1

Parameters	Before Project	During construction of Project
Coliform Bacteria, MPN/100mL	250	9,400
Colour, Hazen units	20	50
SS, mg/L	50	500
Turbidity, NTU	20	200
Noise, dBA (in the evenings)	35	65

(11 marks)

- (b) *Jadual 1 menunjukkan keputusan analisis kualiti sampel air dan pengawasan hingar semasa fasa pembinaan.*
- i) *Beri komen mengenai keputusan kualiti air dan nilai hingar tersebut*
 - ii) *Untuk setiap parameter, berikan SATU (1) kaedah tebatan supaya setiap parameter kualiti air akan meningkat dan mematuhi Standard*
 - iii) *Berikan SATU (1) kaedah tebatan untuk memperbaiki tahap hingar di sebelah malam.*

Jadual 1

<i>Parameter</i>	<i>Sebelum Projek</i>	<i>Semasa pembinaan projek</i>
<i>Bakteria Koliform MPN/100mL</i>	250	9,400
<i>Warna, unit Hazen</i>	20	50
<i>SS, mg/L</i>	50	500
<i>Kekeruhan, NTU</i>	20	200
<i>Hingar, dBA (diwaktu malam)</i>	35	65

(11 markah)

2. (a) Environmental Contingency Plan must be included in EMP. Describe the following:
- i) the meaning
 - ii) the objectives and reasons to be included
 - iii) the elements required in the Emergency Plan
- (10 marks)
- (a) *Pelan Kontigensi Alam Sekitar perlu dimasukkan dalam EMP. Bincangkan:*
- i) *maksudnya*
 - ii) *objektif atau matlamat diadakan*
 - iii) *elemen-elemen yang diperlukan dalam Pelan Kecemasan*
- (10 markah)
- (b) Discuss the followings:
- i) Environmental audit
 - ii) Environmental training
- (10 marks)
- (b) *Huraikan perkara berikut:*
- i) *audit alam sekitar*
 - ii) *latihan alam sekitar*
- (10 markah)

3. (a) Choose only **one** project type. Lists and discuss **TEN (10)** expected impacts to the environment from a list of project type below. Impacts should be divided into phases of any typical projects. Each of the project have dimension which make Detailed Impact Assessment Mandatory.

Project types:-

- i) Municipal Solid Waste or Sewage Treatment and Disposal
- ii) Toxic and Hazardous Waste Treatment and Disposal
- iii) Crude Palm Oil Industry
- iv) National Highway

(10 marks)

- (b) Describe mitigating measures for each of the identified impacts.

(10 marks)

4. A major new township development with total area of 888 hectare is expected to boosts the economy of Perlag state. It will involve relocation of 500 families from three effected aborigine people villages. This project will caused two major water catchments area for Perlag State to be affected. Perlag has five catchments areas for water supply of 100,000 citizens. As the project is economically driven rather than environmentally, the environmental pressure groups are against the project approval. The rulers of Perlag state would want an Environmental Impact Assessment to be carried out within 3 months to prove that the project will be beneficial if the mitigating measures are good. However, to have good mitigating measures the impacts should be properly predicted.

Choose methods of predictions for **TWO (2)** impacts from the lists below.

- i) air quality impact
- ii) social impact
- iii) ecological impact
- iv) noise quality impact
- v) traffic impact
- vi) surface water impact
- vii) ground water impact
- viii) geotechnical impact
- ix) soil

(20 marks)

5. (a) Describe major factors to be considered during decision making process for the significance of any environmental impact.

(12 marks)

- (b) Explain the possible assessment decisions that could me made when using all the factors above.

(6 marks)

- (c) Decide whether the factors in (a) should be dealt with, in synergistic effect or in isolation.

(2 marks)

6. (a) A weighted rating approach to site selection for the construction of an impounding reservoir may be used based on the criteria such as pollution, nature conservation and social acceptability. Based on these criteria, discuss the related issues that may be involved and need to be addressed for the impounding reservoir project.

(10 marks)

- (a) *Pendekatan pentarafan berpemberat dalam pemilihan tapak untuk pembinaan kolam takungan air boleh diguna pakai berdasarkan kriteria seperti pencemaran, pemuliharaan semulajadi dan penerimaan sosial. Berdasarkan kriteria tersebut, bincangkan isu-isu berkaitan yang akan terbabit dan yang perlu diutarakan untuk projek takungan air.*

(10 markah)

- (b) Discuss about the virtue of public participation in dealing with the public denial of a project. Described the way that public participation must be included in Detailed Assessment. Then, explain the mechanism for public participation to be carried out.

(10 marks)